



AIUB

Office of
Research and Publications

The effect of COVID-19 on Supply Chain Management of RMG Sector in Bangladesh

Esrat Jebin, Uppsala University
Dr. Md. Faruque Hossain, AIUB

AIUB Journal of Business and Economics

The article is an extended version of the paper presented in the 2nd AIUB International Conference on Business and Management-2021
Volume: 19 Issue Number: 1 ISSN (Online): 2706-7076

January 2022

Citation

Jebin, E., and Hossain, M.F., The effect of COVID-19 on Supply Chain Management of RMG Sector in Bangladesh. (2022) *AIUB Journal of Business and Economics*, 19 (1), 1-28.



Copyright © 2022

American International University-Bangladesh

AIUB Journal of Business and Economics

Volume 19, Issue 1

ISSN (PRINT) 1683-8742

ISSN (ONLINE) 2706-7076

January 2022 pp. 1-28

The Effect of COVID-19 on Supply Chain Management of RMG Sector in Bangladesh

Esrat Jebin

Uppsala University, Sweden

*Md. Faruque Hossain**

American International University-Bangladesh

Corresponding author*:

Email: mfhossain@aiub.edu

The Effect of COVID-19 on Supply Chain Management of RMG Sector in Bangladesh

Abstract

Readymade garments (RMG) are the largest export earner for Bangladesh, starting from \$31.57 million, has now boomed to \$24 billion in fiscal year 2019-20. Although this is less than the previous year but still this sector is saving the total economy of Bangladesh. Amid the COVID-19 pandemic when the economy of the whole world on the edge, Bangladesh economy still trying to fight depending on apparel industry. Due to COVID-19 pandemic, many things are changed in this factor and we are still trying to figure out how we can cope up with the situation. The unprecedented pandemic effect of COVID-19 disrupted the entire supply chain of RMG sector. Along with it many more problems come in front which we ignored in the past. Decreasing lead time, over dependency on few countries for raw material, declining percentage female worker are some of these problems. Therefore, this study is an attempt to find out the effect of COVID-19 pandemic on the supply chain management of the RMG sector, consequence of this pandemic, steps taken by the garments owners and BGMEA, major problems the sector is facing, and solution of those problems. The research tool was questionnaire and interview scheduled for management and owners. Data was collected randomly from different levels of managements. The study divulged that garments owner are not happy with the changing attitude of international buyers. The BGMEA has been monitoring the situation from the beginning of the pandemic and now they are thinking of alternate option for raw materials and to create new business relationship. Concluding remarks, at the beginning, the industry was build based on wage competitiveness but now we have to be very strong with other components in order to survive. Wage competitiveness, compliance, lead time and supply chain these four are the pillar to be successful in this industry and now it is time to give equal importance on all of these.

Keywords: Supply Chain Management, RMG, BGMEA, COVID-19, Bangladesh

1. Introduction

The readymade garments industry is the backbone of Bangladesh's economy. From the "bottomless basket" to a country of middle income is a long way and our RMG sector has a huge contribution behind this. "Made in Bangladesh" is now not only a tag, it is a pride for us. According to BGMEA with the highest number of green factories, "Made in Bangladesh" is now 150 countries fashion. The 83% of total export earning comes from this sector which is the single biggest export earner of Bangladesh.

With 35+ years' experience, 4000+ factories are serving all major global fashion brands during winter, summer, and trendy autumn as well as empowering the women of Bangladesh. Around 80% of the garment's workers are now improving their economic condition and contributing to our GDP growth (Jebin and Hossain, 2020; Nizam et al., 2021). Since the 80s to, now our garments sector has gone through ups and downs but we didn't and learn a lot from those experience and our world-class experience is the example of that.

Most of the disasters indeed occur in this sector happened for the negligence of the garments owners and innocent workers fall victim to those. According to the Bangladesh Institute of Labor Studies (BILS) report that was published by The Daily Star in 2014 after the incident of Rana Plaza, from 2005 to 2013, 1512 workers were killed in different incidents in RMG sectors while from 1990 to 2013, 1691 lives were claimed and more than 9595 were injured and many of them didn't even get compensation. An example, the Spectrum Sweater Industries Ltd collapsed on April 11, 2005, and killed 64, injured 80. Another incident happened in the same year at Sun Knitting, Narayanganj where 20 workers were killed. Less than a year later on 25 February 2006, Phoenix Garments in Tejgaon collapsed and claimed 21 lives. In the same year, a fire at KTS Composite Textile mills in Chattagram killed more than 65 workers. In February 2010, 21 workers were killed in a fire incident at Garib and Garib Garment. A fire incident on 24 November 2012 at Tazreen Fashion claimed 117 lives and injured more than 200 people. After that Bangladesh saw the most tragic accident in the history of Bangladesh when Rana Plaza was collapsed on 24 April 2013 and killed at least 1135, injured 2500 and many are still missing. After the tragedy of Tazreen Fashion, the USA threatens to take away GSP and after the Rana Plaza incident USA canceled GSP quota and many international buyers canceled the orders. After that incident, the aftermath changed a bit and the garments industry focused on structural development and safety, as a result developed green factories.

However, the death row didn't stop completely but the situation is changing. Rana plaza incidents and the prior major accident indicated that only less wage can't be the only competitiveness for this huge industry and forced the owners to take safety precautions.

Worker's unrest is another significant phenomenon in Bangladesh RMG sectors (Hossain et al., 2014a; Hossain and George, 2014b). The less wage competitiveness of this sector was actually depriving the workers of this sector for a long time. In January 2019, an eight days long unrest forced garment owners and the government to revise the salary structure, and the revised salary structure was published on 14 January 2019. This unrest creates a negative image of the industry worldwide as well. The unrest ensured them some extra payment; however, the working conditions still have a lot of scopes to improve.

After the Rana Plaza incident and long worker unrest, COVID-19 blows the largest hit on our RMG sector (Jebin and Hossain, 2020). Since our RMG industry largely depends on European and American buyers and we depend a lot on China for few raw materials, the sector was totally in uncertain condition during the first wave of the COVID-19 pandemic. The entire supply chain of readymade garments was broken due to lockdown in 2020. The situation of 2020 makes it clear it is high time to think about supply chain management in a completely different manner to survive this pandemic. Therefore, the main purpose of the study is to find out the current scenario of RMG sector and the effect of COVID-19 pandemic on the supply chain of the RMG sector in Bangladesh. However, the study will focus on the effect of COVID-19 on Garments industry to what length the steps of government are helpful and changes come to supply chain management after one year of COVID-19 pandemic started along with garments owners are handling the supply chain in the changed situation.

2. Materials and Methods

Area: Fifteen garments were selected from Mirpur and Ashulia industrial hub.

Sample: Senior Management were selected from the respective garments.

Tools: Tools used for the research are - questionnaire, face-to-face interview, observation, published reports and articles about the supply chain of the Bangladesh apparel industry in different newspapers, magazines, and journals.

Limitation: There are some obvious limitations and flaws in this research such as:

- The workable small size of samples
- Only management members participated in the interview
- Age limit and exact position of the respondents was not taken into consideration
- Time was short and only 50 respondents from the selected garments expressed their thoughts, views, and problem regarding different issues connected to this matter
- The questionnaire contains 11 questions and was the same for local and export-oriented garments
- The entire 50 respondents from management hold different positions and posts in their organization and avoid disclosing some information because of privacy issues.

Background of the study

After liberation war when our major exporting good jute started loose its golden era, garments industry took over the place and kept the economic heel running. The pioneer of this sector was late Nurool Quader Khan who started this business with a vision to change the economic condition of Bangladesh. With a dream in 1978 he sent 130 trainee to South Korea to learn about how to produce readymade garments. His dream comes true in 1980 when apparel industry started its journey with “Desh Gaarments” and those 130 trainees. Following his path almost that same time Bond Garments of late Akhter Mohammad Musa, Reaz Garments of Late Mohammad Reazuddin, Md. Humayun’s Paris Garments, Engineer Mohammad Faizul Azim’s Azim group, Major (Retd) Abdul Mannan’s Sunmn Group, M Shamsur Rahman’s Style Craft Limited, AM Subid Ali’s Aritrocrat Limited came to market. AM Subid Ali was not only one of the pioneer leaders in this industry but he was also the first president of BGMEA. Following their footsteps, many more hardworking entrepreneurs came in this sector and now Bangladesh is one of the leading apparel industries in the world. The industry which grew up on the base of low wage competitiveness saw many disasters and accidents that claimed many lives and left many other injured, crippled without even proper compensation while the responsible for these incidents didn’t get any punishment. After Rana Plaza tragedy under international pressure garments sectors rebuild and renovate the infrastructure by following the safety guidelines to comply with Accord on Fire and Building Safety in Bangladesh (Accord) and the Alliance for Bangladesh Worker Safety (Alliance). During

that time many orders went to the competitor countries and to come back in competition Bangladesh was forced offered lowest possible price (UNDP Bangladesh, 2020).

The COVID-19 came as curse to the whole economy. At first it was thought that this pandemic will create new opportunity for us as prominent fashion brands were planning to shift their orders from China to other countries like Bangladesh, Vietnam, Indonesia etc. but then the reality stroke when the matter of raw material shortage came in front. When the epidemic broke out in Bangladesh government shut down all the garments along with all other business. And then order cancellation problem came. With prompt decision BGMEA president and other leaders tried to handle that situation. Now when this sector is trying to rise from the ashes, the second wave of COVID-19 hit again. The entire RMG sector is depending on supply chain. From the beginning of the production to very end, each and every step is an example of supply chain management and this COVID-19 has forced to think about it again.

3. Results and Discussions

3.1. Contribution of RMG in Economy

In recent past the economy of Bangladesh was largely dependent on agriculture. After liberation war jute was our main export earner. When jute started to lose its position in the global market, readymade garments industry came as blessing. Our apparel industry plays a significant role not only as our main export earner but also as an income source for millions of poor people.

The RMG sector is one of the major employers and most of the workers in garments industry are women. As a result, our economic backbone readymade garments have a distinctive contribution to improve the socio-economic condition of women. Women are the half of our total population and without their involvement prosper of the country is not possible. Garments industry create that opportunity for them and involving them in this mass production line.

This industry plays a pivotal role in national GDP too. When this industry started its journey, in the FY 1990-1991 its contribution to Gross Domestic Product (GDP) was 2.74% which increased to 12.36% in FY 2017-2018 (Mia and Akter, 2019) and now 4000+ registered factories employing 4 million workers and alone contribution 20 percent of the GDP (Nizam et al., 2021).

From the starting this industry is experiencing a phenomenal growth. In the Fiscal year 1983-84 RMG sector exported 32.57 million USD worth product which was 3.89% of the total export and in 2019-20 fiscal year it rises to 27949.19 million USD which is 83% of the total export (Fig. 1).

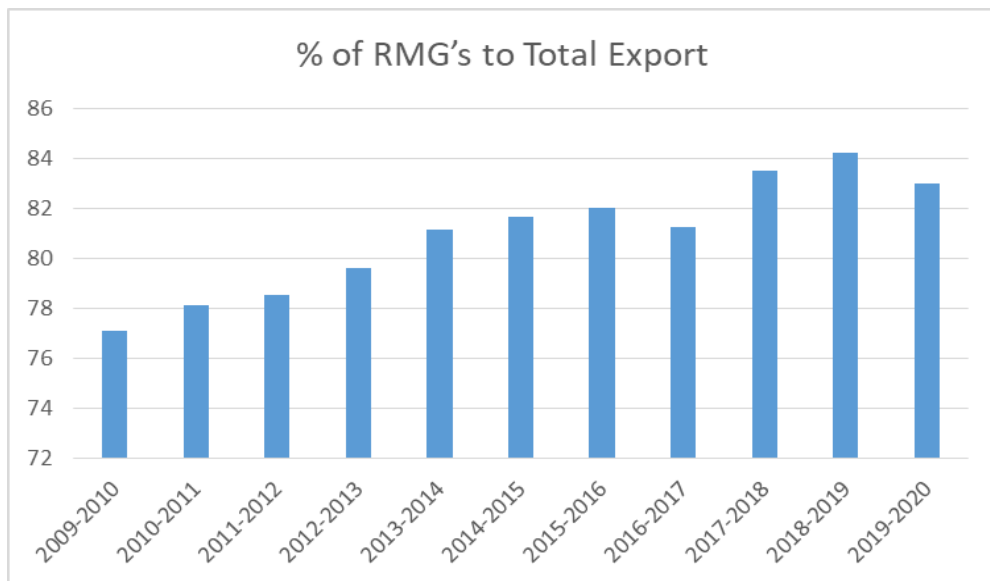


Fig. 1: RMG in the total export earnings (last 10 years)

The sector tremendously developed from beginning year 1983-84. Even 10 years ago the in the fiscal year 2009-2010 percentage of RMG sector in the total export earning was 77.12% and now in 2019-2020 fiscal year it is 83%. However, it is less than the previous fiscal year and undoubtedly it is the effect of COVID-19 (Fig. 1).

The COVID-19 has unprecedentedly disrupted this sector and the recovery is giving a tough challenge. When the first wave hit, cancellation of orders, deferred payments/discounts by buyers, cash crunch shook the industry from the root. In 2020, amid the pandemic the overall garment export observed total 16.94% year on year drop. In 2020 apparel export from south Asian nation dropped by 17%. In an interview with popular online media DW, BGMEA president Rubana Huq said, "Apparel exports declined by 5.83% year-over-year in January" (DW, 2020). According to Export Promotion Bureau (EPB) the RMG's export earnings dropped by 2.99% in 2020. Rubana Huq also pointed out that the 2020 was the darkest period of our apparel

industry. The result of lockdown in America and European countries was worst ever Christmas sale and price and demand declined severely for this reason (Textile Today, 2021).

Due to pandemic Knit and woven fabrics export declined significantly and it affected the total export earning of Bangladesh. In the 2019 Bangladesh earned 16630.64 million USD from Woven fabrics and 16441.74 million USD from knit fabrics. In 2020 it decreased to 13242.36 million USD for Woven garments and 14228.37 for knit garments.

Our main exported items are shirts, trousers, jackets, T-shirts and sweater. Since the COVID-19 epidemic disrupted the world economics, Bangladesh garments industry suffered the worst in every sector.

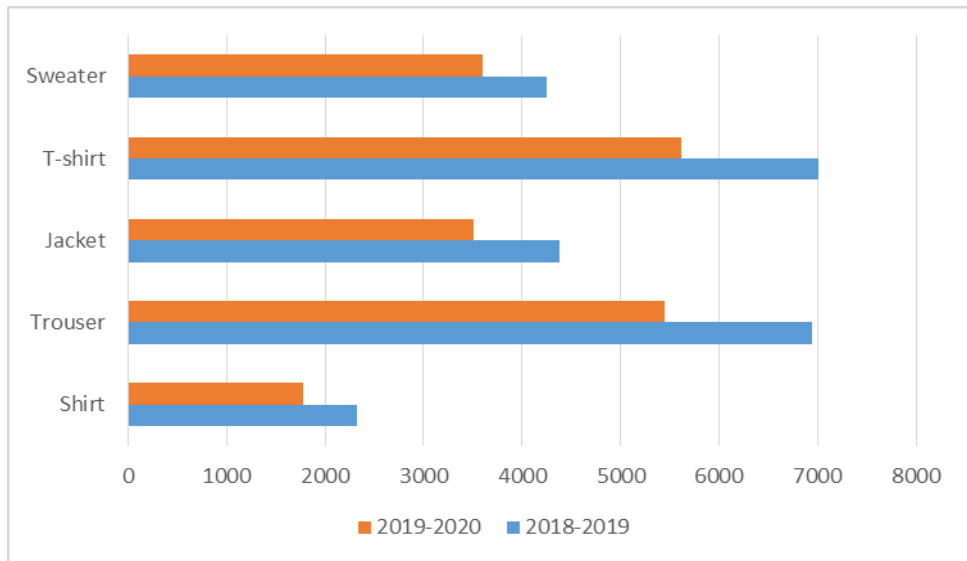


Fig. 2: Export value of items in FY2018-2019 and 2019-2020

In the FY 2019-2020 Bangladesh experienced price of every item declined significantly (Fig. 2) and it is definitely a huge blow for us. It squeezed many small export oriented garments to rock bottom and now they thriving to survive.

3.2. Import Raw Materials

RMG sector of Bangladesh largely depends on some raw material from other countries. Usually we import raw cotton, synthetic or viscose fiber, synthetic

or mixed yarn, cotton yarn and textile fabrics, and accessories like tag, button, zipper, elastic from china or Vietnam depending on buyers demand. In some cases we import some special material from other countries depending on customers demand like organic fabrics mainly come from India and Pakistan, synthetic woven fabrics come from China while Bangladeshi manufacturers are fulfilling the demand of Knit fabrics. Apart from these 80-85% dyeing chemicals and 40% of the capital machinery and spare parts for the textile and garment industry comes from china (The Loadstar, 2020); (Dutta, 2020). In FY 20 from July to September Bangladesh imported \$3.14 billion worth raw material against \$8.06 billion export (New Age, 2020). According to Bangladesh Bank's "Quarterly Review on RMG: July-September FY'21" in FY 21 from July to September value of imported raw material stood at 2845.83 million which was 35.02% of total export earnings from RMG sector.

When the first wave pandemic hit the world and china shut down all kind of export and import the absolute dependency on china pushed Bangladesh at the edge. It made us realize to keep the supply chain running we have to think about the alternate source of raw material. After the lockdown increased demand of the raw material caused price hike which is giving hard time to small export oriented as well as local product manufacturing garments. The COVID-19 led rebooting of the manufacturing unit increase the price of polymer, yarn, Kraft paper and chemicals. According to Bangladesh Garment Accessories and Packaging Manufacturers and Exporters Association (BGAPMEA) price of yarn, polymer, Kraft paper, chemical and ink have increased by 40% to 80%. Price of yarn increased to \$3.5 from \$2.5 per kg, polymer price has gone up to \$1,600 from \$960 per ton, price of Kraft paper has reached to \$1,400 from \$880 per ton, ink price has jumped to \$9-12 from \$7 per kg and price of chemicals has soared to \$90 from \$55 per kg. (Hossain, 2021).

Country's apparel accessories and packaging manufacturers are important backward linkage to the entire apparel industry and right now there are 18000 factories who are producing at least 40 types of products and accessories like buttons, plastic hangers, polybags, labels, zippers, tags, tapes, thread, ribbon, rivets, laces, hooks, transfer film, paper, and ink. The price hike is increasing the investment while they have to sell it at less price. This situation is making their survival more and more difficult. In an interview general secretary of the Bangladesh Apparel Youth Leaders Association - Al Shahriar Ahmed said, "Prices of raw materials have gone up steeply, but RMG exporters are not ready to pay the extra for accessories. We are forced to sell products at lower pre-pandemic prices (Jebin and Hossain, 2020; Rayhan, 2021).

During the interview small local garments owners pointed out that because of price hike now they are losing at least 10 taka per piece. Even the price of spare parts like needles increased 10% and it forced them to change the track of the business. To survive many garments owners are now taking contractual orders instead of producing local garments.

The situation indicated that this is high time to produce raw material in our own country. For example, recently tobacco farmers of Bandarban have expressed their interest to produce cotton. Every year the average demand of cotton is 10 million bales. Bangladesh import 96% of the total annual demand from international market (Purba, 2021). If the project gets successful it will be source of 2150 tons cotton in the fiscal year 2020-2021. We import cotton from 42 countries. Among them India (18.6%), Mali (12.9%), Brazil (10%) United Sates (11.9%), Benin (9.8%), Burkina Faso (6.3%), Australia (5.1%), Ivory Coast (5%) Cameroon (5.1%). Others (15%) holds the significant shares (Fig. 3; Hossain, 2020). If our local sources can cover such huge amount of demand for cotton, then it is undoubtedly a ray of hope amid skyrocketing cotton market.

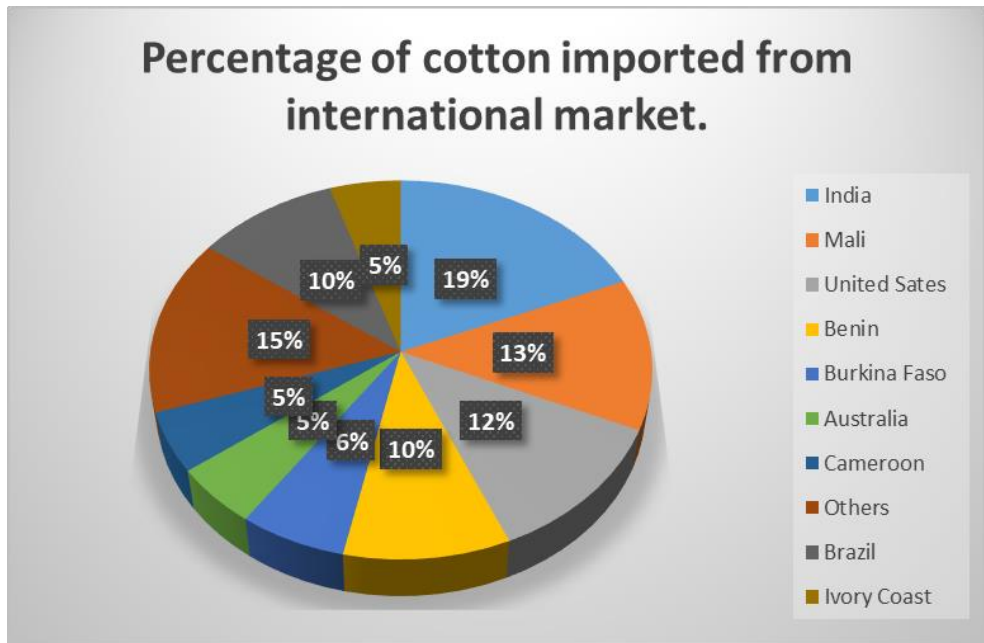


Fig. 3: Cotton imported from different countries

If farmers from hilly areas start to cultivate cotton it will not only fulfill the demand of RMG sector, but also improve the financial condition of that area. Our locally produced cotton can reduce the risk and plays an important role in the entire supply chain of the RMG sector.

3.3. Demand Forecast

Demand forecast and inventory management both are important factors for the RMG sector. Inventory management is one of the main aspects of supply chain management. Supply chain manages the inventory throughout the entire production line via improved information flow. Networked inventory management ensures improved customer service, product variety, low cost and uninterrupted production (Basak et al., 2014; Hossain et al., 2014a).

Demand forecast is closely related with inventory management. In some cases a safety stock is desired however for apparel industry holding stock is costly. Inventory management and demand forecast mainly depends on orders. Whether Export oriented big garments or small local garments, they prefer to buy raw material depending on season, weather, and occasion and customer requirements. Their strategy is simple, aligning product typology with time and customer demand. For an example, sports season, special religious festival, season and timeline of the festival etc.

Because of pandemic inventory management is now trickier and requires special attention. Since in this sector holding up raw material does not add any extra benefit and over dependency on two markets had already made the entire sector vulnerable, to avoid such uncertainty now owners of RMG industries should keep several options open not only for raw materials also for export also. In a recent interview with Dhaka Tribune BGMEA president has indicated this and said, “The pandemic has taught us the vulnerability of the sector. We have woken up with reality and realized that our contracts are not secured. Having cancellation of \$3.18 billion and waking up to daily nightmares of discounts, deferment of shipment, payments and endless discussions had become a part of our routine. It is time to look inwards and not only to concentrate on the West but also explore ASEAN-plus-one or regional collaboration so that we can export within the region and beyond (Ovi, 2021).

3.4. Importance of Supply Chain

Garments sector is the perfect example of supply chain management where a small problem or a delayed information can jeopardize the entire system. The

four main feature of apparel industry are compliance, wages, lead time and supply chain management all of them are interrelated while supply chain management is the most important one.

From the starting RMG sector Bangladesh has gone through many difficulties. After the devastating Rana Plaza incident Bangladesh came back to market after a lot of efforts. Previously Bangladesh built up this industry base on minimum wage competitiveness however with time it is now clear that only low cost labor does not guarantee success for this type of international business especially when the sector is highly competitive. For a long time, Bangladesh only focused on minimum wages and ignored the compliance (Fig. 4). Many owners considered it as an extra cost however without that maintaining proper supply chain and meeting the deadline is not possible since all these factors are connected with each other (Hasan, 2017; Jebin and Hossain, 2020).



Fig. 4: Interrelation between four features of RMG sector

When the devastating fire outbreaks and the collapsed Rana Plaza raised question about poor compliance Bangladesh first time understood the importance of it and started to work on it while our competitors like China, Pakistan, India, Vietnam, Cambodia are in advantage in these two options. As a result many of our buyers turned to those countries when we were improving our structure following rules. The supply chain of Bangladesh once again

disrupted when COVID-19 pandemic broke out. Raw materials is the most important factor to keep the supply chain running and we are highly dependent on China, India for raw material. Due to pandemic when china closed all the border raw material scarcity pushed us on the edge and buyers started to cancel the orders. Fortunately china started to send the raw material within shortest possible time and by negotiating with buyers, garments sector started to fight back.

From the beginning of the production line to delivery everything is part of supply chain management while compliance ensures safety and reduce time and raw material wastage. In apparel industry one single mismatch can destroy the entire chain. For example one mismatched or less count of thread, wrong button line, or small mismanagement of information can jeopardize everything. In garments sector each step has its own supply chain and the final products is the combination of all these small supply chain. For example: thread is a raw material for the production. Thread is produced from cotton. Manufactures who produce thread have their own supply chain which includes buying raw material (cotton) from supplier, necessary equipment, workers and finally delivering the final goods (thread). Scenario is same for all other raw materials of this sector (Fig. 4 and 5).

The entire supply chain of garments industry includes many parties like brand, agent, and suppliers (Fig. 5). Apart from these there are some other parties who are not directly involved in the production process but plays important role in the chain like bank, customs, authority (BGMEA, BKMEA, EPB), clearing and forwarding agents (C&F) etc. (Hasan, 2017; Jebin and Hossain, 2020).

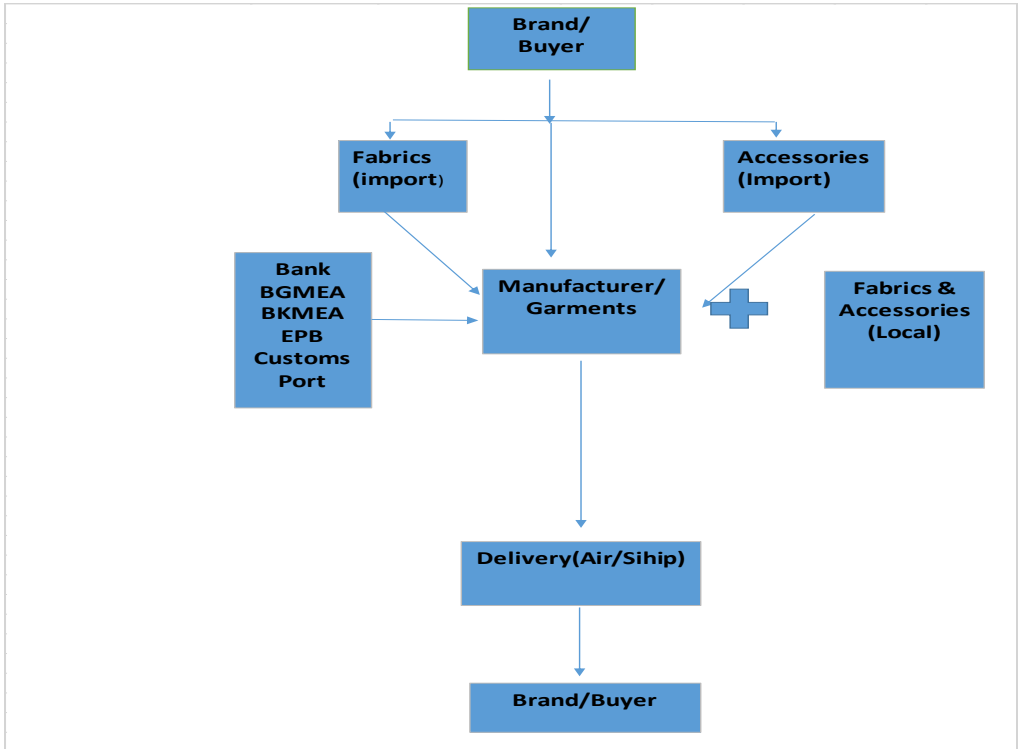


Fig. 5: Supply chain of RMG sector

Since the wide spread of COVID-19 pandemic affected all source of business around the world and made the supply chain more complicated. It made us reexamine and reassess the supply chain once again especially in case of RMG industry. Amid the request stuns, inadequate logistic supports, local international lockdown, supply chain RMG sectors are trying to find out a dependable solution against the unstable condition (Ali et al., 2021).

Fortunately during the second wave of pandemic garments factories of Bangladesh are open and production is going on. To keep the supply chain and production running garments owners are now focusing time and action plan. During the first lockdown we fall in shortage of raw material. To avoid such problems some export oriented garments are keeping some regular raw material in stocks. In some cases local suppliers are fulfilling the demand of raw material.

From July 1, 2021, Bangladesh has gone under lockdown and this time government is in hardline to lessen the spread of Delta variants of Corona. As operation in garments sector is running, and very few public transport are in there on road, worker are facing problems to go to their workplace. Product transportations, supply of raw materials are also getting hampered. To avoid problem some garments have issued authorization letter for workers so that they can move or carry the material without hassle.

Another problem now garments are facing is sudden price hike. After the first wave of pandemic price of some materials like cotton, some accessories increased significantly it is already disrupting the supply chain. Now when another lockdown started just a few days ago, local suppliers are increasing price again and again. Export oriented garments are buying products at this increased rate to keep the supply chain running small garments struggling to survive as their SCM is hardly running.

3.5. Lead Time

Lead time one of the most important feature of apparel industry. In general, lead time is the period from order placement to order shipment. The four main stages of RMG business are (1) CMT (Cut, Make, and Trim), (2) FOB (free on board), (3) ODM (Original design manufacturer), and (4) OBM (original brand manufacturer). The RMG sector of Bangladesh in depends on first two types- CMT and FOB where buyer select the design and materials (Hasan, 2017).

Lead time can be divided into two parts, such as, Information lead time- the time to process and negotiate the order; and order lead time- time for production and shipment of the order (Nuruzzaman and Haque, 2009). After placing the order till the delivery reaches the final destination, lead time includes the elapsed time also (Asgari and Hoque, 2013).

For a fashion driven industry like RMG, lead time is very important as it gives a competitiveness and create new opportunity. In this era taste of consumers change rapidly and brands wants to change the shelves in every other week where season, occasion plays an important role. To keep up with trend fashion world therefore put extra pressure on manufacturer to deliver the product in the shortest lead time. A slight deviation in the schedule may cause a huge consequence and hamper future business opportunity, however completing an order within such strict timeframe is not that as it sounds. When the lead time is short it requires all part of the supply chain to be prompt. Sometimes manufacturers do not have control over all parts of it. For example

if the buyers want foreign raw material or if buyer select the supplier of raw material, manufacturer might not have any control over them. When any of the driver from the supply chain fails to maintain the time, bottleneck creates and that ultimately hit the lead time. As global manufacturer Bangladesh gains its expertise on quality, however in case of lead time we are far behind. Our close competitors China can complete an order within 30-35 days. Vietnam takes 60 days to complete an order where Bangladesh need 120-150 days (Khan, 2021).

India Pakistan, China have their own domestic source of material which give them advantage on lead time. On the other hand Vietnam and Cambodia are close to China. It takes only one week to get raw materials from Shanghai by sea (Hasan, 2017). This is a great privilege which we do not get. So to meet the deadline, manufacturer Bangladesh chalks out the critical path including all the problems that might come on the way to production.

Recently right after the opening of the garments after a long lockdown, international buyers are now pressurizing to complete order within 35-40 days lead time since now ecommerce is gaining popularity and western brands are becoming more and more dependent on online business. Is Bangladesh can't cope up with this situation we might lose our buyers. In an interview with The Daily Star, Jordi Juani, director for Spanish company Jeanologia's Asia division said, "If Bangladesh can't maintain a strict lead time, we will move to alternative destinations like Vietnam." Pointing on the importance of lead time senior director of US-based Cone Denim, Carmen Chan echoed the same, "Lead time is important for Bangladesh to grab more market share in the US. Speed is everything now." The advice of Junai and Carmen indicate the fact that depending on price competitiveness we will not be able to go further and now we have to focus on lead time as well as fabrics, design and technology (Mirdha, 2018).

Previously Bangladesh used to get maximum 90 days lead time however for past few years the fashion trend is changing rapidly and product life cycle on the shelves is decreasing and this credit goes to e-commerce juggernaut. On the other hand, due to changed situation now international retailers and buyers are placing small orders and probing to decrease the lead time for production as well as for shipments. Actually the pressure, through which the retailers are going because of fast changing fashion, they just divert that to the manufacturers. This condition is creating extra pressure on apparel industries as reducing lead time means additional investment. Due to COVID-19 Bangladesh is already in chaotic situation. After a long shutdown order

cancellation and unethical demand of discount started to come from buyer. On the top of that thousands of workers lost their job. In this situation when garments industry is trying to come back depending on some fresh order, buyers are putting pressure on reducing lead time which was mentioned by Fazlee Shamim Ehsan (CEO of Fatullah Apparels Ltd) in a recent interview with textile today. However, sufficient apparel orders to run our factories in the coming days, may be up to October, but every buyer is putting pressure on us to reduce the lead time (Textile Today, 2020).

In spite of some buyers are pressurizing to reduce lead time, garments are tending to accept the order with usual lead time. Usually Bangladeshi garments take maximum 3 months lead time to deliver order. In some special cases and for bulk size order, few export oriented garments get maximum 1 year lead time however it is rare. Lead time starts after buyer approve the sample, as a result factory go for placing orders for raw materials depending on product type, materials type, import country etc. However, since the shipment date is fixed, they make a time and action plan within which they complete the production. For example, if a shipment delivery date is 15 October and production time frame is 35 days and fabrics lead time is at least 60 days then the factory need to place the order for fabrics at least within 10 July.

During the interview some garments owners also mentioned during the first wave of the COVID-19 when China shutdown everything they used local accessories and fabrics to complete the order. After lockdown was withdrawn some buyers didn't cancel the order which was a huge relief for them. When many buyers are trying decrease the lead time some buyers give extra time if they require foreign accessories and fabrics.

Shipment is another crucial point for RMG sector. Usually owners prefer to send shipment by sea since it is budget friendly, however if buyers want they choose air shipment also. If the product seasonality is very low like dress for any special occasion or if the sales is uncertain then manufacturer choose air shipment.

3.6. Problem in the Supply Chain

The RMG sector is a true example of SCM because here each and everything is connected with each other. Fall of one is enough to ruin the entire circle and the consequence is fail to meet not only the deadline but also the season of sale. Fashion world literally change every day. If brands fails to showcase the latest design they will fall behind. This ever changing trend always keep

an extra pressure on our RMG sector however there are some problems that our industry face. According to garments owners the first problem they face in the supply chain is not getting raw material of proper quality and quantity. Since our industry usually do the “cutting, making and trimming”, and the design, fabrics type and quality, accessories is determined by the buyers, ensuring the exact quality is mandatory. In some cases manufacturer provide sample and after approving that they start production. In both case maintaining intended quality seems difficult because in maximum cases suppliers fails to maintain the exact quality in bulk production. For an example, a garment order for fabric of 20 GSM (grams per square meter). The supplier provides 7 GSM fabric. It will affect the elasticity of the dress and desired outcome will not be reflected. Moreover, price depends on GSM, in that case production will stop and they have to wait for intended quality of fabrics or look for alternate option for fabric supply. Undoubtedly it can hamper the entire supply chain as well the lead time. Ensuring the desired quantity is another problem. Sometimes suppliers fail to deliver the promised quantity.

Another problem of RMG sector is the hidden syndicate who take the advantage of the situation and charge extra cost for spare parts or raw material. The hidden syndicate problem became more visible since last year when the pandemic hit the supply of raw material. Local suppliers suddenly increased the price of necessary product after china stopped sending raw materials due to COVID-19 outbreak there. Even this year since lockdown started from 1 July, many owners pointed out that price of many items increased suddenly.

Some technical error in the supply chain is inefficient materials planning, production planning and ineffective time and action plan, delayed information and communication gap. Plan, raw material, information and proper communication, all together make a proper supply chain. A slight deviation in any of these can bring a devastating effect on the supply chain. Since our garments sector do have proper idea about importance of supply chain, any problem can happen in any of these.

3.7. Major Problem to Meet to the Deadline

For last few decades we have witnessed the boom of the industry, as well as experienced many problems. In a highly competitive world where competitors are delivering shipment in least possible lead time sometimes have to struggle to complete order within the 90 days limit.

With increased competition the CM and FOB have decreased significantly. The capitalist western brand now calculate calculate all cost associated with production and keep an solid eye on CM, wastage percentage thus the factory overhead cost. While our neighboring countries are improving tremendously our workers' productivity is 40% less than them where average efficiency of factories is less than 45% and this is definitely a major obstacle to meet the deadline (Hosen, 2020).

Reason behind less productivity:

Inefficient planning: Poor strategic planning is one of the major reasons for less productivity. Strategic planning ensures highest optimization of available resources. In the past owners were not aware of planning and production went through wastage and production rate was low. But now we should really focus on planning to reduce wastage of valuable resources. Strategic planning aims at highest return from lowest investment. It increases overall efficiency. Efficient planning reduce risk, ensure proper coordination among management and workforce, increase organizing power and control, keep the business on right track.

Lack of automation: Automation is now demand of time. Because of Lack of automation, our overall production is decreasing while our neighboring counties are far ahead of us. Introducing Automation system in loading, unloading, cutting. Sewing and finishing can saves time and minimize the production cost which is necessary for us to meet the deadline. Fully automated process can increase production 7 to 10 percent which is unimaginable for non-automated system (Hosen, 2020).

Unskilled worker: Unskilled workers is a major problem for our RMG sector. After passing more than 20 years there is reasons to believe we have enough experienced worker in this sector however the situation is not like that. Till now we do not have that much skilled workers. Moreover, introducing semi-automated system in the sectors pushed many workers to edge since they do not have proper idea how to handle machineries. Many first generation garments workers who earned the experience through learning, lost their job when automation started. According to a survey of CPD female workers have less knowledge about the machineries (Ullah and Akhter, 2021). Not only workers, many new entrepreneurs, who are newcomer in this industry has less knowledge about management system of RMG sector. If top level or mid-level management fails to pull the job, the system will automatically fall apart.

Nonproductive time: Productivity of an apparel industry should be judged by the percentage of DHU (Defects per hundred units). To sustain this percentage should be 2% to 3%, however, this percentage is higher in factories (Hosen, 2020). Unskilled labor is main reason of it and it slows down the total production process by several folds.

Time and action plan: Our RMG sector do not have any time and action plan. Previously this sector was run by a set procedure. But the pandemic shows us for survival we need a proper time and action plan.

Migration and absence of workers: Absence of workers can slow down an entire production process by two or three folds. Workers absence is a common problem for this sector. According to owners there are some workers who have tendency to do absence in the work and it hampers the production line. Because of COVID-19 pandemic many families moved to village and some of them did not come back. This migration created shortage of experienced workers. Moreover to survive many factories go for downsizing. As a result production rate also decreased and now they are facing problem to meet the deadline.

Less training option: When automation was started as a part of Digital Bangladesh many workers lost their job and most of them are female and working in this sector for long time. According to a survey conducted by CPD, owners believe female workers are less educated and do not have the strength and capacity to operate modern machineries (Ullah and Akhter, 2021). According to a survey conducted by ACD the ratio of female workers decline to 65% and the reason behind this is adaption to new technology and machineries (New Age, 2021). But the situation was supposed to be different. It is true that many female worker do not have much education. But with proper training operating machineries is not difficult. The workers who have lost their job, many of them were experienced in this sector. With proper training they could be asset of the company which they failed to understand. Just because there is no training options many workers have lost their work and it is still going on and as a consequence of this RMG sector production ratio is not increasing as expected.

3.8. Target and Future Plan of RMG Sector

Bangladesh RMG sector has set a target to reach \$50 billion in export by 2021. With the slogan: “\$50 billion by 2021” Bangladesh started to achieve this ambition goal a few years ago. Wage competitiveness is one of our major strength. From 1995 to 2016 RMG sector grew by several folds and became

one of the strongest caterer of EU and American fashion brands (The Textile Magazine, 2019). The tremendous growth of the sector made us optimistic that by 2021 this ambitious target is achievable. But the after the outbreak of COVID-19, Bangladesh RMG sector got punched heavily and the export fall (Fig. 6).

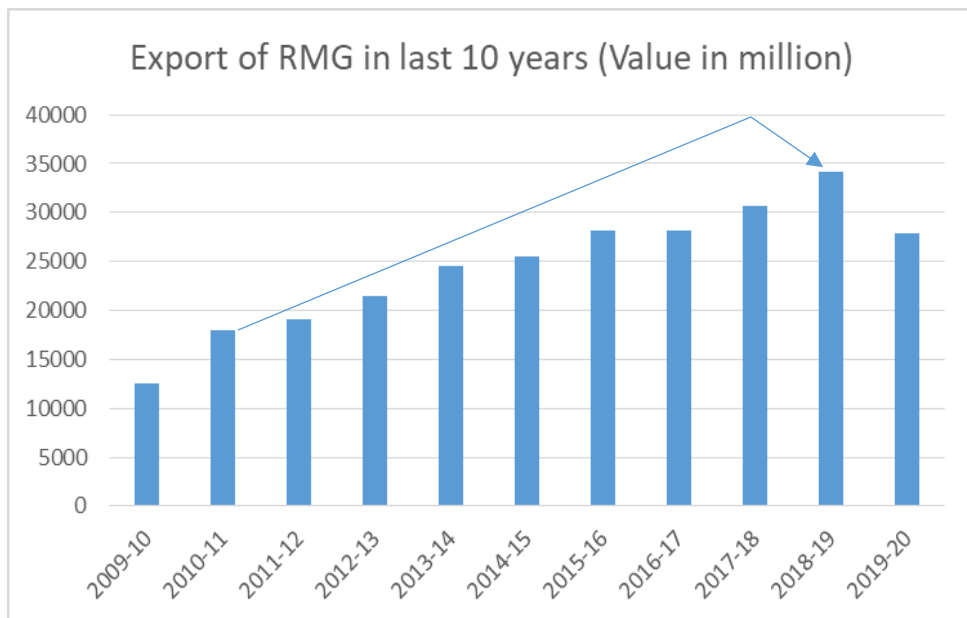


Fig. 6: Export of RMG in last decade (value in million) (Source: BGMEA)

In the first fiscal year 1983-84 export Of RMG sector was 31.57 million and it reach to \$34 billion in 2018-19 fiscal year. If that growth continued, reaching to \$50 billion target wouldn't be difficult by 2021. But that growth suddenly went downward in fiscal year 2019-20 because of COVID-19. 2020 was the worst nightmare for RMG industry. \$3.18 billion worth order cancellation and discount demand create an environment of anxiety and pushed 4.1 million people engaged with this sector towards uncertainty.

Observing the situation BGMEA president Rubana Huq said in a recent interview, “Western buyers have apparently shown their real faces amid the COVID-19 spread. Faced with economic uncertainty, they basically tried to shift the burden to us.” In the same interview she also mentioned, when the industry was going through an ordeal, deferment of shipment and payment,

order cancellation and endless meeting became the part of exporters' life in order to survive (Haque, 2021).

According to Rubana Huq, to survive right now RMG industry should focus on diversification. When our competitors are now focusing on man-made fiber based textile, we are still stuck on cotton based production. Diversification is challenging but it is time to accept the challenge.

The COVID-19 pandemic disrupted the world supply chain and change the scenario of business. Because of pandemic, in the United States \$100 billion retail spending disappeared in March 2020 while apparel retailers were notified that they should expect 75% decrease or \$17 billion loss in April 2020 then April 2019. Following the demand drop and order cancelation, the RMG sector of Bangladesh started to shrink. By the end of May garments workers had lost almost 30% of their wages, estimated \$502 million total. During that time lifestyle of garments workers changed significantly. 77% of interviewed workers said it was difficult to arrange food for all while 69% said they ate less protein during that time (Mullins, 2021).

In a report of World Bank "Gearing up for the Future of Manufacturing in Bangladesh" they have suggested some steps to re bounce from the pandemic and boost up the production. Their suggested steps are - (i) capabilities of managers, (ii) international connection, (iii) technological adaption (The World Bank, 2021).

The government stimulus package helped the RMG sector at the initial state of COVID-19, however, many small local firms did not get any help from the package. Observing the current situation, BGMEA president believes, a fresh wage support package for four months would be very helpful for the industry (Haque, 2021).

3.9. Steps Taken by RMG Sector

In this uncertain situation RMG sectors has taken some steps to save their business as well as to protect their workers. Depending on the production type and number of workers there are some differences but in this critical situation the entire industry is united with a common goal and that is "survive".

Observing the world wide situation garments industry is now more careful about information a communication. In this critical moment delayed information can be proved deadly for the industry. So export oriented garments and local garments are trying to reduce communication gap with buyers and suppliers.

To survive this pandemic proper time and action plan is mandatory. Time frame and action plan ensure proper utilization of time and helps to complete the order within a specific time. Action plan with time frame is kind of chalk out the plan by dividing the time and complete each part within that certain time.

Materials are the main part of to run the supply chain smoothly. Without proper material the production line will stop and the chain will fall. In this pandemic when everything is uncertain it is important to focus on material delivery and keep an eye on the inventory so that order for raw material can be placed in time.

The COVID-19 is contagious diseases that transmitted through direct contact with respiratory droplet (coughing, sneezing). Individual can be infected by the corona virus by touching surface contaminated with this and then touching nose, mouth, eyes etc. to protect the workers from this infection garments owners arranged thermal scanner, disinfectant sprays at the entry point, hand sanitizer etc. after all these if they find any symptoms of corona infection in any of workers they isolate them immediately and then take further action.

Many garments take special care of workers' mental health. In the pandemic because of worker migration and downsizing, existing workers are being forced to extra work. It is pressurizing them. Moreover financial crisis, tension of losing job can make their mental situation vulnerable. Managements of many garments are trying their best to motivate them to fight with the situation.

Since the lockdown started transport problem has become one of the major problems for garments sector. Arranging private transport for workers is not possible for maximum garments. As a result, workers have to walk a long way to come to the factory, however, before the lockdown garments owners urged to government to keep this sector out of lockdown. As this sector contribution in our export earning is highest government keep this sector out of shutdown, however, it seems, unavailability of transport is the biggest problem. To avoid problems some garments have issued special authorization letter so that product delivery or supply can be done without any hassle although workers still have to fight on the way to factories.

4. Conclusions

It is true RMG sector of Bangladesh is the key of our economy. In 1971 our economical journey started from zero and now we are country of middle

income. The constantly increasing GDP is the sign of our unbelievable progress that we made in the past 50 years and the majority of credit goes to RMG sector.

The RMG sector comes to this point after many ups and down. The biggest disaster that we faced in the last decade was Rana Plaza incident. As the consequence of this heartbreaking accident Bangladesh lost the GSP facility. It was assumed that after that Bangladesh would go through a tough time in the competitive market but fortunately we survived and came back in business by fulfilling all the criteria our buyers asked for. “Green factories” term came in Bangladesh after collapsed Rana Plaza took many lives left behind a lot more injured and crippled. Back then Bangladesh was forced to rebuild the infrastructure and then to attract buyers we offered very low price and gradually we hold back and now we are the second largest apparel industry in the world right after China.

After Bangladeshi garments started to operate “Green Factories” theme some factors changed related to safety and security of workers, however, many things did not change as expected yet. According to BGMEA, Bangladesh is the home of highest number of green factories. Right now, we have 144 LEED green garments factories and 500 more are on way of getting certification and 9 out of 10 world’s top green garments factories are situated in this country and 39 out of world’s top 100 green industrial projects are in Bangladesh, however, research suggested that we never got proper acknowledgement from international buyers. Even our products do not even get the “green price” that we deserve.

The RMG sector is the perfect example of supply chain and every step has its own supply chain. Although we are in sector for few decades now RMG sector never understood the importance of supply chain. Previously our RMG sector run on a set procedure but he COVID-19 pandemic made it clear that to survive we need a proper supply chain and management system. Supply chain consist of several key factors like raw materials, suppliers, distributors, manufacturer’s and buyers, where customs, port, bank and other organizations such as EPB, BGMEA and BKMEA play the role of supporter. For the sustainable growth of industry a country needs a strong, feasible and flexible supply chain which focus on inventory, decreasing wastage, maximizing production and reducing lead time.

Our 37 years’ experience gives the expertise and minimum wage gives us a competitive edge, however, in case of lead time we are far behind then our neighboring countries. However, due to COVID-19 pandemic e commerce

dependency is increasing and with growing popularity of ecommerce lead time is decreasing day by day. If Bangladesh cannot cope up with the situation we will market very soon. Bangladesh is largely dependent on China and India for raw materials. While our close competitors arrange everything from their own sources and complete the order we wait for the raw material to come in our hand and then start the production. After passing almost 4 decades in this sector still we have many problem that is forcing us to take longer time. Lack of automation, running business without proper strategic plan, inadequate training opportunities, not utilizing experiences workers properly are the main hindrance on way to catch up the lead time. But this epidemic made one thing very clear that now we should focus on in-house sourcing of raw material. We need to reduce dependency on other countries for materials like cotton, fabric, artificial thread and produce best quality raw material to stay in the competition. Right now, Bangladesh is producing knit fabrics and fulfilling the largest part of the demand, however, in case of woven fabrics and other material we are behind then China, India, Vietnam and Cambodia. Undoubtedly achieve this goal overnight is not possible but we have to strive for success.

The RMG sector of Bangladesh involve women in the mainstream of the economy. Women represent half of our total population and their participation in economy change their socio economic condition and contributed a lot to change the economic graph of the country. In recent years the ratio of male female in the RMG sector was almost 20%, 80%. But now the situation is not like that. In last few years many female workers lost their job for several reasons. Declining Percentage of female workers, who have carried the country's largest export sector for four decade proves the unfriendly behavior of factory owners, management as well as male colleagues and the insecurity outside the working places. Many owners consider that women are not capable of running machineries. Apart from technical adaption other reasons of behind this are sexual harassment, marital issues, maternity leave problem and less education which can be solved easily. But instead of training them they terminate female workers.

Whenever any problem come, worker suffers the most and all big accidents that happened in this industry, claimed the life of workers. Unfortunately the responsible behind these accidents never got the punishment. When COVID-19 hit the economy, many workers were terminated even after government urged not to terminate workers.

Just a few years ago BGMEA had announced the target to reach \$50 billion export earnings by 2021. The target was ambitious but the way our RMG industry was growing it wouldn't be difficult to reach the goal if COVID-19 didn't strike the economy on 2020. For a long time, we are catering EU and American brand but in the time pandemic many of them cancelled orders, hold the payment and came back with discount demand. To handle the situation BGMEA worked day and night and now based on some fresh order RMG sector is turning back from ashes. However, the pandemic showed us that over dependency on two market for export can be deadly in bad situation. Therefore, it is time to focus on developing regional business relationship to make the sector more secure, strong and sustainable.

References

- Ali, M., Rahman, S.M., Frederico. G. F. (2021): Capability components of supply chain resilience for readymade garments (RMG) sector in Bangladesh during COVID-19. *Modern Supply Chain Research and Application* 3(2), 127-144.
- Asgari, B., and Hoque, M. A. (2013): Lead-time management in Bangladesh garments industry: A system dynamics exploration. *Asia Pacific Business and Economics Perspective* 1(2), 83-97.
- Basak, A., Seddiqe, M.M.I.S., Islam, M.R., Akanda, M.O.R. (2014): Supply chain management in garments industry. *Global Journal of Management and Business Research* 14 (11), 23-25.
- Dutta, R. (2020): COVID-19: An impending threat for Bangladesh RMG- February 2020.
- DW, (2020): COVID: Bangladesh's textile industry hit hard by pandemic- A international media outlet Deutsche Welle (DW): 2nd February 2021- Online edition.
- Hosen, M.N. (2020): Barriers in productivity and efficiency growth in Bangladesh's apparel industry- A popular business magazine in Bangladesh "Textile Today": 6th July, 2020- online edition.
- Haque, M. (2021): Bangladesh RMG units see true faces of buyers in pandemic: Rubana- Bangladeshi English-language daily newspaper "New Age": New Age Interview- 2nd January, 2021-online edition.

- Hasan, M. (2017): Supply Chain Management in Readymade Garments Industry, Bangladesh. *Asian Business Review* 7 (3), 103-110.
- Hossain, S. (2021): Global price hike pummels RMG backward linkage - Dhaka Tribune. 16th June, 2021. Online edition.
- Hossain, T. (2020): Cotton and products annual- United States Department of Agriculture (USDA). 5th May, 2020.
- Hossain, M. F., George, A., Talukder, Alam M. K. and Mohib, A. A. (2014a): Impact of implementing TQM in RMG manufacturing units in Bangladesh. *The AIUB Journal of Business and Economics* 11(1), 29-52.
- Hossain, M. F. and George, A. (2014b): Labor unrest in Ashulia industrial hub. *The AIUB Journal of Business and Economics* 11(1), 129-147.
- Jebin, I. and Hossain, M. F. (2020). Increasing production cost and its effect on RMG sector of Bangladesh. *AIUB Journal of Business and Economics* 17 (2), 36-68.
- Khan, A. (2021): An Empirical Study on Lead Time of Readymade Garments in Bangladesh. *Advance Research in Textile Engineering* 6(1), 1-4.
- Mia, S., and Akter, M (2019): Ready-Made Garments Sector of Bangladesh: It's Growth Contribution and Challenges. *Economics World Journal* 7(1), 17-26.
- Mirdha, R. U. (2018): Shorter lead time key to RMG export growth- The Daily Star- 8th November, 2018- Online edition.
- Mullins, N. R. (2021): How the Pandemic is Affecting Bangladesh's Garment Workers- Institute for Human Rights and Business: 28 April, 2021.
- New Age (2021): Ratio of female RMG workers falls to 59pc: survey- Bangladeshi English-language daily newspaper "New Age". 2nd March, 2021- Online edition.
- New Age (2020): RMG value addition drops by 3.31pts in July-Sept: A Popular English-language daily newspaper: 4th January 2020- online edition.
- Nizam, M.E.H., Islam M.T., Uddin M.N., Khan A.N., (2021). Impact of COVID-19 in readymade garments industries of Bangladesh. *Paripex-Indian Journal of Research* 10(3), 87-91.
- Nuruzzama, and Haque, A. (2009): Lead Time Management in the Garment Sector of Bangladesh: An Avenues for Survival and Growth. *European Journal of Scientific Research* 33(4), 617-629.

Ovi, I. H., (2021): 'It is time to look inwards'- Dhaka Tribune. 3 January, 2021.

Purba, K.F.H. (2021): Amid a skyrocketing international cotton market, a ray of hope in Bandarban- Textile Today. 3 March, 2021- online edition.

Rayhan, J. (2021): RMG accessory makers take a hit as raw material prices skyrocket- The Business Standard. 9th June, 2021. Online edition.

Textile Today (2020): RMG export orders back with short lead-time- A popular business magazine in Bangladesh "Textile Today": 2nd September 2020- online edition.

Textile Today (2020): RMG export earnings contribution to national export declined in 2020- A popular business magazine in Bangladesh "Textile Today": 7th January 2021- online edition.

The Loadstar (2020): Bangladesh's key garments sector hits a wall with shortage of raw material- The Loadstar, 3rd March, 2020

The Textile Magazine (2021): BANGLADESH targets \$50 billion RMG exports by 2021- the Textile magazine. 3rd April, 2019. - Online Edition.

The World Bank (2021): Bangladesh: Improving Productivity and Technology Adoption Key to a Globally Competitive Manufacturing Sector- The World Bank Press release- 24 June 2021.

Ullah, M.S., Akhter, R. (2021): Automation of the Readymade Garment Sector in Bangladesh: Who is paying the price? - Fem Lab. Co. 14th May 2021.

UNDP Bangladesh (2020): COVID-19: a high-stakes test for the RMG sector- UNDP Bangladesh, April 30, 2020.