Is Bangladesh Competent Enough to Confront Future Challenges? An Empirical Analysis of Competitiveness of Bangladesh's Apparel Sector Compared to Major Competitors

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ABSTRACT

Purpose: This study investigates the comparative advantage of Ready-made Garment (RMG) industry of Bangladesh compared to other major Asian competitors in the global market such as China, Vietnam, Cambodia, India, Sri Lanka and Turkey from 2013 to 2017.

Methodology: This study applies Balassa's Index of Revealed Comparative Advantage (RCA) with data from World Trade Organization (WTO) database during the stated period of 2013 to 2017 to calculate the RCA index of competing economies in global clothing export. Additionally, correlation-coefficient of the clothing export of competing economies for the study period has been calculated to analyze the export pattern. Moreover, the consistency and volatility of comparative advantage measured by standard deviation and coefficient of variance of the RCA have been analyzed.

Findings: All seven competing economies display some degree of comparative advantage, the strongest display of RCA score comes from Bangladesh, followed by Cambodia. The findings exhibited that Bangladesh's export pattern is highly undiversified to single industry compared to other Asian economies. It is also depicted that Bangladesh has been unsuccessful in grabbing the growth in global clothing export compared to Vietnam. There has been a strong negative correlation that exists between the clothing export of Bangladesh and China whereas strong correlation persists between Bangladesh and Vietnam. It has been also identified that although Bangladesh has the highest RCA among other considered economies, the volatility remains on the higher side.

Limitations: This research study has only focused on five countries trade variables. Time period of analysis of the data could also be extended.

Practical Implications: The outcomes of the analysis would be helpful in formulating export policies and identifying factors of competitiveness for selecting strategic business and industrial policy for future growth.

Originality/Value: This paper is one of the limited attempts to perform a structured investigation of competitiveness of Bangladesh and its Major Asian Competitor on clothing (RMG) trade to international markets as very limited previous studies have been conducted in this area.

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1. Introduction

Export of RMG has steadily become the main export product from Bangladesh since late 1980s. As of fiscal year, 2018-2019, export of RMG comprises 84.21% of the country's total export reaching an all-time record of $40.53 billion with 11.49 percent growth as compared to the previous fiscal year (see table 1). This industry ranks in second place among the world's garment exporter in the world after China. Over the last two decades, RMG export has been hovering between 70% and 85% of its total export earnings. The recent economic up gradation of Bangladesh from least developed country to lower middle income country is highly contributed by this sector. Regardless of the major price reduction in global market, this development is attributed to political stability, geographic expansion of markets and Chinese industrial transformation from low to high capital-intensive industry, improvement in productivity, entrepreneur's resilience and improvement in workers and workplace safety standards and favorable policy supports from government.

Table 1. RMG Export vs. Total Export

Year	Total Export (Million USD)	RMG Export (Million USD)	RMG Contribution in Total Export (%)	Year	Total Export (Million USD)	RMG Export (Million USD)	RMG Contribution in Total Export (%)
1983-84	811	31.57	3.89	2003-04	7602.99	5686.09	74.79
1985-86	819.21	131.48	16.05	2005-06	10526.16	7900.8	75.06
1987-88	1231.2	433.92	35.24	2007-08	14110.8	10699.8	75.83
1989-90	1923.7	624.16	32.45	2009-10	16204.65	12496.72	77.12
1991-92	1993.9	1182.57	59.31	2011-12	24287.66	19089.69	78.6
1993-94	2533.9	1555.79	61.4	2012-13	27027.36	21515.73	79.61
1995-96	3882.42	2547.13	65.61	2013-14	30186.62	24491.88	81.13
1997-98	5161.2	3781.94	73.28	2014-15	31208.94	25491.40	81.68
1999-00	5752.2	4349.41	75.61	2015-16	34257.18	28094.16	82.01
2001-02	5986.09	4583.75	76.57	2016-17	34655.92	28149.84	81.23
2017-18	36668.17	30614.76	83.49	2018-19	40535.04	34133.27	84.21

Source. Authors' compilation from BGMEA Trade Statistics 2018

The RMG industry of Bangladesh has achieved a phenomenal growth after the phase out of the MFA in 2004 while the several economists, researchers predicted that quota dependent nations like Bangladesh will lose its competitive market position in the clothing export due to the severe open market competition with large player such as China and India. In addition to that micro level contributors such as infrastructure, poor labor productivity, and insufficient backward industry also contributed to the negative predictions from the global industry analysis regarding the RMG sector of Bangladesh (Chowdhury, Ali, & Rahman, 2006). For some countries in African region those predictions were justified (Morris & Barnes, 2009). On the other hand, several Asian nations, specifically Bangladesh, Vietnam and Cambodia, have gained astonishing development by raising their proportion of the world's exports of apparel products in the post-MFA period (Yunus & Yamagata, 2012).

With the favor of the decade long quota restraint enforced by the USA in the early stages along with the continuing duty-free access provided by the European Union under its Generalized System of Preference (GSP) system from the mid-1990s, the textile and readymade garment (RMG) sector have become the largest manufacturing industry as well the top export earner of the country, contributing 10 percent of total GDP (Adhikari & Yamamoto, 2008; Hashim, 2005) and formed a noteworthy employment source of 4 million employees *(see table 2)*, of which female make up almost 90 percent (Dey & Basak, 2017).

Table 2. RMG Workers and Factory Growth Scenario

Year	No of Workers (In Millions)	Number of Garment Factories	Year	No of Workers (In Millions)	Number of Garment Factories
1983-84	0.04	134	2003-04	2	3957
1985-86	0.2	594	2005-06	2.2	4220
1987-88	0.31	685	2007-08	2.8	4743
1989-90	0.34	759	2009-10	3.6	5063
1991-92	0.58	1163	2011-12	4	5400
1993-94	0.83	1839	2012-13	4	5876
1995-96	1.29	2353	2013-14	4	4222
1997-98	1.5	2726	2014-15	4	4296
1999-00	1.6	3200	2015-16	4	4328
2001-02	1.8	3618	2016-17	4	4482
2017-18	4	4621	2018-19	4.5	4621

Source. Quarterly Review on RMG: FY17 by Bangladesh Bank

The total value addition of the RMG sector has also increased significantly as the industry facilitates other subsequent backward industries to grow with it apart from the supply of cheap labor only. Whereas at the beginning, the sector's value addition was around 35% (Habib, 2016) it became almost 75% in 2017 (Akhtaruzzaman, 2019) *(see table 3)*.

Table 3. Trends of Value Addition from RMG Export in Context of Raw Materials Import (Million$)

Year	Total Export	RMG Export	Back to Back Raw Material Import	Back to Back Raw Materials Import as Percentage of Total RMG Export	Value Addition (% Share)
FY 13	27027.36	21515.73	8226.97	38.24	61.76
FY 14	30176.80	24471.88	9663.53	39.49	60.51
FY 15	31208.94	25491.40	9591.72	37.63	62.37
FY 16	34241.82	28094.16	10210.63	36.34	63.66
FY 17	34655.92	28149.89	10760.12	38.22	61.78
FY 18	36668.17	30614.76	11957.80	39.06	60.94
FY 19	40535.04	34133.27	12178.31	35.68	64.32

Source. Quarterly Review on RMG: June 2019 by Bangladesh Bank

Bangladesh's RMG export in the global context has increased significantly during the last thirty years. Bangladesh has now secured the position of the world's second largest exporter after China but the difference between the first and second is still significant. In 2017, Bangladesh holds 6.19% of the global apparel export *(see table 4)*. China remained the chief clothing supplier worldwide, even though its portion decreased to 34.9%. The worth of exported garments items from China in the preceding year was $158 billion. Vietnam came in third with its 5.9% market share. It exported $27 billion worth of RMG merchandise in 2017. Next-door India, with its apparel exports of $18 billion in 2017, positioned fourth followed by Turkey with a 3.3% of the global market share (WTO, 2018b). Improvements in infrastructural facilities such as roads and highways, airport and seaport in Chittagong for rapid transfer of goods and dropping the cost of doing business, government tax and cash incentive enable the country to continue its competitive edge over Vietnam, Turkey, India and the rest.

Despite the strong presence of the RMG sector in global and local economy of Bangladesh, several future challenges are awaiting which are needed to be taken seriously. There is a modest chance for satisfaction due to competitive characteristics and growing trends in the global apparel market.

Table 4. Textile & Apparel Export Share by Major Countries

Country	2012	2013	2014	2015	2016	2017
Bangladesh	4.66%	5.19%	5.08%	5.83%	6.39%	6.19%
Cambodia	0.97%	1.07%	1.10%	1.30%	1.48%	1.53%
China	38.42%	39.19%	38.70%	38.31%	35.52%	33.60%
India	3.35%	3.43%	3.71%	4.03%	4.06%	3.95%
Indonesia	1.81%	1.70%	1.59%	1.67%	1.67%	1.74%
Myanmar	0.21%	0.26%	0.21%	0.21%	0.35%	0.52%
Pakistan	1.01%	1.00%	1.03%	1.10%	1.14%	1.16%
Turkey	3.44%	3.40%	3.44%	3.32%	3.35%	3.20%
Vietnam	3.47%	3.79%	4.17%	4.81%	5.13%	5.89%

Source. Authors' Calculation on the basis of WTO Statistical Database

As far as the South East Asian regional competitors are concerned, China has been at the top position in global apparel market from beginning and still holding the first position though its market share has been declining considerably. Apart from Bangladesh, other competitors are also trying to grab this market share. World Bank study titled "Stitches to Riches?" predicts that an increment of 10 percent in Chinese apparels price would result in 13.54 percent increase in Bangladesh's export of clothing to USA. However, the equal increase in Chinese export price in USA would raise Vietnam's export by almost 38 percent and 51 percent of Cambodia's export to USA (WorldBank, 2016). This analysis uncovers that Bangladesh is less favorable destination for apparel sourcing for US buyers; moreover it also suggests that strong substitutes of Bangladeshi apparels exist. Additionally, Vietnam has signed a radical free trade agreement with European Union which allows Vietnam to achieve duty relief on 99 percent of products traded between Vietnam and EU (Khanh Vu, 2019), whereas Duty-free privilege of Bangladesh apparel items to the EU region will finish in 2027 as a result of the economic uplift of the country as a developing nation (Mirdha, 2019). This will create a key challenge to the RMG sector in near future. Moreover, Vietnam has got more advantages in terms of lesser lead time, efficient and cheaper logistics supports, large shipping port and more efficiency in attracting foreign direct investment especially from China.

Even though Bangladesh has got large labor force with cheap wage rates (JETRO, 2017) (see figure 1) which has been the key competitive factor for Bangladeshi garments industry, the productivity of the workers has been on the lower side compared to close rivals. According to the Asian productivity organization data book 2018 (APO, 2018),

per worker's labor productivity as well as per hour labor productivity of Bangladesh is lowest among all (See table 5) other major competitors except Cambodia. Another issue concerned with the productivity and value addition is the skill level of the workers. Although apparel manufacturing is considered to be a low skill-oriented manufacturing process, skilled labor in managerial positions increases the competency and productivity of the factory, which will result in lower lead time. According to the World Economic Forum's (WEF) Human Capital Index measurement (see figure 2), Vietnam's human capital index which measures the skill level of labor is more than that of China while Bangladesh and India stay far behind (WEF, 2017).
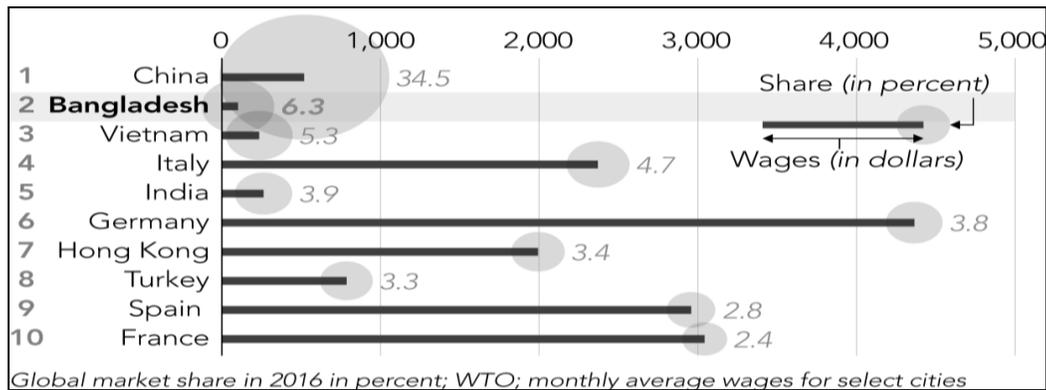

Figure 1. Wages of World Clothing Exporters. Source: (JETRO, 2017)

It has been a fact that Bangladesh's RMG sector is critically facing shortage of skilled manpower. Almost 80 percent of the Bangladesh's apparel export is concentrated in five basic products such as trousers, t-shirts, sweaters, shirts and jackets (BGMEA, 2019) (see table 6). With the shortage of sufficient skilled labor force, Bangladesh will find it difficult to move towards the production of more high value apparel and textile products which will create a greater threat from competitors like Vietnam, Myanmar and India in terms of both pricing and quality.
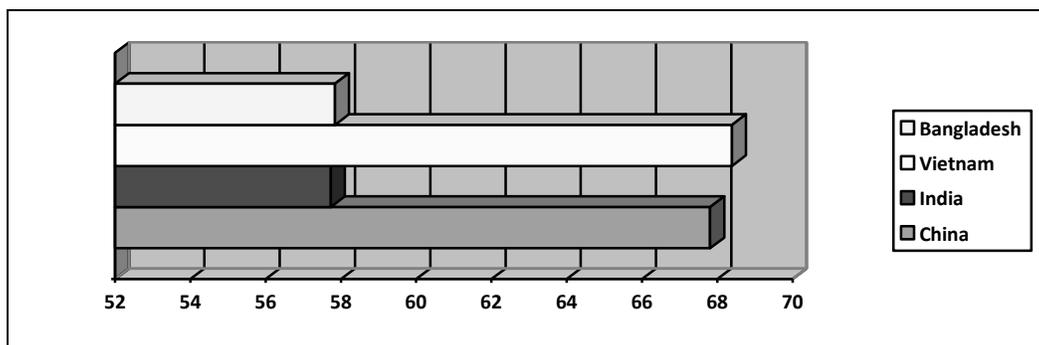

Figure 2. Human Capital Index. Source: World Economic Forum's Human Capital Index 2017

Table 5. Productivity of Labor in Competing Economies

Productivity/ Country	China	India	Bangladesh	Myanmar	Vietnam	Cambodia	South Asian region
Per workers Labor Productivity Level	24.0	16.0	8.6	10.6	10.2	6.2	16.0
Per-Hour Labor Productivity Level	11.1	7.5	3.4	4.1	4.7	2.5	7.4

Source. APO Productivity Organization Data book 2018.
Unit. Thousands of US dollars (as of 2016).

Table 6. Main Apparel Export Products from BD (Million $)

Year	Shirts	Trousers	Jackets	T-shirts	Sweaters	Total Main Products	Total Export of RMG	Percentage of Major Products
2005-06	1056.69	2165.25	389.52	1781.51	1044.01	6436.98	7900.8	81.47%
2007-08	915.6	2512.74	1181.52	2765.56	1474.09	8849.51	10699.8	82.71%
2009-10	993.41	3035.35	1350.43	3145.52	1795.39	10320.1	12496.72	82.58%
2011-12	1733.54	4686.39	2231.16	4713.11	2340.34	15704.54	19089.69	82.27%
2013-14	2173.73	5690.78	2973.16	5863.81	2932.94	19634.42	24491.88	80.17%
2014-15	2271.43	5697.83	3183.17	6064.13	2829.16	20045.72	24583.96	81.54%
2015-16	2317.09	6319	3774.08	6118.53	3182.47	21711.17	26602.7	81.61%
2016-17	2108.38	6026.69	3546.88	5861.98	3361.53	20905.46	28668.29	72.92%
2017-18	2063.57	6389.38	3978.47	6292.25	3674.7	22398.37	29212.93	76.67%
2018-19	2324.85	6939.61	4384.81	7011.26	4255.91	24916.44	32926.88	75.67%

Source. BGMEA Trade Statistics 2019

As far as the diversification is concerned, market diversification is much as important as product diversification. Bangladesh's export of RMG is highly concentrated to EU and USA market (see figure 3), which is very uncharacteristic compared to other competing nations. Such as China's export share to these two regions only comprises 49 percent of the total export.
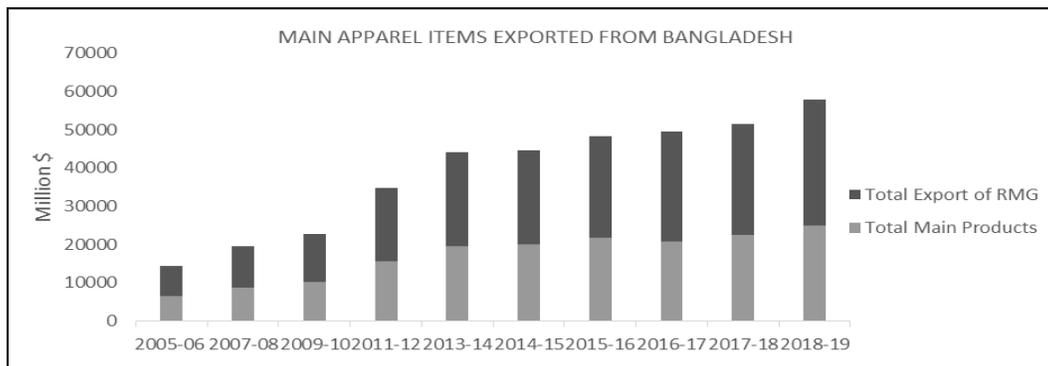

Figure 3. Major Export Items Share in Total Export. Source: BGMEA Trade Statistics 2019

Even though Bangladesh has achieved significant growth of 10% and 11.5 % on apparel export in these two markets, the growth rate of the non-traditional market achieved 26.71% of growth in FY2018 (see table 7 and figure 4). Bangladesh needs to move strategically as well as analyze the trend of macro drivers to strengthen their competitive position in global apparel market.

Table 7. Regional Export Share of RMG (2004-05 to 2017-18)

Region	Total	%
European Union	138751.45	60.27%
USA	54004.15	23.46%
Canada	9486.54	4.12%
Total EU and North America	202242.14	87.85
Non-Traditional	27965.29	12.15%
Total	230207.43	100.00%

Source. Authors' Calculation from BGMEA Trade Data (BGMEA, 2018)

As per the recent report of the global research firm McKinsey & Company, by 2022, 76% of the Chinese population would be middle class who will be a major source of consumption thereby potential market for Bangladesh Apparel, therefore Bangladesh should be more focused on the nontraditional market such as Japan, China and other high growth markets. Regional economic integration through free trade agreement will surely support the cause of increasing competitiveness. Bangladesh's closest competitor in apparel market Vietnam has FTA's with around 20 countries whereas Bangladesh has none which significantly increase the competitiveness of Vietnam in global market competition.
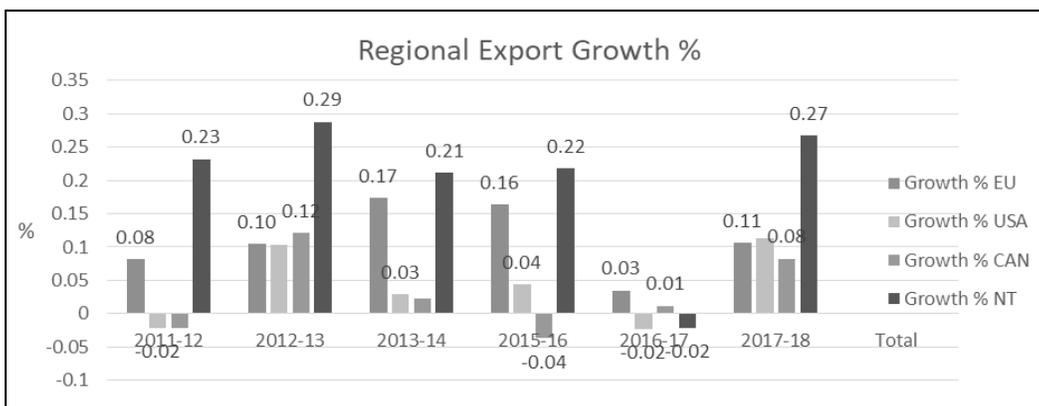

Figure 4. Export Growth (Region Wise). Source: Authors' Calculation

There are several other factors which could impact the competitiveness of Bangladesh's RMG export to its competitors. Such as the currency exchange rate taka against US dollar. Strong domestic currency will negatively impact the country's export. Over the last five years, currency value of the Bangladesh's apparel competitors such as India has depreciated against US Dollar by 32 percent, Turkey by 102 percent and Pakistan by 15 percent, whereas Bangladesh's currency has appreciated against USD by 3.58 percent which surely decrease the global market competitiveness of Bangladesh (Sattar & Ahmed, 2017).

Another factor is the efficient and uninterrupted supply of energy at reasonable and competitive price. Bangladesh has been investing aggressively in energy sector to facilitate the industrial expansion. As the figure exhibits (see figure 5), in terms of cost, Vietnam provides lowest priced gas compared to other garments manufacturing countries in Asian region. Bangladesh gas price is higher than Vietnam as well as India. However, the primary energy for RMG is electricity where Bangladesh is ahead of Vietnam in providing cheaper electricity due to the huge subsidiary from the government in electricity generation (TheGlobalEconomy, 2019). However, both in Bangladesh and Vietnam the energy costs are cheaper than China which makes them favorable sourcing hub after China.
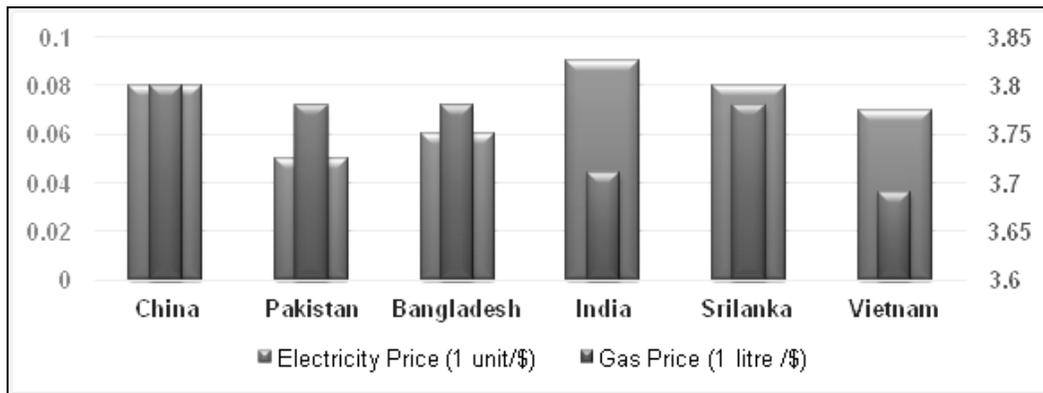

Figure 5. Energy Price Comparison Statistics. Source: The Global Economy 2019

According to the ease of doing business (index published by World Bank) latest annual rating (see figure 6), Bangladesh is noticeably falling behind than other Asian countries. The position of Bangladesh is 176th in 2018 among other 190 economies in the world. Poor infrastructure, energy shortage, political instability, corruption, are mainly accountable for the low score of Bangladesh in this index observed by the global investors. However, ranking wise slight improvement has been observed to 176 in 2018 from 177 in 2017 (WorldBank, 2018). Bangladesh's closest competitor Vietnam ranked 69th whereas India ranked 77th and China's position is 46th. According to this index

Vietnam is clearly a better choice compared to Bangladesh for further business investment. The foreign direct investments (FDI) flow in Vietnam also indicating that international investors are favoring Vietnam more than Bangladesh as their future investment. Whereas, the FDI flow in Bangladesh has fallen to 1.58 billion USD in 2018 (1.7 Billion in 2017), Vietnam achieved a significant rise to 14.22 Billion FDI in 2018 (11.96 Billion in 2017) (TradingEconomics, 2019).
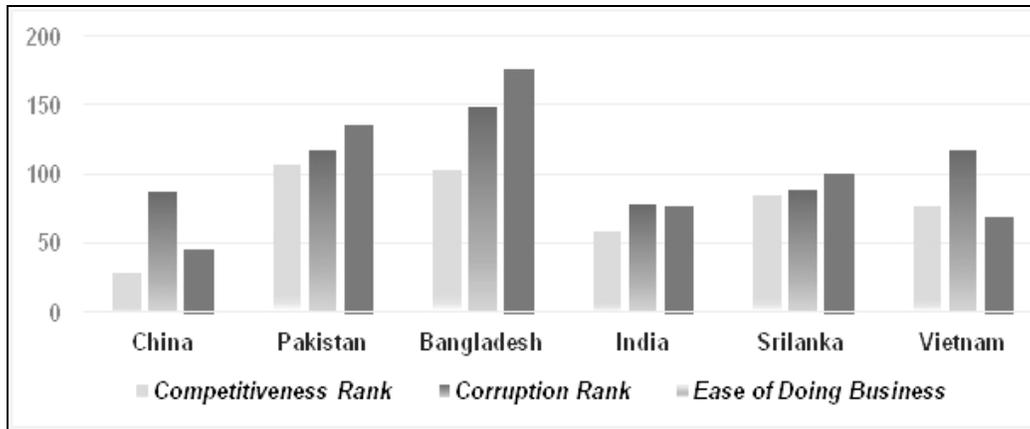

Figure 6. Competitiveness Scenario of Major Asian Competitor. Source: The Global Economy 2019

Lead time is another key feature of competitiveness as the RMG industry is transforming in to more fast fashion based. The average shipping time required from Bangladesh and Vietnam respectively to the major export destinations such as EU and USA are quite similar, however Vietnam can end up with a faster lead time as they are self-sufficient in textiles. On the other hand, Bangladesh is still largely reliant on imported cotton, yarn and fabrics (specially woven) which increases its lead time. The average lead time from Bangladesh to EU and USA ranges from 90 to 120 days, whereas, from Vietnam it is 50 to 60 days which clearly puts Vietnam ahead (Uddin, 2018).

In terms of the sustainability issue and green manufacturing which has been gaining a rapid concern from the major stockholders around the globe, Bangladesh has improved significantly after the massive image declining issue after the Rana Plaza incidence. Now it has got the largest numbers of green factories exactly to be 67 among the total 300 factories in the world (see figure 8) (Correspondent, 2018). The major benefits of green factories are less energy consumption, carbon emission and additionally the human factor such as the working atmosphere in the green factories are much favorable than that of non-green factories.
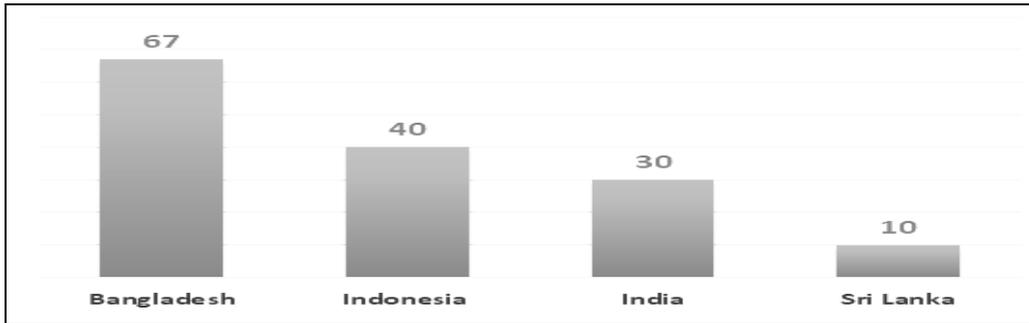
Figure 7. Green Factory Statistics. Source. (Mirdha, 2019)

In comparison to other Asian competitors, Bangladesh is way ahead in terms of environmental sustainability by building RMG factories. Indonesia is the second largest with 40 green factories followed by India with 30 and Sri Lanka with 10.

Since 2014, it can be seen that China's export of RMG is declining from US $187 billion to $158 billion in 2017. The WTO trade statistics reveals that the trend in recent years is that China is exporting less apparel and more textiles to the world. China's market shares in the world apparel market fell from 38.8% in 2014 to 34.9% in 2017 (Shen Lu, 2018). This decline in China's apparel market share has largely been attributed to higher cost of production (Mirdha, 2016) and protectionism measures taken by the major markets such as USA. This has practically opened up the opportunities for Bangladesh, Vietnam, India and other major players in Asian region to grab Chinese export share in major markets. A recent study made by McKinsey & Company, the world's most prestigious management consultancy firm on chief purchasing officers of world top retailing brands exhibits that the total apparel demand would be around $137 billion/year. According to the findings 49% of the CPO said that Bangladesh will remain a top sourcing spot in next five years (Mirdha, 2017) (see figure 8) whereas Ethiopia has come close to Bangladesh with 43% and Myanmar and Vietnam with their response of 37% and 35% respectively. India seems to be less attractive for CPO's with only 22% of response.
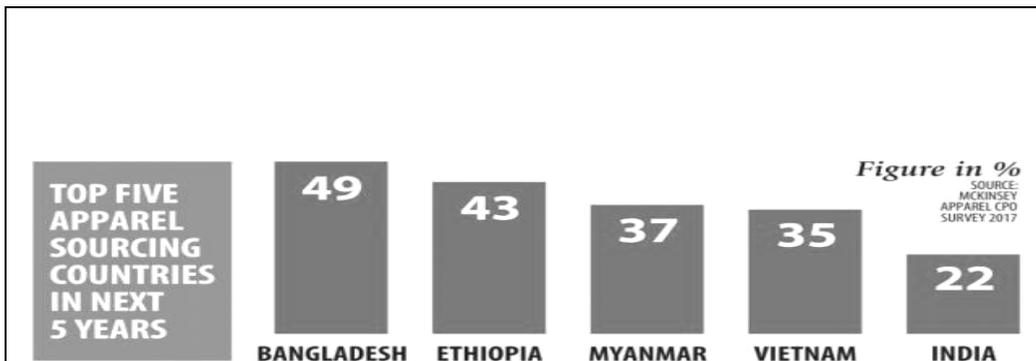

Figure 8. Top Five Apparel Sourcing Countries in next 5yrs. Source: (Mirdha, 2017)

In this current competitive scenario in RMG export market with huge future potential, the competitiveness of major players is needed to be analyzed to formulate better action plan. Already Bangladesh government has taken several strategic initiatives to make it competitive in global marketplace such as striving for foreign direct investment from major industrial nations by establishing special industry and country based economic zones. Huge investments have been also made in Infrastructural development and energy supply.

This study investigates the comparative advantage of Ready-Made Garment (RMG) industry of Bangladesh compared to Bangladesh's major competitors in the world market such as China, Vietnam, Cambodia, India, Sri Lanka and Turkey from 2013 to 2017. The purpose of this study is to assess the competitiveness of the RMG sector of Bangladesh in terms of other major apparel exporting nations while looking into other macro-economic variables propelling this sector. The Balassa's Index of Revealed Comparative Advantage (RCA) has been used to analyze the competitiveness of Bangladesh RMG sector in this paper. The findings of the study exhibit that, all seven competing economies have some degree of comparative advantage in the RMG industry. In the case of Bangladesh and Cambodia, both countries RCA are in double digits whereas the remaining five economies RCA vary from 1.82 to 4.87. This goes to show that both Bangladesh and Cambodia enjoy a higher relative comparative advantage over the other five competing economies. This also means that both Bangladesh and Cambodia are largely dependent on RMG industry for the sustainability of their economies. This paper is structured as follows: Part one of the paper deals with the introduction and background of the research agenda, the methodology is given in second part. Analysis and discussion of comparative advantage in trade specialization of competing economies has been discussed in section three followed by the conclusive remarks in part four.

2. Literature Review

David   Ricardo (1772–1823) was the first person most probably known to reveal the law of comparative advantage in 1816 (Ruffin, 2002)**.** According to his argument; a country has got a comparative advantage when its opportunity cost of generating a good or service is lesser than that of other countries. Opportunity cost measures a trade-off. A nation may not be the best at manufacturing its goods or services but its goods or services could have a lower opportunity cost for other nations to import. Another prominent model of comparative advantage is the Heckscher-Ohlin (H-O) model which was developed on the basis of Ricardo's comparative advantage theory, underlying two factors of production, labor and capital. The model basically argues that countries' export basket mainly contains products or services which use their plentiful and inexpensive elements of manufacturing, and import products and services that employ the countries'

insufficient or costly elements of production. So, a comparatively capital-intensive nation exports capital-oriented products and imports labor-oriented products, whereas a comparatively labor-oriented nation sells labor-oriented products and purchases capital-oriented products and services (Leamer, 1995).

One more widely defined theory of competitiveness is the 'product life cycle' theory presented by (Vernon, 1979) which uncover the limitations of the Heckscher-Ohlin model in explaining the practical trend of global trade. It states that at the first stage of the business cycle, competitive advantage is gained via the first mover/comer advantage by the development/innovation of the new product, service or process, but ultimately after the product becomes widely accessible and available internationally, manufacturing facility steadily shifts from original country of invention. In some instances, the inventor country imports the products from another country with higher comparative advantage than that of inventor (Charles, 2007). In advance stages, the economies of scale and learning curve effects may develop into the basis of competitiveness (Siggel, 2007). Comparative advantage has gained more strategic importance due to two important reasons, firstly it would help the country to decide which products or services to peruse for production and export by evaluating the core competitiveness and secondly, comparative advantage is not static and fixed, its basis and pattern is vibrant.

(B. Balassa, 1965) explored the possibility of relying on various theoretical explanations of international trade to determine patterns of comparative advantage which can be measured as revealed comparative advantage. Comparative advantages take place to be the outcome of number of factors in which some are measurable and others are not, some can easily be pinned down, others less so. One surprising fact is, whether more could not be gained if, instead of enunciating general principles and trying to apply these to explain actual trade flows, one took the rendered pattern of trade as a point of exit. Balassa contends that comparative advantage can be "revealed" through examination of real-world country/commodity trade patterns because actual exchange "reflects relative costs as well as differences in non-price factors." Indeed, many applied economists have attempted to approximate comparative advantage, using indicators derived from real world post-trade observations, called revealed comparative advantage (RCA) (Hillman, 1980; Marchese & De Simone, 1989; Yeats, 1985) have analyzed the properties of various RCA indexes purported to approximate actual comparative advantage. But, (Ballance, Forstner, & Murray, 1987)   found considerable detachment after examining the consistency of alternative RCA measures.

According to (B. A. Balassa, 1979), the position of the nation's comparative advantage and trade of commodities vary with the accretion of labor and capital. The most remarkable instance of this theoretical implication is Japan. It has been developing from the early '50s from a low-cost labor-based product manufacturer to high-level

capital and knowledge-based commodity producer and exporter in current time (Tabb, 1995). A sizeable or increasing market cut is the result of the profitable contest and the arrangement based on a market stake is the revealed comparative advantage (RCA) suggested by (B. Balassa, 1965).

On the basis of this procedure, a nation is considered to be specialized in trade of a particular commodity if its proportion in the total export of the country is larger than the countries total export share of the world's export of all commodities. As comparative advantage is supposed to vary over time, the anticipation of future export/import trend would call for an understanding of how comparative advantage differs throughout the time. Firms or specific industries holding new technologies predicted to have a comparative advantage through large market access which is also considered as the vibrant index of competitiveness (Siggel, 2007). (Ahmad & Kalim, 2013) calculated RCA of textile and clothing sectors of Pakistan where he found that Pakistan has a comparative advantage in the textile sector but low comparative advantage in the clothing sector.

In the developing phase of any economy, the fall of the contribution of the farming segment has been normally contributed by robust growth of the industrialization and service sector. The economic conversion has a straight impact on the production and export pattern of the economy. From the last 30 years, Asian major developing economies such as China, India, and Bangladesh have recognized a vibrant development of shifting comparative advantage. This has guided to the expansion of industrialization and service sector and trade of manufactured commodity, as well as a transformation in the composition of export goods (Das, 1998). Very few studies have been conducted to shed light on Bangladesh's export competitiveness such as (Mohan Kathuria, 2013) determined the export performance of clothing sector of India and Bangladesh. His study used the Harmonized System to analyze the competitive advantage of different clothing products from 1995 to 2003 for these two countries. He concluded that the comparative advantage in clothing products of India increased from 23 products to 25 products and comparative advantage of the same products of Bangladesh increased from 21 products to 29 products during this period. A study by (Haider, 2007) showed Bangladesh's competitiveness on a surface level where he uses export value, product price, market share and lead time as surface level indicators and then linkage expansion, factory environment, product/market composition and production and distribution time as deep level indicators. Another study by (Yunus & Yamagata, 2012) suggests Bangladesh's source of competitiveness in RMG lies in low wage rate, trade and export conducive government policies, availability of back-to-back letter of credit facilities and bonded warehouse facilities, as well as the role of BGMEA. The summary findings of several other prominent research works are showed below,

Table 8. Research Findings Summary of Prior Researches

Author	Countries Covered	Purpose of the Paper	Period Studied	Method	Result/Findings
(B. Balassa & Noland, 1989)	Japan and USA	To analyze the changing relative favorable position of Japan and the United States. Records of "uncovered" similar favorable position have been determined for 57 essential and 167 made item classifications.	1967 to 1983	Balassa's index	During 1967 to 1983, Japan has shifted from specialization in unskilled labor-intensive goods to human capital-intensive products while its comparative disadvantage increased in natural resource intensive products and ultimately Japans pattern of specialization is found to have changed dramatically. The United States maintained its specialization in both physical capital and human capital-intensive goods while increasing its comparative advantage in natural resource intensive products. Both countries increased their comparative advantage in high technology product.
(Maule, 1996)	Indonesia, Malaysia, the Philippines, Singapore and Thailand and Brunei.	To give some quantitative evaluation of the significance of AFTA for one of its signatories, Thailand.	1986 to 1992	Balassa's index	In spite of the fact that, intra-ASEAN exchange is described more by rivalry than by complementarily, it doesn't really preclude open doors for intra industry exchange creation as the complementarily of exchange that exists proposes that there are a few open doors for exchange creation as indicated by RCA lists.
(Westin, 1998)	RCA of Russia in EU market	To break down the advancement in Russian-European Union exchange in transition.	1992 to 1995	Balassa's index of Revealed Comparative Advantage (RCA)	Although Russian export since 1992 have expanded as far as assortment, the advancement in assembling export is frustrating, particularly with respect to light assembling and shopper merchandise. Furthermore, as anyone might expect Russia uncovers a similar favorable position in minerals and metals. The degree of intra-industry exchange among Russia and the EU stays low and there is no indication of an expansion, the contrary example from that of the Central European nations. There are no clear indications of changes to the structure of foreign exchange among Russia and the EU to some extent the result of the lack of restructuring in the Russian economy.
(Yilmaz & Ergun, 2003)	Turkey vs Bulgaria, Check Republic, Hungary, Poland, and Romania, EU-	To look at the worldwide aggressiveness of six applicant nations and to think about the structure of specialization in outside	1996 to 2002	RCA indexes, Including CEP – Comparative Export Performance TO – Trade	Turkey has a solid similar preferred position in RMIG, LIG and comparative disadvantage in EIRIG and in DIRIG. Elements of lists for Turkey uncovered the improvement in Turkey's exchange expansion and trade diversification. The

	15 market.	exchange with one another and the EU/15.		Overlap, ES – Export Specialization	constructive outcome of Custom Union on Turkish exchange was demonstrated by the increasing speed detected from records.
(Utkulu & Seymen, 2004)	Turkey vis-a-vis the EU/15	To explore the intensity of competitiveness and the example of exchange streams/exchange specialization from Turkey to the EU on sectoral levels.	1990 to 2003	Balassa RCA Vollrath RCA	Turkey has uncovered near favorable position and competitive advantage for seven of the 63 item product groups: closing and closing accessories; vegetables and fruit; sugar, honey; tobacco; oil seeds and oleaginous fruits; rubber manufactures; textile yarn, fabrics and related products. Initial two groups having most noteworthy RCA appeared to lose their degree of near favorable circumstances and competitive advantage in time. Authors propose that CU could cause such conduct as item "closing and accessories" losing its relative favorable position in EU, was picking up it on the world market.
(Addison-Smyth, 2005)	Ireland and the rest of the world	To evaluate the degree to which Ireland has a comparative advantage position in specific industries and how this has changed over the period.	1997 and 2002	Balassa indices & United Nations' Standard International Trade Classification.	Ireland has a strikingly high relative bit of comparative advantage in dominatingly foreign claimed divisions and mainly in the wide chemical compounds part. Conversely, the essentially indigenous areas appear to lose near preferred position due probably to declining aggressiveness combined with more extensive and ongoing structural changes within the economy.
(Batra & Khan, 2005)	India and China	To look at the structure of similar bit of comparative advantage appreciated by India and China in the global market, separately and in a comparative framework.	2000 to 2003	Balassa's (1965)	India and China have an aggressive relationship in organic chemicals, inorganic chemicals segments that makes an appeal for capital, skill, innovation & technology, and scale, the resource intensive category of non-metallic mineral manufactures and in manufactures of metals which is a low capital, skill, and scale and technology commodity category. Then again, a reciprocal relationship is obvious in labor and resource intensive sectors like textile yarn, fabrics, made-up articles and related products and articles of apparel and clothing accessories.
(Makochekanwa, 2011)	Botswana & rest of the world.	To exactly 'uncover' or decide Botswana's comparative advantage by utilizing universal exchange information to contrast exports in particular industries with the rest of the world.	1999 to 2004	Revealed comparative advantage (RCA) by Bella Balassa (1965).	Botswana has RCA in precious stones, diamonds, copper matte, and meat of bovine animals, among different items. The nation increased similar specialization in the accompanying items: sugar products; copper ores and concentrates, in which it previously had comparative disadvantage. On

					the descending side, the nation lost specialization in items, for example, coal gas and water gas.
(Ullah, 2012)	Bangladesh	To investigate the dynamics of comparative advantage and pinpoints potential export products.	1990 to 2007	The normalized revealed comparative advantage-NRCA & product mapping.	Bangladesh has similar preferred position in some primary and labor-intensive manufacturing products; aggressiveness of the essential items has declined while labor intensive products have turned out to be progressively focused; and there are some potential items that require arrangement support for reinforcing intensity to strengthen competitiveness.
(Ahmad & Kalim, 2013)	China, India, Bangladesh, Pakistan.	To uncovered revealed comparative advantage (RCA) of textile and clothing sector of Pakistan at HS-2digit level and SITC-3-digit level.	1995 to 2005	Revealed comparative advantage (RCA) Balassa index (1965) at Harmonized System HS 2-digits levels.	Pakistan has similar preferred position in textile sector and low near favorable position in clothing division. Further, it breaks down RCA of textile and clothing sector during the time of pre and post quota and infers that comparative advantage of Pakistan in textile and clothing sector has been declined during 2011-12.
(Ishchukova & Smutka, 2013)	Russia vis-à-vis EU, CIS, Africa, Asia & America	To break down specialization and the competitive performance of the Russian agricultural segment and to decide whether or not patterns of comparative advantage for Russia have experienced significant changes over the period 1998–2010.	1998 to 2010	Classical Balassa's index, Vollrath's index and Lafay index.	Russia has an incredible potential for the production of grain, basically because of the huge land territory. Cereals, particularly wheat, oil seeds and vegetable oils are considered as a deliberately significant component of Russian farming exports.
(Mohan Kathuria, 2013)	India and Bangladesh.	To investigate the comparative advantage of India and Bangladesh for the clothing segment in the world export trade.	1990 to 2008	Balassa's index of Revealed Comparative Advantage (RCA)	The quantity of items for which India delighted in the near favorable position expanded from 23 items to 25 items somewhere in the range of 1995 and 2003 and for Bangladesh, this number expanded from 21 items to 29 items somewhere in the range of 1995 and 2003. Clothing exports of India and Bangladesh are clustered based on comparative advantage at the HS 4-digit level for the years 1995 and 2003 and the comparative position is given based on a proportion of basic change in exports of India and Bangladesh.
(Bilas & Bošnjak, 2015)	Croatia vis-a-vis the EU/27 market	To investigate the connection between product exports and revealed comparative advantage (RCA) indicators of Croatian exports on the European Union (EU) market.	1995 to 2012	Balassa (1964), Granger causality test effects in time series.	A Croatian has positive and factually significant connection between RCA in export of crude materials barring fuel and level of product trade just as RCA in export of hardware and transport vehicles and level of product send out on the EU market.

(Raghuramapat runi, 2015)	BRICS countries (Brazil, Russia, India and China and South Africa)	To assess the power of exchange relations between the BRICS nations and further theorize the probability of product exchange among them regarding 14 particular areas.	1995 to 2012	Trade Intensity Index (TII) & Balassa's Index.	The BRICS nations are complimentary as opposed to competitive to one another in the different areas investigated and exhibit a more prominent capability of multilateral exchanging system among them which could accelerate the South-South exchange.
(Güneş & Tan, 2017)	Turkey and Russia	To gauge Balassa index for Turkey and Russia at a bilateral level and hence broadens the analytical framework to measure comparative advantage of both the nations at a worldwide level.	2007 to 2014	The Balassa index (1965)	The static RCA is demonstrative of the way that Turkey is more profitable than Russia at both bilateral and worldwide levels. In any case; an examination of dynamic RCA for the 14 normal areas uncovered that while Turkey has dynamic near preferred position for six divisions, Russia has dynamic similar bit of leeway for 11 segments. Though the way that Russia is more disadvantageous than Turkey in static terms, it has more parts falling under the rising star classification in dynamic terms.

Source. Authors Review of Prominent Articles (column 1)

3. Methodology

This research paper is built on the use of the Balassa's Revealed Comparative Advantage indices to determine the competitiveness of Bangladesh RMG against its six major competitors namely China, Vietnam, India, Cambodia, Sri Lanka and Turkey. The revealed comparative advantage is an index used in international economics for calculating the relative advantage or disadvantage of a certain country in a certain class of goods or services as evidenced by trade flows. It is based on the Ricardian comparative advantage concept which argues that countries should specialize in the production of goods in which they have a relative advantage over other countries in order to promote the benefits of international trade. The formula has been used to calculate the RCA of Bangladeshi apparel export compared to other competing nations is shown below:

$$RCA = (Xij / Xit) / (Xnj / Xnt) = (Xij / Xnj) / (Xit / Xnt) \qquad (1)$$

Where:

X - Exports,

i - Country,

j - Commodity (or industry),

t - Set of commodities (or industries) and

n -Set of countries.

RCA measures a country's exports of a commodity (or industry) relative to its total exports and to the corresponding exports of a set of countries, for instance Bangladesh.

Any country is said to have a comparative advantage in the commodity / industry if RCA >1. The yearly aggregated clothing/apparel trade data of the comparing economies has been collected from the UN Comtrade, an electronic database of the United Nations and from the database of the World Trade Organization (WTO). Additionally, Pearson Correlation Coefficient for the period of 2013 to 2017 has been calculated to analyze the association between the exports of competing economies along with the world export of apparels. More over the consistency and volatility of comparative advantage (measured by SD and CV) of the RCA of competing economies have been analyzed.

4. Findings and Analysis

Revealed comparative advantage of competing countries in clothing export has been exhibited in the following table and graph (see table 9 and Figure 9). From the table it is seen that the RCA figures for all seven economies are greater than 1. This means that all seven economies have some degree of comparative advantage in the RMG industry. In the case of Bangladesh and Cambodia, both countries' RCA are in double digits whereas the RCA of the remaining five economies vary from 1.82 to 4.87. This shows that both Bangladesh and Cambodia enjoy a higher relative comparative advantage over the other five competing economies. This also means that both Bangladesh and Cambodia are largely dependent on RMG industry for the sustainability of their economies. If the RMG industry of these two nations are adversely affected then the economy of these two nations are adversely affected as well. This also means that the remaining five economies are a lot more balanced in terms of their export portfolio. If the RMG industry of those five economies are adversely affected then they are less likely to be affected on the same scale as Bangladesh and Cambodia as their risks of being associated with the RMG industry are more spread out.

Table 9. RCA of Apparel Export of Major Competing Countries

Countries	Indices	2013	2014	2015	2016	2017
China	RCA	3.36	3.13	2.78	2.71	2.63
Bangladesh	RCA	33.76	31.72	29.78	29.35	30.63
Vietnam	RCA	5.43	5.26	4.90	4.65	4.87
India	RCA	2.06	2.17	2.49	2.46	2.33
Turkey	RCA	4.24	4.14	3.81	3.77	3.61
Indonesia	RCA	1.76	1.70	1.83	1.84	1.82
Cambodia	RCA	30.32	30.59	25.19	23.60	22.37

Source. Authors' Calculation

In has been clearly seen from the comparison that although Bangladesh and Cambodia have achieved double digit RCA compared to that of China, the total export share of these two countries are heavily depended on Apparel (see table 10). The alarming point to consider in here is that whereas other countries' share of textile in total

export has been gradually declining or being stable but in case of Bangladesh it has been lifting up. That means the export basket for Bangladesh is not well diversified which is a major risk factor.
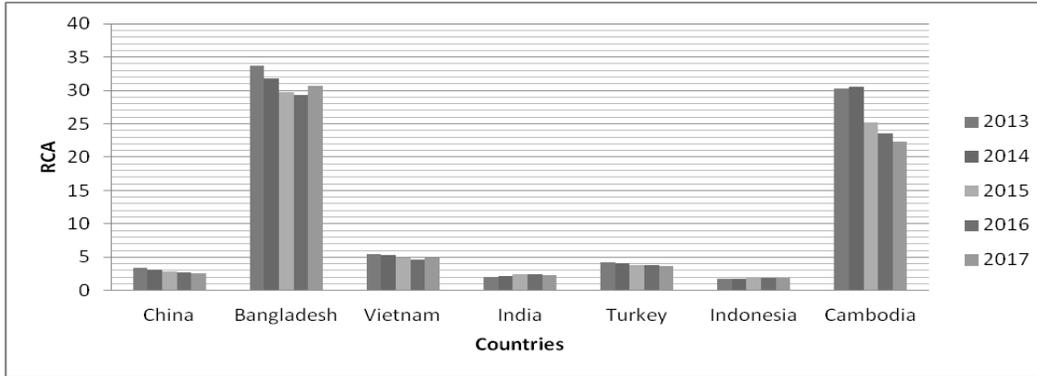

Figure 9. RCA of Apparel Export of Major Competing Countries Source: WTO. (2018b)

Bangladesh's close rival in the Apparel market Vietnam's apparel export contribution in the total export remain stable at 13%, however the market share has been increasing at a pace more than all the other competitors. That suggests that Vietnam's economy is achieving a diversified expansion and growth not a centralized or industry-based export growth, whereas; Bangladesh's export has been growing on a singular industry; the apparel industry. Other major industries such as Jute and Leather industry have been falling behind continuously compared to RMG. China's share of clothing export in its total export has been constant at 8% till 2016. In 2017, it fell to 7% which is about 878 million dollars. Although Bangladesh's share has declined a bit in 2017, the amount of actual clothing export has increased by 545 million USD. However, Vietnam's share of clothing export remains the same as 13% but its actual apparel export has achieved a phenomenal growth of 20% (4777 million USD), WTO (2018b).

Table 10. Apparel Export Share in Total Export of Competing Economy

Country/Year	2013	2014	2015	2016	2017
China	8%	8%	8%	8%	7%
BD	81%	81%	82%	82%	81%
Vietnam	13%	13%	14%	13%	13%
India	5%	6%	7%	7%	6%
Turkey	10%	11%	11%	11%	10%
Indonesia	4%	4%	5%	5%	5%
Cambodia	72%	78%	70%	66%	60%

Source. Authors' Calculation

As far as the world apparel market is concerned, it has grown by 22,983 million dollars in 2017 from 2016, almost 5.12% growth which is a huge growth opportunity for the Asian countries having competitive advantage in apparel manufacturing. In terms of grabbing this extra world demand in clothing, Asian participants (considered in this study) could grab only 7,085 million dollars. All the countries considered in this study only hold around 31% of the extra demand produced in 2017 (from 2016) of which Vietnam exhibited a phenomenal performance. Vietnam captured almost 21% of this extra demand whereas Bangladesh only managed to have 2.3% share which is even less than Indonesia with 3.21% and Cambodia with 2.35%. This analysis suggests that Bangladesh has been less competitive in grabbing the growth in demand in world market compared to other Asian competitors.
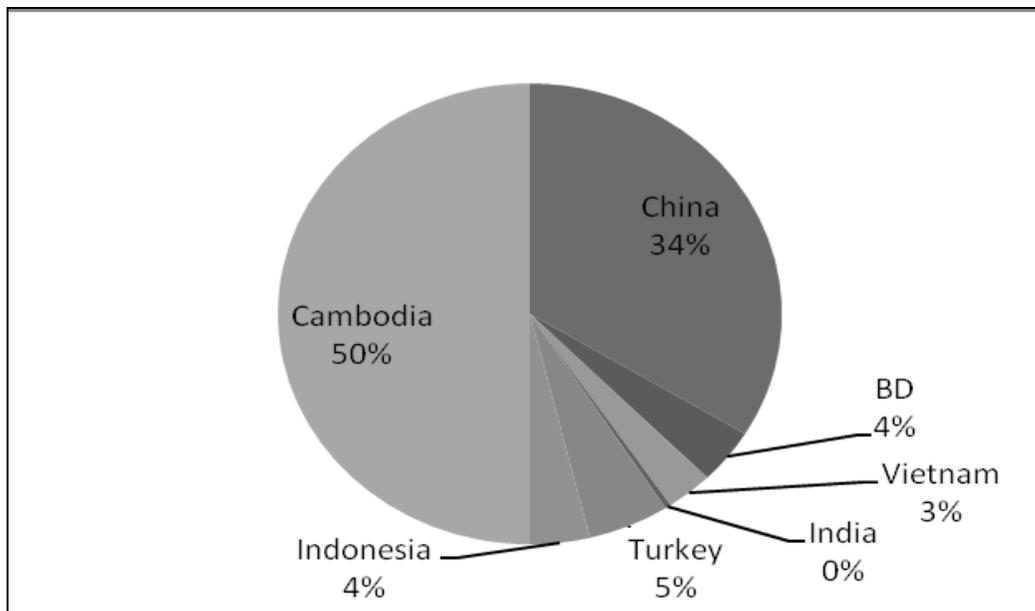

Figure 10. Competitiveness among Major Asian Countries Relative to Share in World Demand.

Source. WTO Database 2018

The Pearson coefficient correlation analysis exhibited in table 11 reveals the relationship of apparel export of different competing economies. The analysis shows that Bangladesh and China's exports are strongly negatively correlated with each other which signifies that any decline in Chinese export will result in an increase of the Bangladesh's export of RMG or vice versa. Vietnam as a close competitor of Bangladesh has also got negative correlation with Chinese export. However, the export of Bangladesh and Vietnam is strongly positive correlated with each other. Apart from Turkey, all the other competing Asian nations in clothing export have got a negative correlation with China although India's and Indonesia's correlation with China's are weaker in form.

Table 11. Correlation Coefficient of Apparel Export Among Competing Economies

Country	China	BD	Vietnam	India	Turkey	Indonesia	Cambodia	World
China	1							
BD	-0.891	1						
Vietnam	-0.752	0.922	1					
India	-0.407	0.777	0.808	1				
Turkey	0.804	-0.590	-0.406	-0.100	1			
Indonesia	-0.342	0.344	0.638	0.207	-0.117	1		
Cambodia	-0.869	0.990	0.964	0.784	-0.533	0.463	1	
World	0.425	-0.127	0.200	0.306	0.773	0.473	-0.0146	1

Source. Authors' Calculation

Table 12 exhibits the relative vulnerability of comparative advantage of Bangladesh and other competing economies of Asia in the world apparel export market. Additionally, the statistical significance of the correlation between Bangladesh and China's RCA has been exhibited. The result shows that Bangladesh has got the highest standard deviation in RCA (1766) after Indonesia compared to all other major competing economies in Asia. Vietnam's volatility in RCA is significantly lower than Bangladesh suggesting a stable compatible position in apparel export. The lowest dispersion in RCA is experienced by India and Indonesia compared to other counterparts. The correlation of RCA between Bangladesh and China and Vietnam and China are found to be strongly positive and statistically significant at 5% confidence interval.

Table 12. Statistical Test of Consistency and Risk of RCA

Countries	SD	Mean	COV	Correlation(R) with Chinese Export	R^2	P Value
China	0.310	2.490	0.1246	1	1	
BD	1.766	26.172	0.0674	0.9048	0.8187	0.034753 (The result is significant at $p < .05$
Vietnam	0.315	4.242	0.0744	0.9393	0.8823	0.017788 (The result is significant at $p < .05$
India	0.182	1.952	0.0934	-0.8834	0.7804	0.047189 (The result is significant at $p < .05$
Turkey	0.265	3.309	0.0802	0.9842	0.9686	0.002378 (The result is significant at $p < .05$
Indonesia	0.058	1.505	0.0390	-0.8019	0.643	0.102564 (The result is not significant at $p < .05$
Cambodia	3.824	22.653	0.1688	0.9561	0.9141	0.010969 (The result is significant at $p < .05$

Source. Authors' Calculation

Although the Standard Deviation and Coefficient of Variation of RCA of Bangladesh is on higher side, the RMG export of Bangladesh has achieved significant growth regardless of the severe competition from the new rivals like Vietnam and Cambodia and market leaders like China. Being a flagship industry, the comparative advantage of Bangladesh in apparel export is still the highest among all other Asian competitors.

5. Policy Recommendations

As long as a person can be taught skills that are marketable and can fetch employment – both government and private sector should be encouraged to invest in human capital and skill development. The government of Bangladesh ought to diversify in its export earnings instead of relying on approximately 80% to export earnings that come from one sector. This is a lot like putting all eggs in one basket instead of spreading out the risk should the sector not perform. In this regard, the following issues can be considered:

- The government needs to take quick measures to not only build but also maintain the infrastructure of the country – be it roads, highways, rail, river, sea, airport etc. We have seen time and time again that when the government lets go of some control to the private sector then the efficiency of that entity increases. Perhaps the government ought to consider loosening its control over the infrastructure of Bangladesh to the private sector on a contractual basis to see if the efficiency level improves or not. The government also needs to take measures to increase investment in general – whether it is FDI or local investors or a collaboration of both.

- Bangladesh needs to rebrand itself as a lucrative investor's haven instead of a last resort for sunset industries to maximize the length of their run. The RMG sector has met all the safety standards imposed by many factory safety regulatory bodies. The RMG sector itself needs to ensure that they capitalize of the efforts that all 93% of the factories that have adhered to the regulations in place. The RMG industry of Bangladesh ought to hold buyers accountable to ensure the same level of factory safety measures are in place in competing economies as well before a buyer places any order from them.

- The government can raise awareness about using green technology in garments industries as textile, washing and garment factories have annually saved 21.6 billion liters of water and 2.5 million megawatts of electricity by adopting green technologies, according to findings of a project of International Finance Corporation. They have also reduced emissions of greenhouse gases by 4.6 lakh tons and waste water by 18.8 billion liters, according to officials involved in the project, the Partnership for Cleaner Textile which will ensure the sustainability of clothing industry and others in the world (TheDailyStar, 2019).

- The furniture sector could be one of the major export earners for Bangladesh if the government extends bonded warehouse facility to manufacturers and industry people. The sector can help Bangladesh diversify its export basket as Bangladesh earned $74.89 million from furniture exports in fiscal 2018-19, which is 18.53 percent higher than that of the previous year. Furniture is a labor-intensive industry and Bangladesh has available cheap labor. So, we have scopes to increase exports as Bangladeshi companies make world-class furniture (StarBusinessReport, 2019b).

- Jute is an important and privileged sector in our country. This industry depends largely on exports as the domestic market for jute goods is not big enough and it has been enjoying reduced tax benefits for the last several years and government has extended the tenure of paying tax 10% instead of 35% on export income. In addition to this, the people can be well trained up and encouraged to invest in this sector and hence the export earning can be made diversified (Parvez, 2019).

- Bangladesh has the potential to earn as much as $10 billion from leather and leather goods exports by 2025 if the country can improve compliance protect labor rights and obtain international certification within a short time. Because of poor compliance and working conditions in the leather sector as well as a lack of the LWG certification, Bangladeshi tanners have to sell tanned leather at 40 percent below the international rates. The tanneries should produce goods at eco-friendly factories and obtain the Leather Working Group (LWG) certification, which is a must for better prices. It is very important to set up cold storages in different parts of the country so that rawhides can be preserved there for a long time, in a bid to ensure fair prices and also non-compliant companies should be made compliant(StarBusinessReport, 2019a).

Last but not the least the government of Bangladesh should recognize that its strength lies beyond cheap labor. If the youthful population of Bangladesh is considered its strength and "resource" rather than cheap labor then the country can treat its ever-growing population and consider it an asset. This can be done through improvements in the quality of education and job opportunities for its workforce. There is a massive influx of individuals entering the workforce every year. Currently the rate of job creation does not keep pace with the number of individuals entering the workforce, leading to high youth unemployment. The government is trying to strengthen its diplomatic ties with other nations to provide employment opportunities for Bangladeshi nationals overseas, resulting in "brain drain" for the country as the better talented and qualified nationals choose to remain employed overseas. However, if the government is able to attract the right investment, and provide the right jobs to its youth, it can retain the young guns and diversify its competitive advantage beyond RMG industry.

6. Conclusions

This paper analyzes the revealed comparative advantage (RCA) of Bangladesh and other competing economies of Asia in the global apparel market for the period of 2013 to 2017. The analysis also signifies the different forces behind the fluctuations happening in the export pattern and emphasizes the significant factors behind the success factors in the apparel export of Bangladesh and its close competitors during the analyzed period. Balassa's revealed comparative advantage indices have been used to estimate RCA for major Asian economies competent in apparel manufacturing. The result exhibited that Bangladesh has achieved the highest RCA among all the other comparing economies however it also signifies that Bangladesh's export earning is highly dependent on singular industry, which might be very risky and unsustainable considering the severe competition from the new rivals such as Vietnam and Cambodia. Although Bangladesh's RCA is very high, its variability measured by Standard Deviation is also on higher side which makes the RCA is more vulnerable.

The results exposed that Bangladesh's export has been significantly negatively correlated with the export pattern of China's that means any decrease in China's export will benefit Bangladesh's Export in same product group. However, Vietnam's export pattern also shares the same correlation with China. The result also justifies the new market share resulted from the recent decrease in China's decline in global clothing export as well as the increase in the global clothing demand. Bangladesh did not strongly make its impression in grabbing extra export share, whereas Vietnam took the significant toll out of this. Vietnam's export in FY 2016-2017 has almost been increased by 22%, the highest among other major exporting economies. The major factors driving this growth are the investment in infrastructures, notable foreign investment from China and other developed nations due to China's plus one movement where Bangladesh remains incompetent compared to Vietnam. The outcomes also pointed out that though Bangladesh has comparative advantage in many clothing products, it has not been able to enhance its portion in world clothing trade at a faster speed due to high transaction cost, low labor productivity and latest technology orientation over its competitors in case of making garments product. Although reasonable wages can still provide Bangladesh a competitive edge, value addition per employee is a way more significant consideration in determining global competitiveness. Comparative advantage generated from the low-cost manufacturing process of developing countries will not necessarily shift into a comparative advantage in running the whole supply chain while all services-oriented scope is considered. Value generation per worker is also significantly noteworthy associated with the country's ability to move towards high value ended products in the market. Producers, exporters, and suppliers are required to put more importance on the education, training and skill development i.e., designing, sourcing & negotiation, quality and cost management, logistics and supply chain management, sales and distribution.

Appendix

Table 13. Total Clothing Export by Reporting Economy to the World – Annual (Million US Dollar)

Countries	Annual Export of Clothing	2013	2014	2015	2016	2017
China	(in million USD)	177530	187276	174694	159341	158463
Bangladesh	(in million USD)	23501	24584	26603	28668	29213
Vietnam	(in million USD)	17148	20174	21948	23005	27782
India	(in million USD)	15542	17929	18374	18193	18617
Turkey	(in million USD)	15393	16668	15121	15047	15101
Indonesia	(in million USD)	7692	7670	7593	7474	8214
Cambodia	(in million USD)	4832	5339	5938	6651	7193
World	(in million USD)	452983	483908	456005	448611	471594

Source. Compiled from (WTO, 2018a)

Table 14. Total Merchandise Export by Reporting Economy to the World – Annual (Million US Dollar)

Countries	Annual Total Export	2013	2014	2015	2016	2017
China	(in million USD)	2209005	2342290	2273468	2097632	2263346
Bangladesh	(in million USD)	29114	30405	32379	34894	35851
Vietnam	(in million USD)	132033	150217	162065	176581	214323
India	(in million USD)	314848	322694	267444	264144	299275
Turkey	(in million USD)	151803	157610	143839	142530	156993
Indonesia	(in million USD)	182552	176293	150366	144743	168775
Cambodia	(in million USD)	6666	6846	8542	10069	12089
World	(in million USD)	18950647	18984510	16530568	16030540	17731864

Source: compiled from (WTO, 2018a)

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