COMPETITIVENESS OF CLOTHING INDUSTRY BASED ON PORTER’S DIAMOND MODEL: SAFTA COUNTRIES

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Abstract- SAFTA countries traditionally excel in clothing exports. The industry provides a potential for employment and growth in the region. In this study the Porter’s ‘Diamond Model’, is used to evaluate and analyse the industrial competitiveness of various SAFTA countries and compare the factors contributing to their competitiveness. The study is based on secondary data from WTO, International Trade Statistics and WEF. The findings of the study have significant theoretical and policy implications.

Keywords- Competitiveness, Apparel Industry, SAFTA countries, Porters Diamond Model, Competitive Strategies, Textile & Clothing industry

I. INTRODUCTION

The clothing industry is considered to be the backbone of a number of SAFTA countries. It is the driving force for socio-economic development and plays a pivotal role by creating employment, women empowerment and poverty alleviation. The potential for economic growth can be seen from the fact that world exports of textiles and clothing rose by 8 percent in 2013, four times higher than the average growth for world exports (WTO 2014).

China is the leading exporter of textiles and clothing followed by EU (28) . The SAFTA countries India, The agreement on South Asian Free Trade Area (SAFTA) 2004 is a trade agreement which promotes trade and economic growth. Member countries include Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, Sri Lanka and Afghanistan. The latter joined in 2011.

General System of Preference (GSP) established by the Trade Act of 1974 by US promotes economic development of poor countries by removing duties from 5000 types of products. The EU’s ‘Generalised Scheme of Preferences’ (GSP) i.e., ‘Everything but Arms (EBA), grants duty-free quota free access to all products, except arms and ammunition.

Bangladesh and Pakistan rank 3rd, 5th and 9th respectively, among the top ten exporters in this sector (Figure1). The growth rates in these countries for Textile and Clothing exports are 23 percent, 19 percent and 7 percent, respectively for India, Bangladesh and Pakistan. This underscores the importance of this sector for the SAFTA countries.

Regional success has often been attributed to import tariff exemption under the Generalised System of Preference (GSP) that gave them free access to USA and EU markets after the Multi-fibre Arrangement (MFA) was lifted and cheap labour advantage. However, dependence on such ‘chance’ factors and on low cost labour does not result in sustainable competitive advantage. The strategic plan for the SAFTA countries should be to move from ‘factor driven’ to a more well developed ‘efficiency driven’ stage of development. Government policy plays a pivotal role in facilitating such a change.

This research proposes to conduct a comparative study of the factors that contribute to the competitiveness of the clothing industry of SAFTA countries, based on Michael Porter’s ‘Diamond Model’. In order to evaluate the relative importance of these factors in different countries.

1.1. Research Questions
The research questions are as follows:

i. What are the factors that contribute to the competitive advantage of the clothing industry in SAFTA region?

ii. How can these factors be leveraged to enhance the export performance of the clothing industry in SAFTA region?

iii. What are the key components that are driving competitiveness of the clothing industry in different countries within SAFTA region?

II. METHODOLOGY

This research paper is based on the Michael Porter’s Diamond Model. The methodology includes a review of theoretical concepts of comparative advantage and
competitive advantage of a country. The study is
based on available secondary data. It analyses the
competitive advantage of countries in SAFTA region.
To achieve the objective of the research extensive use
was made of secondary data. Data sources included
World Bank Indicators, WTO International Trade
Statistics, World Economic Forum Report, Global
Competitiveness Index and country report of various
countries included in the study.

III. REVIEW OF EXISTING LITERATURE

Theories of Comparative Advantage
Economic theory has evolved over a period of time.
The classical theorists emphasized the importance of
comparative advantage, as an important determinant
of a country’s exports. Modern theorists gave
importance to competitive advantage. These experts
showed how competitiveness of each country
depends on a unique mix of a number of factors.

3.1. Classical Trade Theory
Classical Trade Theory has highlighted the extent to
which a country gains from trade if it devotes
resources to the generation of goods and services in
which it has a comparative advantage (Ricardo, 1817;
Smith, 1776). Smith (1776) further proposes that
division of labor and free trade are key factors in
determining the comparative advantage of nations
while Ricardo (1817) advocated investment in
capital, labour specialization and free trade as engines
of growth. Among others, neo-classical theories
showed how factor endowment resulted in
comparative advantage (Heckscher & Ohlin, 1933)
while the Samuelson & Stolper factor endowment
theorem along with the factor-price equalization
theorem showed how comparative advantage of
exports were related to the capital or labour intensity
of production technique used to produce the good.

3.2. Modern Trade Theory
The technological revolution that took place during
the 1960s gave rise to a number of multinational
enterprises. Theories of international trade during this
period reflect the changing commercial realities
(Leontief 1966). Leontief emphasized the importance
of: (i) Human capital (the role of skilled labor force
i.e., designers, engineers, technicians and (ii)
technology, as important determinant of trade.
Theorists like Linder (1961) stressed the importance
of multinational enterprises (MNEs). According to
Linder, international trade consists of intra-industry
trade between countries of goods produced by the
same industry. Linder’s hypothesis was that
international trade in manufactured goods result from
similarities of preference among consumers in
countries that are at the same stage of economic
development. During the 1960s the product cycle
theory of international trade became very important
theory for explaining and predicting (a) international
trade patterns and (b) it also explains reasons for
MNE expansion. Stages in the product cycle (Vernon
1966, 1971; Wells 1968, 1969) suggests that trade
cycles emerges where in a product is initially
produced by a parent firm, then by its foreign
subsidiaries and finally anywhere in the world where
cost of production is the lowest (Vernon 1966; Wells
1968; 1969). The international product life cycle
theory underscores the importance of technological
innovation and market expansion as critical elements
in explaining patterns of international trade.
Technology plays a pivotal role in creating and
developing new products while market size and
structure influence the extent and type of
international trade. These theorists stressed the
important of venture capitalists and outsourcing.

3.3. Michael Porter Theory of Competitiveness
The explanation of trade theory centres on
competitive advantage rather than comparative
advantage from the point of view of management
theory. The theory of competitive advantage was
originally advocated by Porter (1990a, 1997a, 1998b,
enhances the understanding of the international
competitiveness of a firm. It is the first multilevel
theory to realistically connect firms, industries and
nations (Peng 2014). International competition at the
firm level has changed over the last decade because
of the changing pattern of world trade, globalization
of the world economy, rapid development and spread
of ICT and the rise of transnational organizations.
These changes resulted in a revival of explanations
for trade particularly at the level of individual
industries (Porter 1990a, 2003; Rugman & Verbeke
2004; Dunning 2007). The theory was further tested
recently by management theorists (Griko & Koopman
2006; Ketels 2006).

3.3.1. National Diamond Concept
Porter introduced the concept of National Diamond
(1990) that identifies the following:
(i) Factor conditions – A host country industry
should have an appropriate supply of factors like
land, labour and capital. ‘Basic factors’ are
inherited nut ‘advanced factors’ have to be
created with specialization.
(ii) Demand conditions –affect an industry’s ability
to compete internationally. This depends on (a)
demand conditions in the home market, (b)
sophisticated and demanding home buyers and
(c) buyers in the home market anticipate the
needs of buyers in other countries.
(iii) Related and supporting industries - ‘clusters’ of
industries in the home based economy which are
linked to each other through vertical and
horizontal relationships amongst competitive
supplying and buying sectors or common
customers, distribution channels or technologies
(iv) Firm’s strategy, structure and rivalry - includes strategies and structures of the home based firms and the extent to which there is rivalry among them. He further added two exogenous factors, namely government and chance (1990).

IV. METHOD OF ANALYSIS

The paper aims to identify the factors that enhance the competitiveness of SAFTA countries. For the analysis SAFTA countries were classified into various stages of development based on their Gross Domestic Product (GDP) per capita taken from World Bank Indicators (WEF 2014). The study classifies the SAFTA countries based on the level of development of a country.

<table>
<thead>
<tr>
<th>Countries</th>
<th>GDP per Capita</th>
<th>Stages of Development</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bangladesh</td>
<td>$2,079.8</td>
<td>Stage I</td>
</tr>
<tr>
<td>India</td>
<td>$4,077.1</td>
<td>Factor Driven</td>
</tr>
<tr>
<td>Pakistan</td>
<td>$3,149.4</td>
<td></td>
</tr>
<tr>
<td>Bhutan</td>
<td>$6,369.7</td>
<td>Transition Stage I</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>$6,530.5</td>
<td>Transition Stage II</td>
</tr>
</tbody>
</table>

Source: Schwab, 2014 (WEF)

The pillars described in the Global Competitiveness Index (GCI) affects different countries differently i.e., the ‘best way’ for Bangladesh to improve its competitiveness is not the same as the ‘best way’ for Bhutan and Sri Lanka. This is because these countries are in different stages of development. For example if there is an increase in wages in a country, it would mean that the productivity in that country should also increase in order to retain the competitive advantage of labour. Thus Stage I countries like Bangladesh, India and Pakistan are factor driven, comparatively, Stage II countries like Sri Lanka are efficiency driven (WEF 2014). The GCI assumes that in the first stage the economy is factor driven and countries compete based on their factor endowment – primarily unskilled labour and natural resources. Companies compete on the basis of price and sell basic products or commodities with their low productivity reflected in low wages. In our study Bangladesh, India and Pakistan belong to the Stage I and are classed as ‘factor driven’. Maintaining competitiveness at this stage of development hinges primarily on (pillar I to IV) well-functioning public and private institutions, a well-developed infrastructure, a stable macroeconomic environment and a healthy workforce that has at least received a basic education. The other two countries included in our study are in transition stage I, in the case of Bhutan and transition Stage II in the case of Sri Lanka. As countries become more competitive productivity will increase and wages will rise with advancing development. These countries will move into the efficiency-driven stage of development. In this stage of development they must begin to develop more efficient production processes and increase product and quality because wages have risen and they cannot increase prices. At this point, competitiveness is increasingly driven by (pillar V to X) higher education and training, efficiency in the goods market, well-functioning labour markets, the ability to harness the benefits of existing technologies and a large domestic or foreign market.

Table 2: Variables in the Diamond Model

<table>
<thead>
<tr>
<th>Factor Conditions</th>
<th>Demand Conditions</th>
<th>Related and Supporting Industries</th>
<th>Firms Strategy and Rivalry</th>
</tr>
</thead>
</table>

The Global Competitiveness Index (2014) does not indicate the stage to which Nepal belongs. Maldives is excluded from the study because statistical date is not available. Demand conditions include, final consumption expenditure as a percentage of GDP. The number of tertiary graduates. It also includes the government expenditure on education as a percentage of GDP. For the dimension – related and supporting industries we have included, mobile cellular subscription per 100 inhabitants, air transport freight, transport service as a percentage of commercial service exports. Variable included for the firms...
strategy structure and rivalry include high technology exports as a percentage of manufactured exports and capacity for innovation.

V. RESULTS AND DISCUSSION

The competitiveness indices were calculated for the six SAFTA countries (Bangladesh, Bhutan, India, Nepal, Pakistan and Sri Lanka). To calculate Factor Conditions (FC) as part of the competitiveness index the following data was used.

Table 3: Data for Factor Conditions

<table>
<thead>
<tr>
<th>Country</th>
<th>Value added in Industry 1985 – 2013 % of GDP</th>
<th>Company spending on R&amp;D</th>
<th>Availability of scientists and engineers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bangladesh</td>
<td>26.54</td>
<td>2.3</td>
<td>3.2</td>
</tr>
<tr>
<td>Bhutan</td>
<td>44.00</td>
<td>2.9</td>
<td>3.0</td>
</tr>
<tr>
<td>India</td>
<td>29.8</td>
<td>3.8</td>
<td>4.4</td>
</tr>
<tr>
<td>Nepal</td>
<td>16.0</td>
<td>2.60</td>
<td>3.5</td>
</tr>
<tr>
<td>Pakistan</td>
<td>21.24</td>
<td>2.9</td>
<td>4.3</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>30.4</td>
<td>3.3</td>
<td>4.9</td>
</tr>
</tbody>
</table>

To compute the competitiveness index the following method is used. The maximum value of each part of the diamond was assumed to be 100.

Then the corresponding value for each country for the specific variable was calculated as follows.

Table 4: Results for Factor Conditions

<table>
<thead>
<tr>
<th>Country</th>
<th>Value added in Industry 1985 – 2013 % of GDP</th>
<th>Company spending on R&amp;D</th>
<th>Availability of scientists and engineers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bangladesh</td>
<td>60.3</td>
<td>60.5</td>
<td>65.3</td>
</tr>
<tr>
<td>Bhutan</td>
<td>100</td>
<td>100</td>
<td>61.2</td>
</tr>
<tr>
<td>India</td>
<td>67.8</td>
<td>76.3</td>
<td>89.8</td>
</tr>
<tr>
<td>Nepal</td>
<td>36.4</td>
<td>68.4</td>
<td>71.4</td>
</tr>
<tr>
<td>Pakistan</td>
<td>48.3</td>
<td>76.3</td>
<td>87.7</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>69.1</td>
<td>86.8</td>
<td>58.5</td>
</tr>
</tbody>
</table>

For example, in our analysis the maximum value added in industry as a percentage of GDP is 44.00 in the case of Bhutan. Therefore, Bhutan was assumed to achieve 100. Comparatively the value added in industry as a percentage of GDP for Bangladesh was 26.54, (i.e., calculated as follows 26.54/44 X 100 = 60.3). Similarly, the value added in industry as percentage of GDP for India was 29.85. Therefore the value for India was calculated as follows 29/44 X 100 = 67.8. This was done for all the countries included in the study and for all the variables, as seen from Table 4. Then to calculate the competitiveness indices for the factor conditions the following method was used: The value of each indicator under factor conditions was given a weight. In case of factor conditions since there are three indicators in the calculation each was given a weight of 1/3. For the SAFTA countries the calculation was done as follows:

For the SAFTA countries the calculation was done as follows:

Bangladesh:

\[ \frac{1}{3} (26.54) + \frac{1}{3} (44.00) + \frac{1}{3} (29.85) = 34.93 \]

Table 5 shows the competitiveness indices for all parts of the diamond model.

Table 5: Diamond Model Competitiveness Index

<table>
<thead>
<tr>
<th>Country</th>
<th>Bangladesh</th>
<th>Bhutan</th>
<th>India</th>
<th>Nepal</th>
<th>Pakistan</th>
<th>Sri Lanka</th>
</tr>
</thead>
<tbody>
<tr>
<td>FC</td>
<td>62.0</td>
<td>79.2</td>
<td>85.9</td>
<td>58.7</td>
<td>70.8</td>
<td>85.8</td>
</tr>
<tr>
<td>DC</td>
<td>67.1</td>
<td>55.4</td>
<td>74.8</td>
<td>85.4</td>
<td>61.4</td>
<td>65.4</td>
</tr>
<tr>
<td>RSI</td>
<td>38.52</td>
<td>42.8</td>
<td>65.9</td>
<td>21.5</td>
<td>64.7</td>
<td>74.3</td>
</tr>
<tr>
<td>SSR</td>
<td>36.46</td>
<td>53.5</td>
<td>93.5</td>
<td>36.3</td>
<td>55.3</td>
<td>57.5</td>
</tr>
</tbody>
</table>

CONCLUSION AND RECOMMENDATION

Factor Conditions:

Theoretically factor conditions include basic as well as advanced factors. The basic factors incorporate geographical conditions, natural resources, infrastructure, Energy supply, basic labour force resources and financial market. The advanced factors consist of technical equipment, talents, and skills, enhanced education, innovation and capital operations. In our analysis India and Sri Lanka rank first for factor condition whereas Bangladesh like Nepal does not have very supportive factor conditions. The results are a reflection of the poor infrastructural facilities in both Bangladesh as well as Nepal. The two countries rank last and second last among the SAFTA countries for overall quality of infrastructure which is mainly because of poor quality of roads, air transport infrastructure. Comparatively India and Sri Lanka rank 1st and 2nd among the SAFTA countries for overall quality of infrastructure which is a reflection of the improvement they have made in railroad and air transport infrastructure in the case of India and quality of roads, air transport, and telecommunication in the case of Sri Lanka. The SAFTA countries like Bangladesh and India have a large labour force of unskilled workers. The wages for unskilled clothing workers is low, $75 for Sri Lanka and Bangladesh, $90 and $110 for Pakistan and India respectively, as compared to $275, in the case of China (ILO 2014). The basic and advanced factors concerning labour and labour skills; education and training have been developed both by Sri Lanka and India. Government of both these countries allocates increasing amounts of public expenditure to development of educational institutes, skill development and technical training of the work force. This is one of the reasons why India ranks ahead of Bangladesh in world textile and clothing exports in spite of the ‘chance’ factors in the form of GSP being more favourable to Bangladesh and Nepal. Bangladesh on the other hand ranks 6th among the SAFTA countries for factor conditions, because of...
poor quality of education, particularly mathematics and science education, quality of its management schools and also internet access to schools. Wage Rates in Bangladesh are very low and labour market is not very efficient because of poor capacity of firms to attract and retain talent mainly reflected in the lack of a system of incentives. There is no relationship between pay and productivity in Bangladesh. However among the SAFTA countries Nepal is worse than Bangladesh as far as labour market efficiency is concerned. Research shows that labour market compliance is grossly neglected. (Ahmed 2013; Rahman & Hossain 2010; Ullah et al., 2013). This confirms the WEF (2014) stance that these countries are ‘factor driven’. The ability to attract and retain talent is much better in both Bhutan and India where there is a link between pay and productivity. The competitiveness of a country can be enhanced with the development of basic factors like transport networks which include railways, roadways waterways as well as aviation. It is also necessary to develop local and international networks of telecommunication and supply of electricity. World class clothing industry uses automatic design, automatic material arrangement, automatic sewing, 3D ironing and automatic packing. Many units all over the world have moved into the knowledge era with the application of Enterprise Resource Planning (ERP), Customer Relations Management (CRM) and Supply Chain Management (SCM). Improved manufacturing and productivity takes place with the use of software technology such as CAD, CAM and UPS. Compared to the more than 50 percent of CAD /CAM applications in clothing industry in USA, 70 percent in EU and 80 percent in Japan, the changes in the SAFTA region are negligible. Competitiveness in world exports of clothing requires a strategic change from ‘cost orientation’ to ‘value orientation’.

Demand Factors:
Demand conditions take into account domestic demand and international demand. The continuing increase of national income and resident’s income results in an improvement in domestic demand for clothing. GDP per capita growth rates during the last few years was approximately, 5 percent and 3 percent in the case of India and Bangladesh respectively. GDP per capita in Nepal was merely between 2 to 3 percent. This shows that demand conditions depends more on international demand than internal (domestic) demand in the case of these countries. However, countries like India have a large population and Bangladesh is one of the most densely populated countries (World Fact Book 2014), therefore with economic development and a change in the consumption structure the domestic demand for clothing will increase. Similarly, with a rise in the middle class in Bangladesh, Pakistan and Nepal, domestic demand will increase. Currently however, the domestic clothing consumption is not mature and lacks elite consumption group. International demand for clothing is high for countries in the SAFTA region, particularly Bangladesh, India, Pakistan rank 4th and 6th and 9th respectively, among the top 10 clothing exporters (WTO 2014). Chance factors like, the abolition of MFA and the preference given to Bangladesh, Nepal, Sri Lanka under the Generalized System of Preference (GSP) have increased the exports of these countries to USA, EU markets.

The Industry Strategy, Structure and Rivalry:
The indexes for the SAFTA countries for industry strategy, structure and rivalry reflects the fact that this factor has been grossly neglected in this regional group. There is very little or no clustering of the clothing with related industry. More competitive clothing exporters have developed “corridor” of L-shaped clothing industry with clusters of knitting manufactures, printing and dyeing, and firms producing accessories and embellishment and water washing mills etc. Besides this the management mechanism is not well organized. Leading brands from all over the world use the SME privately owned firms in these low wage countries to outsource their productions because of the comparative advantage based on low wages. This was reflected in the works of Vernon (1966); Wells (1968; 1969). The privately operated SMEs still have an old fashion household management style that focuses on achievement of target orders rather than long term objectives of quality and skill improvement. The ownership structure in Bangladesh is that around 65% of firms are foreign owned. There is low motivation of employees and managers because of lack of incentives. Bangladesh has 5600 factories (BGMEA 2013) but only 500 firms mainly contribute to the direct export this shows lack of rivalry leading to the increase in the competitiveness.

Related and Supporting Industry:
The related and supporting industries include clothing and auxiliary material supply, clothing machinery suppliers, specialized market for textiles and clothing, associations and agencies and development of ‘clothing clusters’. It is mandatory that a ‘Clothing export promotion councils strengthen the public-private sector partnership with the objective of concurrently focusing on the three mains areas viz., continuity to lobby for duty free market access in the USA, intensified promotion programmes to exploit the GSP market(Canada and EU) and develop a modality for construction and operation of a special export processing zone for clothing in order to develop a hub for designing operation and upgrading production technique. Competitiveness of the clothing industry depends on infrastructural development which includes paved roads, highways, ports and a steady flow of electricity and standardization of all Customs data requirements and administrative forms. Customs and shipping
documents often delay the processing time and costs. In the case of Bangladesh which is ranked practically last among the SAFTA countries for related and supporting industries, trade facilitation initiatives and improvement in infrastructure at the Port of Chittagong, including integration of rail and road links in the ‘Dhaka-Chittagong Economic Corridor’ will enhance the competitiveness of clothing industry. The importance of the corridor can be seen from the fact that ‘thirty percent of the population resides within the corridor and it accounts for 40% of GDP’. The road is used because of limited rail capacity and handles 83% of containerized cargo between Dhaka and Chittagong. This is reflected in, the limited connectivity between Inland container depot (ICD) and the port of Chittagong. Power outages were the main reason for Bangladesh productivity gap. Clothing exporters in Bangladesh would earn 30% more if these inefficiencies were removed at Chittagong port. Similarly Indian companies suffer a 37% cost disadvantage in shipping containers of clothing from Mumbai/Chennai to the east coast of USA, relative to similar container shipments from Shanghai. This cost disadvantage arises from inefficiencies and delays at Indian ports. Governments industrial policies should provide support for technological upgradation and modernization of Textile and Clothing. Industrial policy in Bangladesh, India, and Pakistan focus on reduced tariffs on imports of machinery and equipment and provide credit and cash support to help industry to modernize. Michael Porter(1998) demonstrates how sub-national clusters of very specific economic activity can supply global markets. **Recommendations**

The slow progress of SAFTA has led to attempts to pursue a ‘fast-track’ liberalization of trade through bilateral free trade agreements (FTAs). There are a number of FTAs in the region: India-Bhutan, India – Sri Lanka, and Pakistan –Sri Lanka and a few FTAs are being negotiated: India-Pakistan, India-Bangladesh, and Pakistan Bangladesh and Sri Lanka –Maldives. The government policy and government expenditure on setting up of clothing training institutes as well as providing infrastructure and clusters will have a positive effect on the competitiveness of clothing industry. Economic liberalization should be introduced to a greater degree in the SAFTA region; this includes de-regulation of industry, the opening of markets and continuation of incentives to attract foreign direct investment by large multinationals.

**BIBLIOGRAPHY**


