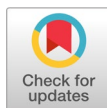


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# Textile Industry in Pakistan and Bangladesh: Comparison, Challenges and Future Prospects

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## Abstract

Pakistan and Bangladesh began their journey into the global textile and apparel market from similar baseline but their paths have been far different. This study analyzes the textile and apparel sectors of both countries employing a fixed comparative framework that consists of 8 factors in a structured, qualitative comparative framework: industrial structure and production capacity, policy, legal and institutional framework, trade performance and tariff regime, energy, infrastructure and logistics, labour, wages and social compliance, technology and R&D, sustainability and environmental compliance, investment, financing and ease of doing business. The literature review, data analysis, key findings, and policy recommendations are all presented using the same framework that addresses a key limitation of previous single-country studies that did not use a consistent comparative framework. The findings indicate that Bangladesh has been able to grow its export volumes to USD 38.5 billion in 2024, due to the policy predictability, low cost downstream specialization in ready-made garments and duty exemption for textile imports in the country, whereas Pakistan has shrunk its textile exports to USD 16.7 billion during the same period with high energy cost, irregular tax and refund system, low vertical specialization in man-made fiber and lack of institutional follow-up of successive textile policies. The study would conclude by presenting a prioritized set of policy recommendations for Pakistan, directly linked to the identified gaps, which will help in the near term and medium-term policy action.

**Keywords:** Bangladesh, Pakistan, textile industry

## Introduction

The textile exports of Pakistan declined from 19.3 billion in 2022 to 16.7 billion in 2024. The decline is mainly attributed to high energy costs and domestic economic instability. Similarly, the cotton production dropped

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from 9 million bales in 2023 to 6 million bales in 2024, leading to costly imports from US and Brazil. The raw textile exports i.e. yarn and fabric, also witnessed a decline. However, value-added textile exports saw a 15% rise. Frequent policy changes regarding subsidies, taxation and energy tariffs in Pakistan create uncertainty for investors. In contrast, Bangladesh, with stable and predictable policy has secured the second position in the world with \$38.48 billion garment exports in 2024. The industry in Pakistan faces persistent challenges that hinder its efficiency and global competitiveness.

Textiles and clothing are essential parts of human consumption. The global textile industry has a significant role in the development of economies of the developed and developing countries. The global textile industry was valued at \$1.1 trillion in 2024 growing at a compound annual growth rate of 3.5% (Nasir et al., [2025](#)). Asia has the highest market share with 54% of global market in 2024. There is an increasing trend of fashion textiles for home furnishings and fashion designing. An increase in Government investment by China, India and Bangladesh have served as an impetus to the market growth. The rise in digital trade has added another dimension to the global textile market. There is extensive use of fossil fuels in the various processes of textile industry which have led to negative impact on the environment. The Sustainability of textile supply chain management has gained immense importance over the last decade. World Trade Organization (WTO) has played a critical role in shaping the global textile and apparel business, ending the quotas on exports imposed under Multi-Fibre Arrangement (MFA). The WTO brought predictability and transparency to the business and introduced Agreement on Textiles and Clothing (ATC), and differential treatment for the developing countries under Generalized System of Preferences (GSP).

Textile industry contributes 8.5% to the GDP of Pakistan contributing 54% to the total exports of \$30.6 billion. The Garment industry contributes around 11% to the GDP of Bangladesh contributing to 80% of the total export revenue of \$50 billion. Despite Pakistans early establishment as a major textile producer, Bangladesh has surpassed Pakistan in global textile exports, particularly in the Ready-Made Garment (RMG) segment, over the past two decades. This divergence raises important questions regarding the underlying factors contributing to Bangladesh's superior performance and Pakistan's relative stagnation.

## Research Questions

- How does Pakistan's textile industry compare to that of Bangladesh in terms of structural efficiency and policy incentives?
- What strategies can Pakistan adopt to enhance its textile sector's competitiveness by learning from Bangladesh's experience?

According to WTO definitions, the textile sector includes yarn, fibers, fabric, and made-up products (bed sheets). The apparel or clothing sector includes the knitted, woven, designed and stitched products. For the purpose of this study apparel and clothing shall be used interchangeably.

Various aspects of policy framework related to growth and efficiency of textile and apparel sectors have been studied to assess different variables to assess its scope of implementation to improve textile sector for better export prospects for the economy of Pakistan. The role of APTMA, Ministry of Commerce, Trade Development Authority of Pakistan has been reviewed. The National Textile and apparel policy 2020-2025 has been taken as principal document governing the textile sector. The Textile Act, 2018 passed in Bangladesh has been reviewed. The secondary data for the last 8 years have been taken up to form the basis for analysis in this study. However, a general historical background has been discussed based on the research articles.

The report consists of five major sections. The first section introduces the subject. Section II explains the research methodology. Section III focuses on situation analysis through comparative study of industrial structure, policy incentives and product competitiveness. The legal and institutional framework and historical background, are part of section III. Section IV highlights the major issues and challenges. Section V proposes a strategy with policy recommendations as the way forward.

## Literature Review

Pakistan and Bangladesh are among the world's top ten textile exporters where textile industries play a key role in the economies of the both the countries. The textile industry is one of the oldest and largest industries in Pakistan generating around 8.5% of GDP and employing around 38-45% of the manufacturing workforce (Ahmed, [2021](#)). After 1980, Bangladesh's RMG industry became a global industry and is currently responsible for approximately 11% of national GDP and more than 80% of national exports.

Textiles sector in Pakistan is diversified in cotton yarn, fabric, garments and home textiles and the main markets are USA, Europe & China, but Pakistans share in the global textile market is around 1.7% (Khan et al., [2020](#)). Meanwhile, the RMG sector is dominating the economy of Bangladesh as it is the second largest apparel exporting country in the world with 6.3% of global market share (World Trade Organization [WTO], [n.d.](#)). The wage disparities between the two countries result in a structural cost advantage for Bangladesh, as access to duty-free EU markets under the Everything but Arms (EBA) scheme is also a factor (Ahmed, [2021](#); Sumaiyah, [2023](#)). Pakistan, on the other hand, has faced challenges in maintaining GSP+ compliance at times.

Emphasis is constantly placed on the importance of government policy as a key determinant. Although export subsidies, tax facilities, and E.P.Z. infrastructure have been maintained with a certain degree of consistency during the period in Bangladesh, the export sector in Pakistan had to face the challenges of energy constraints, high taxation, and policy instability over a period of time (Ayaz et al., [2023](#); Khan et al., [2020](#)). The energy mix of Bangladesh has been diversified and arrangements are in place for cross-border supply, minimizing any cost volatility in energy supply compared to Pakistan (Karim et al., [2020](#)). Regarding sustainability, Bangladeshs RMG industry has been under a lot of scrutiny from the international community in respect of water treatment and working conditions after the Rana Plaza disaster in 2013 which has attracted investment from certifications and compliance and Pakistan has not been able to keep pace with (Bukhari & Hayat, [2024](#)).

The studies discussed above provide individual comparative data points (export shares, wages, energy costs, and certification levels); however, no single, consistently repeated array of comparison factors can be applied to the literature review, empirical analysis, and policy recommendations. Similarly, the work of Meena ([2024](#)), compares the performance of the textile and clothing exports of India and China in the post-MFA era. Wei and Balasubramanyam ([2015](#)), explain the relative performance of the Chinese and Indian manufacturing sectors, shows the importance of an explicit, repeatable framework for comparing the performance of various countries and sectors with a well-defined set of structural and policy variables. It is the same approach that has been applied in this study for the case of Pakistan-Bangladesh comparison.

The framework outlined below is based on three related theories: (i) comparative advantage and factor-cost theory, (ii) global value chains (GVC) theory and (iii) industrial policy theory.

This study has made a comparison between Pakistan and Bangladesh on eight factors in order to keep track of the evidence to the recommendation. Section 4 (Comparative Analysis), Section 5 (Gap Analysis), Section 6 (Key Findings) and Section 9 (Recommendations) are organized by the same eight factors.

**Table 1**

*Factors and Comparative Dimensions*

| Factor | Comparative Dimension                                   | What it Captures                                                               |
|--------|---------------------------------------------------------|--------------------------------------------------------------------------------|
| F1     | Industrial Structure, Value Chain & Production Capacity | Vertical integration, firm size composition, spinning/weaving/garment capacity |
| F2     | Policy, Legal & Institutional Framework                 | National textile policies, legal acts, implementing institutions               |
| F3     | Trade Performance, Market Access & Tariff Regime        | Export value/destinations, trade agreements, tariff exposure                   |
| F4     | Energy, Infrastructure & Logistics                      | Energy cost/reliability, ports, transport, customs clearance                   |
| F5     | Labour, Wages & Social Compliance                       | Wage structure, unionization, workforce composition, labour law                |
| F6     | Technology, R&D & Innovation                            | Automation, digitization, R&D spend, technical education                       |
| F7     | Sustainability & Environmental Compliance               | Certifications, effluent treatment, climate exposure                           |
| F8     | Investment, Financing & Ease of Doing Business          | FDI, cost of credit, ease-of-doing-business rankings                           |

**Note.** Framework developed for this study, informed by Meena (2024) and Wei & Balasubramanyam (2015).

## Methods

This study employs a comparative case study approach using a qualitative research method. The research is exploratory in nature. The approach

focused on the development of major underlying themes after examining the qualitative data.

The primary data has been collected by conducting semi-structured interviews with industry experts, policymakers and manufacturers. Analysis of interview responses was themed, utilized for triangulation and validation of secondary data, and not as primary evidence. Results from the interviews serve as a basis for analysis wherever they were found to corroborate or explain quantitative and documentary sources. Four key-informant interviews were conducted with purposive sampling comprising the four key perspectives of large firms, government policies, former-association and SMEs. Main interviewees were Mr. Musaddaq Zulqarnain (CEO-Interloop), Mr. Mudassar Raza (DG Textiles, Ministry of Commerce), and Mr. Gohar Ejaz (Former Chairman APTMA) and Mr. Naeem Butt (Representative of 300 of SMEs in North Punjab). The detailed discussions with the members of the Chamber of Commerce Lahore, Karachi, and Islamabad were held.

Secondary data sources include government reports i.e. Trade Development Authority reports, All Pakistan Textile Mills Association Reports, academic journal articles, industry publications, and statistical data from trade bodies.

The limitations include the time constraint to fully investigate the problems through field surveys and visits. The textile industry in Pakistan is not structured as a large-scale industry and mainly comprises of many small units.

### **Situational Analysis of Textile Industry in Pakistan and Bangladesh**

The textile value chain includes various interconnected steps from cultivation of cotton crop to the manufacturing of a garment.

**Table 2**

*The Textile Value Chain Processes*

| Subsector        | Input           | Process          | Output             |
|------------------|-----------------|------------------|--------------------|
| Spinning Mill    | Fiber           | Spinning         | Yarn               |
| Fabric Mill      | Yarn            | Weaving/Knitting | Grey Fabric        |
| Dyeing Mill      | Grey Fabric     | Wet Processing   | Finished Fabric    |
| Garments Factory | Finished Fabric | Cut & stitch     | Garments / Apparel |

**Note.** Pakistan Textile Council (2023)

## Historical Background

### *Evolution of Textile Industry in Pakistan*

Cotton has maintained the status of most important cash crop in Pakistan. It is an oil seed crop and is a major raw material for ghee mills. At the time of independence, there was three major textile mills. However, Pakistan had a vast cotton-growing regions, specifically in Sindh and Punjab.

The Nationalization policy adopted by Zulfikar Ali Bhutto in 1970s, slowed the private investment. Productivity and operational efficiency witnessed a decline and the textile sector remained stagnant till the industry rebounded with a surge in private investment in 1980s (Ahmed, [2021](#)). Pakistan's exports in cotton yarn, home textiles and denim showed a marked increase.

### *Evolution of Textile Industry in Bangladesh*

Bangladesh remained a textile hub for global muslin and silk trades from sixteenth century to eighteenth century. Bengal was an important cotton-producing region, exporting cotton and silk to Europe, Indonesia and Japan. After advent of east India company and British rule, high tariffs were imposed to restrict access of Bengali products to British market, as part of protectionist strategy.

In 1960s, the Bengali businessmen came forward to establish their jute factories. A milestone was achieved with Desh-Daewoo collaboration in 1978, which boosted the technology transfer and skill development in RMG sector. The textile sector was nationalized and a state-owned enterprise called Bangladesh Textile Mills Corporation (BTMC) was established. New Industrial Policy in 1982, privatized many jute and textile units and returned them to their original owners. (Sikder, [2019](#)).

The Multi-Fiber Arrangement in North American market, benefitted Bangladesh as it encouraged the garments exports from developing economies and limited the garments exports from developed countries. In 2017, industry had adopted the green standards, US Green Building Council, there were 20 gold, 13 Platinum and 5 silver-certified RMG factories. 78 factories were in the certification process.

## Legal and Institutional Framework

### *Textile Policies in Pakistan*

The textile policies 2009-2014 and 2014-19, aimed for ambitious export targets i.e. 25 billion and 26 billion. Critically speaking, the textile policies underperformed due to non-implementation of the announced support measure. During 2009-2014, energy shortages crippled the industrial operations. There was inefficiency of the refund system and delayed. The exporters kept operating on tight margins which impacted the productivity, employment and foreign exchange earnings.

### *Pakistan: Textiles and Apparel Policy 2020-25*

The policy aimed to provide conducive and enabling business environment for textile sector, increasing share in international market by trying to boost the value-added exports. The priority shall be given to SMEs in infrastructure development and better-quality control. Compliance to the global standards of sustainability will be given due importance. New avenues for e-trading for small enterprises would be explored. Further, the domestic market share shall also be enhanced through import substitution support. Financing the needs of exporters is a major challenge. The long-term finance facility for technology upgradation and brand development and acquisition funds would be focused upon. The policy 2020-2025 met with implementation problems.

Without the reflection and accommodation in the Annual Budget, the funds and financing for textile exporters, the claim of facilitation remained largely an unfulfilled promise. The stream of funds under this policy were available in the first two years which resulted in the highest textile exports of Pakistan i.e. \$19 billion in 2022. Additionally, a dialogue platform was established under this policy, to engage all stakeholders like SMEs, APTMA, TDAP, PRMGFA and Large-Scale Manufacturers, to discuss about issues and challenges under national Export Development Board, headed by Prime Minister of Pakistan.

### *Bangladesh: Textile Act, 2018*

The act came into effect in October, 2018. It brought the entire textile and clothing sector under the government control, to address the sectoral challenges, promote quality assurance and improve institutional coordination. A textile board has been established under the Ministry of

Textiles and Jute for strategic oversight and facilitate the research, innovation and skills development. Bangladesh has always attracted the foreign direct investment due to cheap labour. The act further intends to strengthen the investment in spinning, weaving, dyeing and garment sectors. The act met with implementation delays due to bureaucratic procedures and funding constraints. The industry associations were critical of the act as it did not engage the stakeholders. Several functions of the Textile Board overlap with the existing ministries which led to confusion and inefficiencies. The Act was criticized for neglecting the Small and Medium Enterprises. This act was fundamentally adopted to ensure Occupational Safety, in response to the Rana Plaza collapse incident in 2013 which raised hue and cry among the international clients.

### *Overview of Socio-economic Conditions*

**Table 3**

*Socio-economic Indicator*

| Category            | Indicator                            | Pakistan    | Bangladesh  |
|---------------------|--------------------------------------|-------------|-------------|
| Human Development   | HDI Rank (UNDP)                      | 165         | 130         |
|                     | Literacy Rate                        | 62.3%       | 74.9%       |
|                     | Mean Years of Schooling              | 4.4         | 7.4         |
|                     | Population living below poverty line | 21.9%       | 24.3%       |
|                     | Life Expectancy                      | 66.4        | 73.7        |
|                     | Rate of unemployment                 | 6.3%        | 4.5%        |
| Economic Indicators | GDP (Billion USD)                    | 374         | 437         |
|                     | Per capita income                    | \$1680      | \$1885      |
|                     | Economic Growth rate 2024            | 2.38%       | 5.8%        |
|                     | Exports                              | 30.67       | 67          |
|                     | Imports                              | 54.79       | 88          |
| Demography          | Population                           | 250 million | 175 million |
|                     | Population growth rate               | 1.93%       | 1.21%       |
|                     | Birth rate per thousand women        | 27          | 16.066      |
|                     | Population < 14                      | 46 million  | 25 million  |

## Results

### Comparison of Pakistan and Bangladesh Textile Industry

**Table 4**

*Industrial Outlay of Pakistan and Bangladesh Textile Industry*

| Sector                                | Bangladesh | Pakistan |
|---------------------------------------|------------|----------|
| Spinning Mills                        | 519        | 477      |
| Weaving Mills                         | 60         | 549      |
| Dyeing, Printing, and Finishing Units | 317        | 731      |
| Ready-Made Garment (RMG) Factories    | 4,500      | 2,550    |
| Power Looms                           | 1,065      | 400,000  |
| Shuttleless Looms                     | 51,800     | 28,500   |

The mapping of textile units illustrates the concentration of textile units in and around Faisalabad, Karachi, Sialkot and Lahore. In Bangladesh the textile industry is established Dhaka, Ghazipur, Narayanganj, Chattogram, Comilla and Khulna.

Bangladesh's Ready-made garment (RMG) sector accounts for 85% of total exports of the country. The industry has more than 4560 garment factories. The main trade associations are BGMEA (Bangladesh Garment Manufacturers and Exporters Association) and BKMEA (Bangladesh Knitwear Manufacturers and Exporters Association).

**Table 5**

*Bangladesh: Textile Cities and their Specialization*

| City                       | Specialization              | Description                                                                                         |
|----------------------------|-----------------------------|-----------------------------------------------------------------------------------------------------|
| Dhaka                      | Knitwear,<br>Woven Apparel  | Central hub; majority of large factories concentrated here; close to government offices and buyers. |
| Chattogram<br>(Chittagong) | Woven<br>Garments,<br>Denim | Second-largest city; home to Chattogram Export Processing Zone (EPZ), near major seaport.           |
| Gazipur                    | Knitwear                    | Major production area, close to Dhaka, known for T-shirts, polo shirts.                             |
| Narayanganj                | Knitwear,<br>Hosiery, Dyes  | Historically known as the "Manchester of the East" for its                                          |

| City                 | Specialization     | Description                                                |
|----------------------|--------------------|------------------------------------------------------------|
| Mymensingh           | Expansion Zone     | textile mills.<br>Emerging area for new textile factories. |
| Mirsharai (new zone) | Apparel Production | Part of the new BEPZA Economic Zone, near Chattogram port. |

**Note.** Bangladesh Garment Manufacturers and Exporters Association ([n.d.](#)).

Bangladesh's apparel sector is overwhelmingly dominant in its economy as compared to Pakistan's more diversified export base. This indicates a deeper vertical integration in Pakistan's industry. Punjab and Sindh provinces account for 98% of large factories. Pakistan's textile and apparel industry is its largest manufacturing sector. It contributes to 30% of manufacturing value-added. There are more than 6000 firms operating in the sector. The export value is largely contributed by the large-scale manufacturers.

**Table 6**

*Composition of Pakistan's Textile Industry*

| Firm size        | Number of units | % of total exporters | % of total export value |
|------------------|-----------------|----------------------|-------------------------|
| Large            | 271             | 4.5%                 | 81.2%                   |
| Small and Medium | 5705            | 95.5%                | 18.8%                   |
| Total            | 5976            | 100%                 | 100%                    |

**Table 7**

*Pakistan: Textile Cities and their Specialization*

| City       | Specialization                            | Description                                                                |
|------------|-------------------------------------------|----------------------------------------------------------------------------|
| Karachi    | Apparel, Knitwear, Home Textiles          | Largest port city; major export hub; houses massive production facilities. |
| Lahore     | Fashion Apparel, Denim, High-end Garments | Houses premium fashion brands and design houses.                           |
| Faisalabad | Yarn, Fabric, Knitwear                    | Largest concentration of textile mills and weaving units.                  |
| Multan     | Home Textiles,                            | Known for bed linens and towel                                             |

| City       | Specialization                 | Description                                                             |
|------------|--------------------------------|-------------------------------------------------------------------------|
| Sialkot    | Towels                         | manufacturing.                                                          |
|            | Sportswear, Technical Garments | Specialized in sports garments and accessories (e.g., soccer uniforms). |
| Gujranwala | Hosiery, Towels                | Smaller but important hosiery cluster.                                  |

The interviews with key leaders in the industry identified four common themes.

- The largest number of respondents saw policy inconsistency as the biggest hurdle for the competitiveness of Pakistans textile industry. The key uncertainty factors were tax changes, energy tariff changes and export incentive scheme changes.
- The respondents pointed out that the success of Bangladesh is not merely because of low labour costs but also due to policy continuity, export facilitation and predictability of investment climate.
- Industry stakeholders pointed out that todays world is witnessing increasing demand growth in these segments and Pakistan is still totally reliant on cotton-based products and required diversification into these segments to meet the demand.
- The need to enhance research institutions, increase cotton productivity and expedite technology modernization to ensure export growth.

The findings are generally consistent with the trends found in the secondary data analysis and further reiterate the need for structural reforms in the textile industry in Pakistan.

### **Infrastructure, Transportation and Logistics Overview**

Pakistans overall performance on the Logistics Performance Index (LPI) was 2.42 and delays in transportation and logistics availability were the lowest. Bangladesh scored 2.6. On the composite measure (LPI), Bangladesh performs slightly better than Pakistan, with a score ranging from 1–5, with higher scores being better. The port infrastructure in Bangladesh includes Chattogram and Dhaka ports. Both ports lack the deep-sea capacity. The median turnaround time is three days. Key ports in Pakistan are Karachi port and port Qasim, with Gwadar port in early

operational phase. Port Qasim caters to a major volume of Pakistan's containerized exports and is preferred due to its close proximity to SEZs. The median export delay is 5.1 days and import delay is 6.8 days, longer than the regional competitors with China and Vietnam at 0.8 days. This is due to port congestion, inefficient cargo handling processes, manual documentation, customs processing inefficiencies, inland transport delays (poor roads). Whereas Bangladesh has moved to 24-hour custom clearance policy, digitized documentation, dedicated garment handling facilities and proximity of ports to production hubs. Logistics costs are higher in Bangladesh due to imported raw material. Bangladesh has introduced National Logistics Policy 2024 and Matarbari deep-sea port is expected by 2026. Pakistan is set to use the Gwadar deep-sea port but security issues persist

### Production Capacity

Pakistan is the fifth largest producer of cotton with 1.3 million farmers out of five million cultivating cottons on 15% of the cultivated area in Pakistan. Contributes 0.8% to Pakistan's GDP and accounts for 51% of foreign exchange earned by the country. The production fell to less than 9 million bales in 2023. It further declined to 5.4 million bales, a 33% decline in production in 2024 (Abbas & Halog, [2021](#)). Major reasons for this decline are reduced acreage, heatwaves and pest infestations. There was 10-15% decline in acreage in Punjab (Khalid Mehmood, Pakistan Kissan Ittehad). There is a considerable need to introduced research-oriented measure to increase the yield per acre (M.N. Shah, Sindh Abadgar Board).

**Table 8**

*Metric of Bangladesh and Pakistan*

| Metric                        | Bangladesh          | Pakistan               |
|-------------------------------|---------------------|------------------------|
| Fabric Manufacturing Capacity | 9.15 billion meters | 4.37 billion sq meters |
| Finishing/Processing Capacity | 5 billion meters    | 4 billion sq. meters   |

Pakistan The spinning capacity is 1550 million kgs of yarn, whereas the weaving capacity is 4368 million square meters fabric, finishing capacity is 4000 million square meters and apparel of approximately one billion items. 11.3 spindles, 3 million rotors, 18000 knitting machines. Whereas Bangladesh has 13.8 spindles, third highest after China and India. Cumulative shipments of large circular knitting machines to Bangladesh between 2013 and 2023 totaled 14,000, about half the number of shipments

to India and about the same number as to Vietnam.491 Bangladesh received the second-largest number of shipments of flat knitting machines between 2013 and 2023 (102,620 machines), behind China, which received 648,061 shipments during China received the most shipments by far with almost 154,000 large circular knitting machines, illustrating the scale of fabric production in China. (International Textile Manufacturers Federation [ITMF], [2024](#))

### ***Vertical Integration and Raw Material Dependency***

Bangladesh is heavily dependent on imports for raw cotton. Whereas Pakistan has remained self-sufficient to a great extent with Industrial demand of 13 billion bales and domestic production staying around 10 million bales. However, the low production in 2024 underscores the need to enhance the capability in man-made fiber (MMF). Bangladesh, too imports the man-made fiber. In Bangladesh, 80% of knit fabric and 40% of woven fabric is sourced domestically (Bangladesh Garment Manufacturers and Exporters Association [BGMEA], [n.d.](#)). Pakistan has large-scale local spinning, weaving, dyeing especially denim and fleece. Pakistan has a natural advantage in cotton and local spinning capacity which gives it a competitive edge for cotton-based products.

### **Export performance**

**Table 9**

*Export performance 2022-2024*

| Country    | 2022    | 2023<br>(bn) | 2024<br>(Bn) | % total<br>export | Destinations        | World<br>ranking |
|------------|---------|--------------|--------------|-------------------|---------------------|------------------|
| Pakistan   | \$19.33 | 16.5         | \$16.66      | 54.29%            | USA, UK,<br>Germany | Top 15           |
| Bangladesh | \$58.9  | \$48.9       | \$38.48      | 85%               | USA, EU,<br>Canada  | Second           |

**Note.** Pakistan Bureau of Statistics ([2024](#))

### **Evaluation of the Textile Value Chain: Sectoral Analysis**

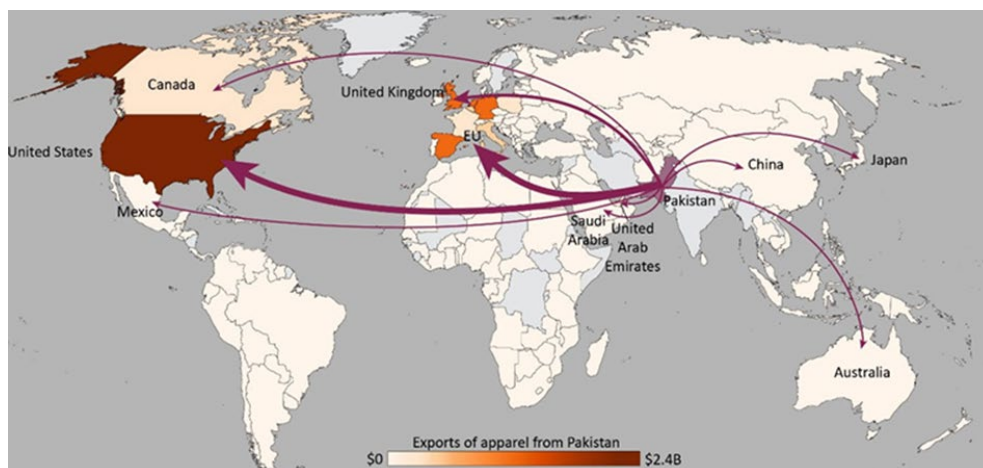
There is a need to analyze the specific areas of exports with HS codes related to textile based on figures of the year 2023-2024.

**Table 10***Comparative Evaluation of Textile Value Chain (Pakistan as Base)*

| HS Code | Product Category | Pakistan Exports (US\$ Mn) | Bangladesh Exports (US\$ Mn) | Bangladesh vs Pakistan (%) |
|---------|------------------|----------------------------|------------------------------|----------------------------|
| 52      | Cotton           | 6700                       | 907                          | -86.5%                     |
| 54      | MM Filament      | 1770                       | 727                          | -58.9%                     |
| 55      | MMF              | 1920                       | 550                          | -71.4%                     |
| 61      | Knitted Apparel  | 85                         | 26,800                       | +31429%                    |
| 62      | Woven Apparel    | 148                        | 22,600                       | +15170%                    |
| 63      | Home Textiles    | 59.5                       | 1200                         | +1917%                     |

The comparative analysis shows that Pakistan has a good competitive position in the upstream segments of the textile, cotton (HS-52), man-made filament (HS-54) and man-made fibres (HS-55) etc. with export values which are significantly higher than those of Bangladesh. Bangladesh however, fares much better than Pakistan in the downstream value-added products most importantly, knitted apparel (HS-61), woven apparel (HS-62), and home textiles (HS-63). Thus, more value addition, apparel production, branding and linking to global chains of retail supply would be key to realize export growth in the future.

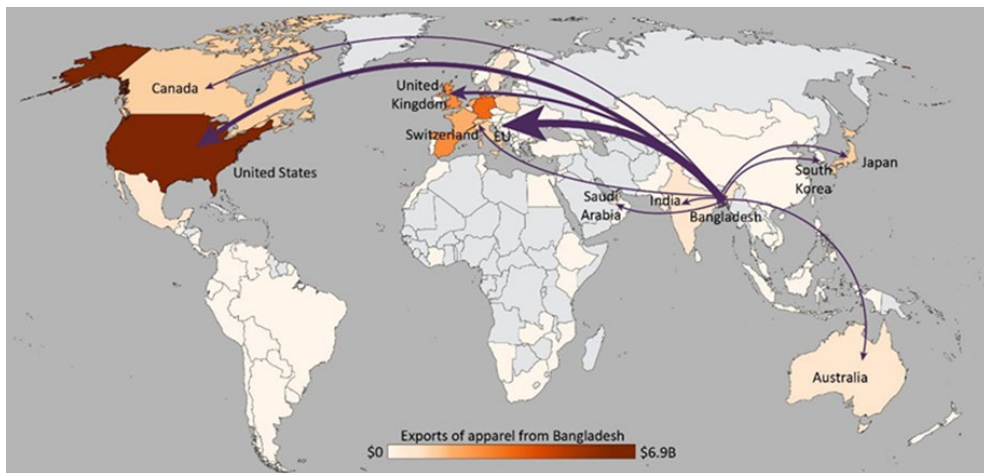
### Import and Export Destinations

**Figure 1***Export Destination Map – Pakistan*

In 2023 Pakistan's textile imports valued at \$4.47 billion mainly from countries like China, USA, Brazil, Thailand and Indonesia (Pakistan Bureau of Statistics, [2024](#)). Whereas the imports of Bangladesh valued at 13.8 bn from China, India and Pakistan (United State Department of Agriculture [USDA], [n.d.](#)). Pakistan textile imports comprised of raw cotton, synthetic fiber, silk yarn. In 2021-22, the textile machinery valuing \$621 million were imported. The major products imported by Bangladesh were raw cotton, cotton yarn and fabric.

**Figure 2**

*Export Destination Map – Bangladesh*



**Note.** (United States International Trade Commission [USITC], [2024](#))

## **Labour force and wages**

### ***Industrial Associations for Workers***

There is higher unionization in Bangladesh (11.9%) with Pakistan's unionization rate at 4.1%. It has ratified 36 ILO conventions. The labour conditions became a matter of concern after the Rana Plaza incident, in which around 1100 workers got killed in 2013. There are 1248 labour unions in Bangladesh.

### ***Labour Conditions and Wages***

The introduction of Decent Work Agenda by WTO set standards for fair wages environmental sustainability The average wage rate for textile

worker in Pakistan is relatively better ranging from \$110 to \$180, whereas in Bangladesh it ranges from \$111 to \$130. It is pertinent to point out that wage structure is different in both countries. BGMEA ([n.d.](#)), reported that mandatory safety committee and elected participation committee and a permanent health center are required at every factory with more than 500 workers.

**Table 11**

*Comparative Study of Labour wage and Wage Structure*

| Aspect                      | Pakistan                                            | Bangladesh                                                  |
|-----------------------------|-----------------------------------------------------|-------------------------------------------------------------|
| Minimum Monthly Wage (avg.) | \$115–\$138 (base)                                  | \$111–\$133 (base); ~\$180 total with allowances            |
| Wage Adjustment Frequency   | Annual (by provincial governments)                  | Every 5 years (by law; subject to political delay)          |
| Enforcement Issues          | 50% workers underpaid in informal sector            | Confusion over pay grades; wage theft occasionally reported |
| Employer Cost per Worker    | ~\$170 (with social security and bonuses)           | \$180–\$200 including festival, attendance bonuses          |
| Wage Structure              | Skill-based (Unskilled, Semi-skilled, Skilled) 1–7) | Grade-based (grades 1-7); linked to experience              |

*Note.* Source: BGMEA ([n.d.](#)); industry interviews conducted for this study.

***Size of Workforce and Share of Women in Workforce***

There is discrepancy in the exact figures reported in various reports ranging from 20 million to 25 million people employed in the textile and apparel industry of Pakistan. The sector contributes to 38% of total work force. The females employed in the Pakistan textile industry are about 20% of the textile workforce out of which 92% are engaged in home-based work. The share of women in employment is lowest in South Asia. On the other hand, Labour and Employment Department stated that 5.02 million are employed in the garment and knitwear industry with female share in workforce being 55.57% i.e. 2788616 workers (Minister for Labour Employment, Bangladesh, [2024](#)). Gross value-added per worker is lowest in Pakistan's Textile and Apparel industry at \$ 2 (International Labour

Organization, [2022](#)).

## **Compliance and Sustainability**

### ***Lack of Accreditation and Certifications***

Many textile companies have obtained certifications like ISO 9001, ISO 14001, and Oeko-Tex, which ensures that the products meet international quality and safety standards. However, numerous Pakistani exporters need to send the products to other countries for approval, quality assurance certifications to cater to the international clients. The research and development wing of Lahore Chambers of commerce informed about the missing certification in numerous SMEs and absence of accreditation facilities.

## **Tariff and Trade Agreements**

Bangladesh enjoys as the beneficiary of LDC (Least Developed Country) and attained special entry into the European Union market i.e. duty-free access under the EBA scheme (Everything but Arms). Free markets propagated by WTO have made the global environment extremely competitive. Pakistan has benefitted from EU's Generalized Scheme of Preferences Plus (GPS+), allowing more than 70% of its exports to enter EU with duty or quota limitation. Pakistan and Bangladesh maintain strong trade relations with Middle East with 5% standard import duty. Both countries have had Normal Trade Relations with US before the launch of Protectionist Plan.

## **Foreign Direct Investment**

Bangladesh has received a consistent supply of foreign direct investment. The FDI for the year 2023 for the textile and garment sector amounts \$1.22 billion, making it one of the top recipients of foreign investment. Major contributors to FDI in Bangladesh are South Korea, Hong Kong, China and India. On the other hand, the FDI in Pakistan has remained inconsistent over the years. It received \$6 million in 2018 for textile industry (CEIC Report, 2024). In 2024, the foreign investment was - Rs. 5.1million (outflow). For the current year, there is a negative flow of cash, highlighting the failure of Pakistan to attract any foreign investment for textile and clothing industry (SBP, 2025). The last Greenfield investment in Pakistan was made for \$52.6 million in 2018, whereas 5 greenfield investments, amounting to \$100 million were made in Bangladesh during

2020-2023 (FDI Markets, [n.d.](#))

**Technological advancement and R&D**

Level of automation and Innovation with R&D have remained limited in Pakistan. The expenditure on R & D is less than 1 % of GDP in Bangladesh and Pakistan. R & D has remained government-driven in Pakistan, with limited industrial investment. The G7 countries spend around 2-3% of GDP on research and development. In absolute numbers, GDP gains \$74.22 million for every additional \$1 million invested in R & D (Akram et al., [2022](#)).

**Table 12**

*Comparative Study of Technological Advancement*

| Aspect                   | Bangladesh                                                                                                           | Pakistan                                                                                                 |
|--------------------------|----------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|
| Automation & Smart Tech  | Rapidly growing adoption of AI, IoT, ERP systems in large firms, particularly in export hubs like Dhaka and Gazipur. | Leading firms are investing in AI-driven forecasting, digital sampling, and ERP, but adoption is uneven. |
| Tech-Driven Productivity | Enhanced via LEED-certified green factories with smart energy and water monitoring.                                  | Some large mills use modern machinery, but small/medium firms use outdated machinery.                    |
| Government Support       | Limited direct government programs, but donor-led and buyer-driven initiatives encourage adoption.                   | Government-backed digitization incentives under the Strategic Trade Policy Framework (STPF).             |
| Digital Supply Chain     | Growing use of digital platforms for order tracking, sampling, and planning.                                         | Digital integration is advancing in vertically integrated firms, especially for denim.                   |

**Ease of Doing Business**

This underscores the importance of maintaining supply chain management to meet export commitments in time. Pakistan ranks 108<sup>th</sup> out of 190 countries in the ease of doing business index. Bangladesh ranks 168<sup>th</sup> on the index (Arvis et al., [2023](#)). A lower rank number indicates an easier



regulatory environment; Pakistan therefore ranks ahead of Bangladesh on every ease-of-doing-business sub-indicator listed above, although this has not translated into proportionately higher foreign direct investment (see Foreign Direct Investment, below). The ranking of Pakistan improved from 136<sup>th</sup> position due to better regulatory regime for business operations. Policy initiatives in this regard are much needed to attract the foreign and domestic investment.

**Table 13**

*Indicators for Pakistan and Bangladesh*

| Indicator                   | Pakistan     | Bangladesh   |
|-----------------------------|--------------|--------------|
| Ease of Doing Business Rank | 108          | 168          |
| Starting a Business         | Ranked 72nd  | Ranked 131st |
| Getting Electricity         | Ranked 123rd | Ranked 176th |
| Registering Property        | Ranked 151st | Ranked 184th |
| Enforcing Contracts         | Ranked 156th | Ranked 189th |

**Note.** rankings are out of 190 economies assessed by the World Bank; a lower rank number indicates a better, easier regulatory environment.

### **Textile Research Institutes and Textile Engineers**

BSc in textile is offered in numerous institutions like Mangrove Institute of Science and Technology, Khulna. Bangladesh university of textiles (BUTEX) with specialization in textile engineering. Mawlana Bhashani science and Technology, Khulna University of Engineering and Technology, National Institute of Textile Engineering and Research (NITER) is textile school in Dhaka, STEC. Bangladesh Garment Manufacturers and Exporters Association (BGMEA) university of fashion and technology in 2000. Offers an MBA program in Apparel Merchandizing and other related fields like Knitwear Manufacture and Technology, Apparel manufacturing and Technology (Sikder, [2019](#)). Labour in Pakistan is not tech-savvy. However, there are textile engineers being produced by national Textile University, Faisalabad and Textile Institute of Pakistan, Karachi. There is no deficiency in term of textile education. The University of Agriculture has produced graduates with expertise in development of synthetic fiber. PRGMEA has trained a small number of workers in advanced textile engineering and NAVTEC offers several textile courses, as well.

### Cost of Energy Supply

The rates of electricity in Pakistan are the highest in the region. This raises the cost of production. The price in Pakistan is \$0.135-\$0.166 per KWh. Whereas the electricity price in Bangladesh has remained \$0.087 KWh. The Bangladesh government supported the industry through subsidies and the grid infrastructure is more efficient. In Pakistan, industry is heavily reliant on electricity and gas, and the price of energy is double the price in the neighboring countries. India and Bangladesh have diversified streams of energy. Bangladesh had lowest electricity price as compared to China (\$0.089), USA (\$0.145) and India (0.121) (Khan et al., [2020](#)). However, the recent increase by 33% in gas tariffs implemented by the Bangladesh Energy Regulatory Commission. Electricity prices have also been raised by 8.5%, standing at \$0.10 per kwh. This might erode the pricing edge of Bangladesh textile industry. In April 2025, the gas prices in Pakistan and Bangladesh stand at \$12.46 and \$10.30 per MMBtu, respectively.

### Gap Analysis

It is important to draw distinction and identify the gaps in the practices of most successful global players with the practices of Bangladesh and Pakistan textile industries.

**Table 14**

*Gap Analysis: Best Practices in Textile and Apparel Production*

| Indicator              | Best Practices                                                   | Pakistan and Bangladesh                                                                                  |
|------------------------|------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|
| Sustainable Production | US: Low-impact dyes- and renewable energy e.g. (Levis)           | Pakistan: limited adoption of sustainable processes, less eco-friendly                                   |
|                        | China: water recycling & energy efficiency                       | Bangladesh: Adopted Global Organic Textile Standards (GOTS), hosts forums like Sustainable Apparel Forum |
|                        | India: organic cotton-farming, eco-friendly processes            |                                                                                                          |
| Circular Economy       | US: clothing take-back programs like North Face                  | Pakistan: operational at a limited level                                                                 |
|                        | India: Recycling hubs e.g. Panipat, second-hand clothing markets | Bangladesh: Emphasis on RMG recycling and circularity                                                    |
| Ethical                | US: Strict labour                                                | Pakistan: about 120 companies                                                                            |



| Indicator                                  | Best Practices                                                                               | Pakistan and Bangladesh                                                                                                           |
|--------------------------------------------|----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| Labour Practices                           | protection laws                                                                              | have adopted initiatives of better labour conditions, participation in International Accord                                       |
|                                            | India: Traceability system to combat child labour                                            | Bangladesh: International Accord brought improvement; serious challenges persist                                                  |
| Certifications And Accreditation           | China: Adoption of OEKO-TEX and ISO certification                                            | Pakistan: certifications growing on global market demand (esp. LSMs)                                                              |
|                                            | India: wide use of GOTS                                                                      | Bangladesh: More than 1500 companies certified (GOTS)                                                                             |
| Innovation And Technology                  | US: smart textile and functional and synthetic fibers e.g. MIT and Nike                      | Pakistan: modern looms increasing, greater investment for automation and innovation needed                                        |
|                                            | China: Automated weaving, dyeing facilities                                                  | Bangladesh: integration of 4.0 technology and digital printing to enhance efficiency                                              |
| Quality Assurance                          | India: testing and standardization labs through govt. support                                | Pakistan: Quality check improved in export firms; SMEs lag in quality, standardization                                            |
|                                            | US: In-house quality checks by brands and 3 <sup>rd</sup> part labs like Intertek, SGS       | Bangladesh: Textile board and testing lab established under Textile Act, 2018; monitor and inspect the quality assurance          |
| Export Performance (2024)                  | China: Top exporter, economies of scale & vertical integration \$301 bn                      | Pakistan: \$16.655 bn; recovering in the current year, with \$9 bn in first 6 months.                                             |
|                                            | US: \$22.6 bn exports                                                                        | Bangladesh: \$38.43 bn; top player in RMG                                                                                         |
|                                            | India: competitive pricing; \$35.9 bn                                                        |                                                                                                                                   |
| Modern Machinery                           | China & US: Modern weaving, knitting and energy- efficient boilers, high speed air-jet looms | Pakistan: Outdated machinery, old rapier looms, old circular knitting machines, old boilers                                       |
|                                            |                                                                                              | Bangladesh: 3 <sup>rd</sup> highest investments in machinery                                                                      |
| Chemical management and effluent treatment | China: ETPs with tertiary treatment, sludge management, ZLD systems                          | Pakistan: Inefficient use of water for washing, limited ETP usage, toxic chemicals used for domestic market, low adoption of ZDHC |

| Indicator | Best Practices                                                                                                  | Pakistan and Bangladesh                                                                   |
|-----------|-----------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
|           | US: Water-less or low liquor dyeing<br>India: Centralized ETP and water recycling systems in its textile cities | Bangladesh: high adoption of OEKO-TEX and green manufacturing, better chemical management |

**Note.** Compiled by the author from ITMF ([2024](#)), BGMEA/BKMEA disclosures, APTMA reports, and corporate sustainability disclosures (e.g., Levi Strauss & Co., North Face) cited individually in the reference list.

### Discussion

#### Emerging Trends in Clothing and Fashion

The world demand is shifting from cotton-rich clothing to synthetic or man-made fibers-based products. The global demand for cotton products witnessed a 6% decrease. Adaptation to the new trends is needed to maintain share in market. The climate change has hit Pakistan, increasing the unreliability of cotton supplies. This might erode Pakistan’s competitiveness of vertically integrated industry. The west has retained its position as the largest market with new markets emerging in Middle East and Africa.

#### Sustainability of Textile Production Processes

Global climate regulations and environmental compliance certifications like OEKO-TEX, ZDHC, GOTS, necessitate significant investments in sustainable practices, posing financial and operational challenges. There is absence of wastewater treatment facility and very small proportion of textile units with operational Effluent Treatment Plants. Bangladesh faces the challenge of large amount (approx. 577,000 metric tons) of textile waste annually, resulting in order cancellations by global buyers. In Lahore, 277 textile units out of 444, do not have effluent treatment facilities. Large Scale Manufacturers have Sludge management plants and all necessary certifications as required by international textile market. Bangladesh has taken lead in environmental compliance certifications and LEED-registered companies.

#### Diversified Energy Portfolio and Cost of Energy

The textile sector in Pakistan is adversely affected by energy shortages. This is mainly attributed to poor planning and improper tactics on part of

the Government. The cost of energy in Pakistan is double the cost in Bangladesh. Similarly, the gas prices have risen to PKR 4,291 per MMBTU i.e. \$15.36. Pakistan has the highest cost of electricity and gas in the region. There is a need to explore other energy alternatives, renewable and more environment-friendly.

### **Unexplored Textile Market Segments**

Pakistan Textile Industry is not prepared to fully tap the market opportunities by diversifying its product range. Market potential for wool has not been meaningfully explored in Pakistan as a value-added segment. The compound annual growth rate for wool is 5.5%, reaching \$25 billion by 2030. Bangladesh has developed its wool processing capabilities, positioning itself to capture a significant share of the high-end woollen garment market. It intends to grow its woollen exports from \$100 million to \$1 billion through partnerships with Australia.

### **Outdated Infrastructure and Technology**

Most of the weaving and knit-wear machines are outdated with minimal automation making design-change process very slow. New design-patterns and knit-structures are not developed. Similarly, the gas boilers in processing units are old and less efficient. Pakistan's inability to modernize the machinery and equipment has led to higher cost of production as compared to Bangladesh. The establishment of Textile Cities also generated mixed results. The preparedness of infrastructural facilities to handle greater number of export order is an important aspect to explore.

### **Inconsistency in Government Support policy**

Key initiatives in textile policy, including investment and technology funds, failed to materialize. Uneven support favoring finished goods alienated yarn processors, while corruption, complex rebate criteria, and political influence diverted state funding to a few select companies. Furthermore, heavy taxation, elimination of tax exemptions and VAT credit facilities, and misuse of authority by tax officials have significantly inflated production costs, harming overall export performance.

### **Rate of interest and cost of financing**

Lofty interest rates and high prices of finished goods have reduced the financing allocation for the Pakistan's textile sector. Financing needs remain unfulfilled. The credit shortfall is around \$ 3 billion. 5 % financing needs

are met through the commercial banking sector. The tight monetary policy has led to difficulty in financing the business. Zero-rating scheme in Bangladesh is a major support for the Bangladesh Textile industry. The mark-up rate in Pakistan and Bangladesh are 13% and 5%, respectively.

### **Liquidity Constraints, tax refunds and IMF's Extended Fund Facility**

All Pakistan Textile Mills Association ([n.d.](#)) urged the authorities to restore SRO 1125, i.e. zero rating for the textile value chain while collecting sales tax on domestic sales at the point of sale. The Export Oriented Sectors should be allowed to open Letters of Credit without hindrance for raw material machinery, spare parts and other items to restore the industry's supply line. Exporters face liquidity constraints due to delays in refunds. The effective rate of taxation has been a major cause of unrest among the textile manufacturers. The withdrawal of the SRO was a part of IMF's Extended Fund Facility conditions. The standard sales tax was imposed. The LSMs have moved to backward integration whereas SMEs struggle to survive.

### **Graduation from Least Developed Country status**

In order to prepare the textile industry, the Bangladesh government has initiated a gradual reduction in export subsidies to comply with WTOs regulations, in anticipation of graduation from LDC status. These changes became effective from July 2024. It is too early to measure the impact of subsidy reduction and energy cost hike. Special incentives for ready-made garments have been lowered from 0.5% to 0.3% and the incentive for products made with local yarn and fabrics have been halved to 1.5%. Similarly, incentives for exports to new markets have decreased from 3% to 2%.

### **Conclusion**

Pakistan's textile and apparel industry faces severe challenges driven by inconsistent policymaking, high production costs, structural inefficiencies and economic stagnation. In past fifteen years, non-implementation of policy proposals has eroded investor confidence and hindered infrastructure upgrades especially in SMEs. The government must address liquidity issues through fund reimbursements, reduce tariffs on inputs, and provide financing for exporters for revival. Uplifting the sector also necessitates resilient supply chains, workforce skill development, modern automation, and local R&D centers. Furthermore, given Pakistan's climate vulnerability, adopting green manufacturing and adhering to international sustainability

compliance must be driven through pro-active governance. A comparative analysis with Bangladesh reveals that while Pakistan possesses strong foundational advantages like domestic cotton production and vertical integration, Bangladesh achieves superior export performance through policy consistency, ready-made garment specialization, and a predictable investment climate. Pakistan requires a stable, long-term policy framework featuring targeted SME support, zero-rating on key imports-exports, and strict fiscal discipline.

## **Recommendations**

### ***National Productivity Enhancement Program***

Active engagement of the industry to reduce structural inefficiencies is required. The transformation in LSMs has already been made with regard to automation, modern machinery and infrastructure, and productivity of labour. The domestic investment reached Rs.5 billion during 2021-23, through private sector initiatives (APTMA), to boost exports and create job opportunities. Lean manufacturing and environmentally compliant practices need to be internalized. Investment for key clusters in Faisalabad, Karachi and Lahore for centralized effluent treatment plants, logistics hub and efficient water recycling system.

### ***Global Standards Compliance and Branding***

The RMG Sustainability Council (RSC) was established in 2020, in Bangladesh to ensure safety at workplace through inspections of machinery and equipment, and sustainability of textile industry. There is a need to strengthen and fully operationalize the National Compliance Center established under Ministry of Commerce, on the lines of RSC. It should to aim to facilitate OEKO-TEX, WRAP, GOTS and ISO certifications. The center must offer trainings on market requirements like, EU Green Deal, CBAM, UFLPA., for legal compliance and global competitiveness.

### ***Respond to the Emerging Global Dynamics***

A system should be set up as Global Trade Trend Tracker (GT3) to identify the shifts in tariffs, fashion trends, ESG rules and market access, by tracking the Free Trade Agreements being signed in the region. The unexplored segments of textile industry may be focused upon for instance technical textiles.

### ***Improve Value-addition in Textile Value Chain***

Pakistan must expand the MMF production to regain its competitive edge as vertically integrated country. The raw material base must be diversified. Production process innovation, modern dyeing and finishing units, and design hubs must be created. The aim should be to increase exports of finished products instead of grey fabric. It would be possible by growing long staple cotton and MMF production through research.

### ***Competitiveness: Better and Organic Cotton Market***

Pakistan is the third largest producer of Better Cotton after India and Brazil. There is a rising demand for organic clothing. Pakistan should take advantage of the competitive edge, as well-established supplier for denim and cotton-based products. Exploring the market and offering customized design and product would increase the textile exports.

#### **Author Contribution**

**Amara Athar:** sole author

#### **Conflict of Interest**

The authors of the manuscript have no financial or non-financial conflict of interest in the subject matter or materials discussed in this manuscript.

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