MODERN TRENDS IN THE DEVELOPMENT OF THE GLOBAL TEXTILE INDUSTRY

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Abstract. *The article presents the components of the world textile industry, the pace of development. Also analyzed are current trends in the development of the main products of the world textile industry. The factors influencing the development of the world textile industry are systematized, and the levels of their impact are studied.*

Keywords: *textile, textile industry, world textile industry, yarn, pandemic, fiber, recycling.*

The clothing market, which is a large segment of the textile industry, is developing rapidly. This market is conventionally divided into three segments at the international level: women's clothing, men's and children's clothing market. Each segment consists of a number of sub-segments, consisting of components such as coats, jackets, blazers, shirts, skirts, sweaters, trousers, sportswear and underwear [1].

Overall, the apparel market is expected to grow at a CAGR of 4.1% through 2026. All segments of the clothing market have almost the same growth trend. Between 2020 and 2026, the growth rate of the women's segment is 5.4%, and that of the children's segment is 5.6%, and it is expected to continue at this rate for the next four years. According to forecasts, in 2026, the highest indicator in the male segment will reach 5.7% and reach 705 billion US dollars [3].

The growth of online shopping and the continued expansion of large textile chains is putting upward pressure on price levels in the growing general textile market, which will further encourage consumers to shop at affordable and competitive prices. This is the reason why the global textile industry is showing steady growth.

Another segment of the textile industry, the global home textile market, is also showing a growth trend during the period 2017-2021 (excluding 2020). In 2020, the market value of textile products decreased slightly due to the pandemic. In 2021, the value of the global home textile market will be about 111.38 billion USD. According to forecasts, this segment will achieve a constant increase in its market value over the next five years, reaching 145 billion USD in 2026 [4].

In the world, the corona virus pandemic is still affecting the economy of the countries of the world. As a result of mandatory measures taken by governments against the spread of the pandemic, international trade is falling, supply chains are being disrupted and production is coming to a standstill.

The negative consequences have also affected the global textile and clothing market, and cotton prices have been steadily falling. According to a survey conducted by the International Textile Manufacturers Association (ITMF) among textile manufacturers worldwide, current orders have decreased by 8% due to the pandemic and its consequences. The decline in orders ranged from 4% in South America to 13.3% in Africa. In this survey, respondents highlighted the following issues: ensuring the safety and health of workers, closing international supply chains (especially supplies from China at the beginning of the pandemic), supply shortages and delays in the garment industry, and fears of reduced demand for manufactured goods [5].

Today, the range of products of the global textile and light industry market includes products offered by entities (organizations, individual entrepreneurs and companies) producing fiber, yarn, carpets, sheets and other textile products.

Increasing demand for online shopping is expected to boost the textile manufacturing market. Manufacturers can now sell their products on a larger platform than before, increasing the customer base that geographically drives the growth of the textile manufacturing market. For example, in countries like India, e-commerce portals have boosted sales of traditional garments by giving greater exposure to manufacturers confined to one geography [2].

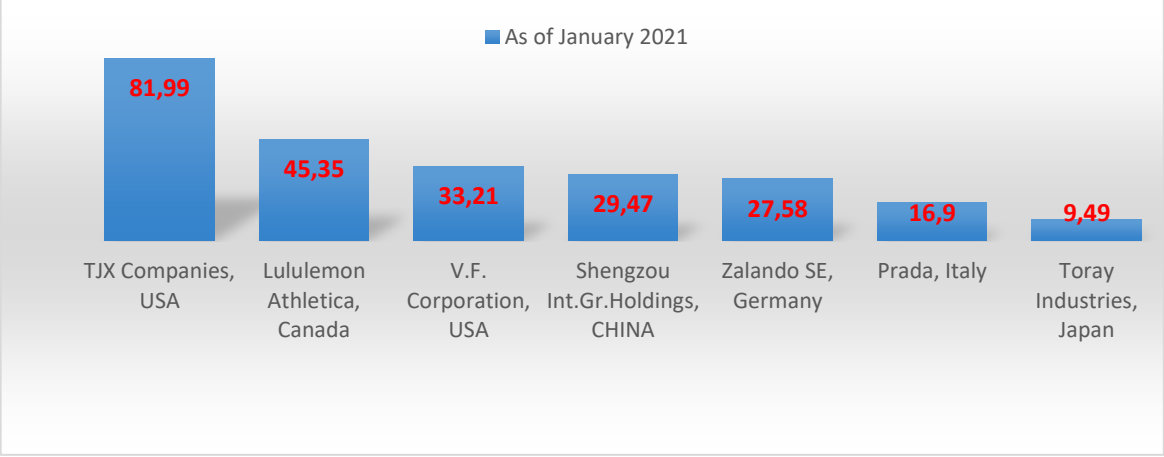
The outbreak of the coronavirus disease (COVID-19) was a major restraint in the textile manufacturing market in 2021, as supply chains were disrupted due to trade restrictions and consumption decreased due to lockdowns imposed by governments worldwide. Actions by national governments to stop transmission have resulted in production shutdowns and reduced economic activity as countries go into "lockdown" and the outbreak has negatively affected business throughout 2021 and into 2021. However, it is expected that the textile manufacturing market will recover from the shock during the forecast period, as this is a 'black swan' event and is not associated with ongoing or fundamental weaknesses in the market or the global economy.

Advances in wireless technologies and increasing demand for connectivity are fueling the demand for smart textiles. Smart textiles are fabrics that have the ability to interact with the environment. They have the ability to respond to physical stimuli such as thermal, mechanical, electrical and chemical sources. Sensors, actuators and fabrics are the main components of smart textiles. Materials used in smart textiles include optical fibers, metals, and conductive polymers. They are widely used in fashion, entertainment, medicine, transportation, sports and fitness, and military. For example, the Citizen Synthetic D-jacket has a wide range of functions such as heart rate monitor, built-in GPS, accelerometer, altimeter [6].

We will look at the sequence of the world's seven leading textile industry enterprises by market value, which, despite the crises created by the coronavirus pandemic, have managed to reorganize their activities online and maintain a stable economic situation, despite the interruption of traditional forms of trade.

Figure 1.3.

The world's top 7 textile enterprises (by market value, billion dollars)



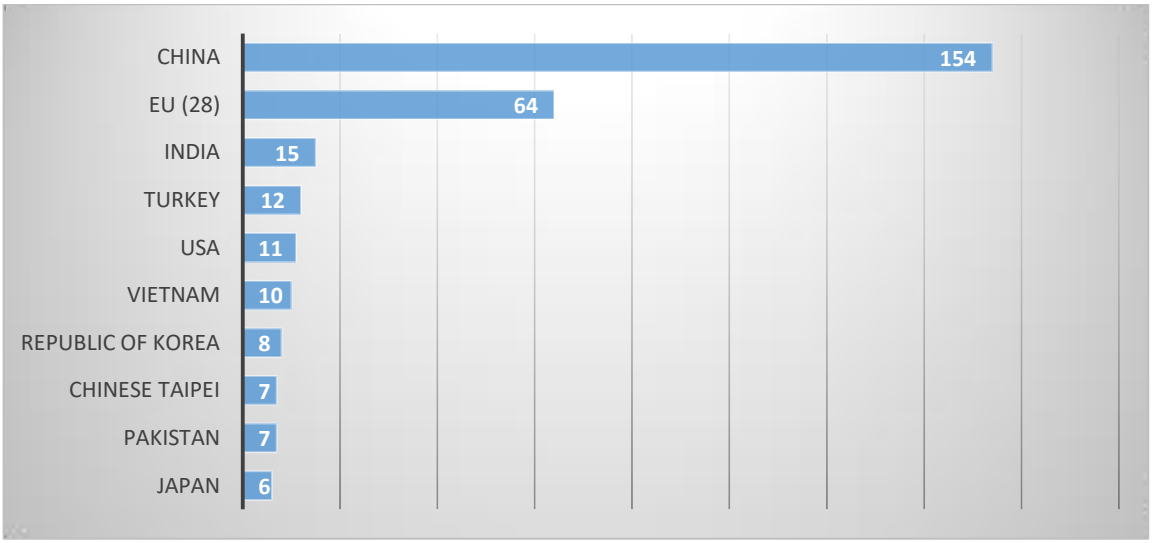
Source: Formed by author based on information from https://www.zippia.com/advice/largest-textile-companies/ . Application date 03.08.2022.

We can see that US companies took the lead in the global textile market (82 and 33 billion dollars), while Chinese and Japanese companies from the Asian continent took the 4th and 7th places in terms of market value (29 and 9 billion dollars) (Figure 1.3). At this point, it should be noted that China is the leader in terms of the share of the textile market, and in this sequence there are Asian representatives such as India, Turkey, Pakistan, Bangladesh, and Vietnam.

China is the largest producer and exporter in the global textile market, with an export turnover of 154 billion US dollars in 2020. Such development of this industrial network is directly related to such factors as cheap production, quality of raw materials, industrial structure, modern high-tech technology and equipment, brand development, internal consumption and optimal organization of the work process in the world market (Fig. 1.4).

Figure 1.4.

Top ten countries exporting textile products in 2020, billion dollars



Source: https://www.statista.com/statistics/236397/value-of-the-leading-global-textile-exporters-by-country/ Accessed 08/06/2022

In general, the world's textile industry has shown stable development dynamics in the last five years. Despite the fact that there are a number of factors that have a negative impact on the development of this industry, the average annual growth rate is 4.1%.

Table 1.3.

Global textile industry development dynamics

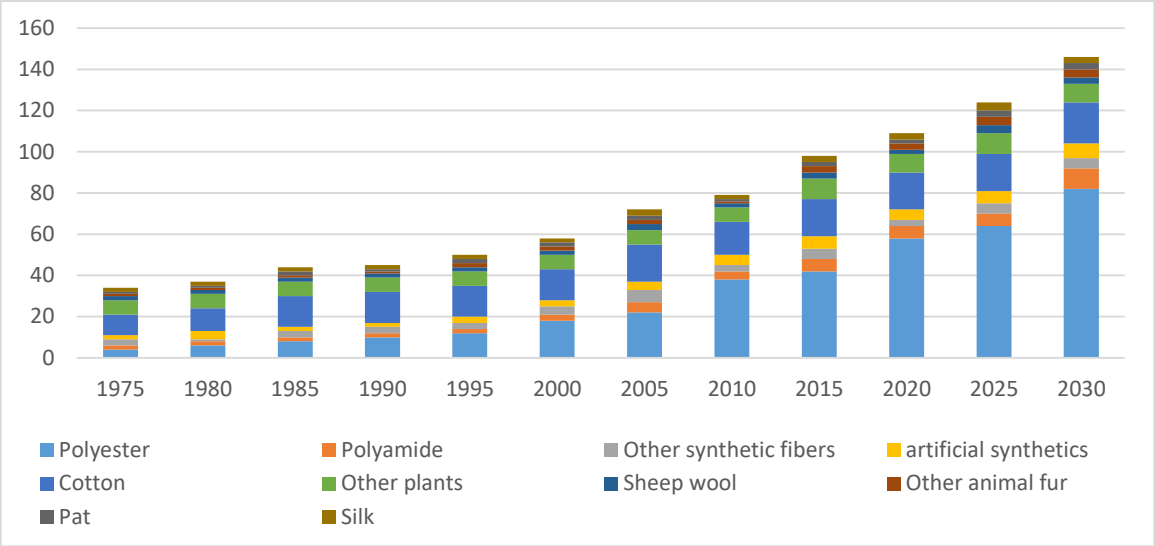
Years	Global textile market value, billion dollars	Growth rate, %
2015	667.5	1.1%
2016	714.0	7.0%
2017	746.1	4.5%
2018	778.2	4.3%
2019	810.4	4.1%
2020	842.6	4.0%

Source: https://shenglufashion.com/2017/06/06/market-size-of-the-global-textile-and-apparel-industry-2015-to-2020/ Accessed 08/06/2022

In 2015, the value of the world textile industry market increased by 1.5% compared to last year and amounted to 667.5 billion dollars (including 83.1% of fabric and 16.9% of fiber). The growth rate of the textile market between 2011 and 2015 was 4.4%. The Asia-Pacific region accounted for 54.6% of the world textile market in 2015, and Europe for 20.6% (Table 1.3).

Figure 1.5.

Dynamics of global fiber production by composition (million tons)



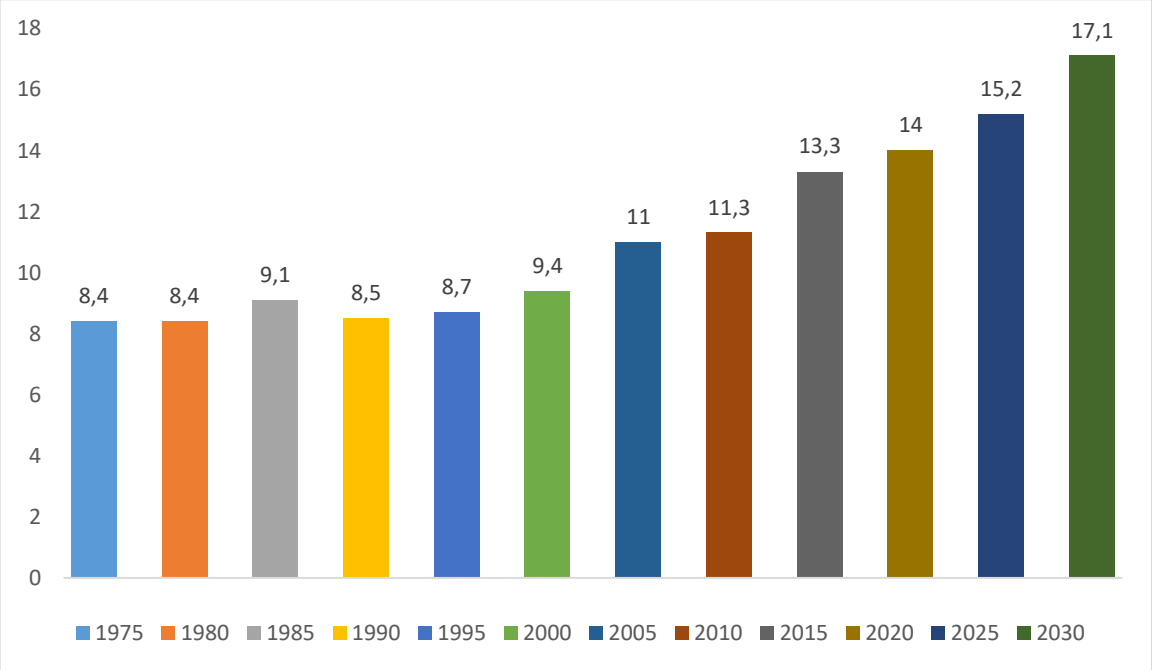
Source: Preferred Fiber & Materials Market Report 2021.

https :// textileexchange . org / wp - content / uploads /2021/08/ Textile - Exchange _ Preferred - Fiber - and - Materials - Market - Report _2021. pdf Application date 06.08.2022

the volume of fiber production in the world, which suffered a lot due to the COVID-19 pandemic, in 2019 was 111 million. 109 million per ton in 2020. decreased to tons. World clothing retail in the market significant decline with compared to this relatively small is a decrease . As the main reasons for this, the pandemic cotton season at the beginning of the dry season already hot to the stage entrance , clothes in the market of sales low partially medical such as field and hygiene products another in segments high sales with we can explain it with covered league . The high production volume in the textile industry continued at a great pace, first of all in China. During the last 20 years, fiber production increased to 58 mln. in 2010. tons to 109 million tons in 2020, almost doubled. Although it is not yet known how the pandemic and other factors will affect future development, by 2030, the volume of the textile market is expected to reach 146 million tons and increase by another 34% (Figure 1.5).

Figure 1.6.

Production volume dynamics by global fiber content (capita/kg)



Source: Preferred Fiber & Materials Market Report 2021.

https :// textileexchange . org / wp - content / uploads /2021/08/ Textile - Exchange _ Preferred - Fiber - and - Materials - Market - Report _2021. pdf Application date 06.08.2022

Global fiber production per person has increased from 8.4 kilograms in 1975 to 14 kilograms in 2020. As the main reason for this almost two-fold growth, we can indicate the rapid growth of the population on the planet Earth and, accordingly, the intensive increase in the demand for textile products (Fig. 1.6).

Another important point is that the increase in global fiber production has a significant impact on people and the overall state of the planet. Such growth requires additional land, water, labor, animals, use of chemicals, and large amounts of other resources. Guidelines are being developed on the need for more responsible use of resources, the introduction of recycling, reuse, remanufacturing, and the gradual reduction of production of products from primary raw materials and the need to separate primary resources from consumption in the production process. However, the scale and speed of work in this direction is not yet at the level of demand, and additional efforts and resources should be involved.

At this point, we consider it appropriate to form their classification based on the nature of the factors influencing the development of the global textile industry.

Factors affecting the development of the global textile industry can be conditionally divided into two [3]:

1. Controllable factors;
2. Uncontrollable factors.

Table 1.4.

Factors affecting the development of the global textile industry

No	Controllable (internal) factors	Uncontrollable (external) factors
1.	Product	Structural adjustments
2.	Plant and equipment	Natural resources (raw materials, climate)
3.	Technology	Government and infrastructure
4.	Materials and energy consumption	

5.	The human factor	
6.	Work methods	
7.	Management style	

Let's take a closer look at each factor below:

Controllable (internal) factors:

1. Product factor: refers to how well the product meets production requirements in terms of productivity, evaluated by product utility. The cost benefit factor of a product can be increased by increasing the profit for the same cost or by reducing the cost for the same profit.

2. Plant and equipment: they play an important role in increasing productivity. Increased plant availability through proper maintenance and reduced downtime increases productivity. Productivity can be increased by paying proper attention to usage, age, upgrades, cost, investments, etc.

3. Technology: Innovative and latest technologies greatly increase efficiency. Automation and information technology help improve material handling, storage, communication systems, and quality control. Various aspects of technological factors to be considered include:

- The size and capacity of the plant,
- Timely delivery and quality of input materials,
- production planning and control;
- Repair and maintenance;
- Waste reduction;
- Efficient material handling system.

4. Material and energy consumption: Efforts to reduce material and energy consumption significantly increase efficiency.

- Quality material and choosing the right material.
- Waste and Waste Control.
- Effective inventory control.
- Development of sources of supply.
- Optimum energy use and energy saving.

5. Human Factors: Productivity largely depends on human skills and competence. The ability to work effectively is governed by various factors such as employee education, training, experience, etc. Employee motivation affects productivity.

6. Work methods: Improving work methods (methods) improves labor productivity, work learning and industrial engineering techniques and training are areas that improve work methods, which increases labor productivity.

7. Management style: This affects organizational design, communication, policies and procedures in the organization. A flexible and dynamic management style is the best approach to achieve high productivity.

Uncontrollable (external) factors:

1. Structural Adjustments: Structural adjustments include economic and social changes. The following economic changes will significantly affect:

- The shift of employment from agriculture to manufacturing industry,
- Technology import and
- Industrial competitiveness.

- Social changes such as women's participation in labor, education, cultural values, and attitudes are among the factors that play an important role in increasing production efficiency.

2. Natural resources: labor, land, and raw materials are important for productivity.

3. Government and infrastructure: Government policies and programs are important to the productivity practices of government agencies, transport and communication capacity, and fiscal policy (interest rates, taxes) has a greater impact on productivity [7].

Although the processing capabilities of synthetic fibers are high, the existence of a number of environmental problems in their processing and remanufacturing shows that on average their production volume should not exceed 15% of the total fiber production.

Despite of there is a high potential for reducing production costs in the global textile industry, there are still many things that need to be done in this direction. In the course of the research work, we will study ways to reduce production costs in textile industry enterprises in our country without harming the environment.

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