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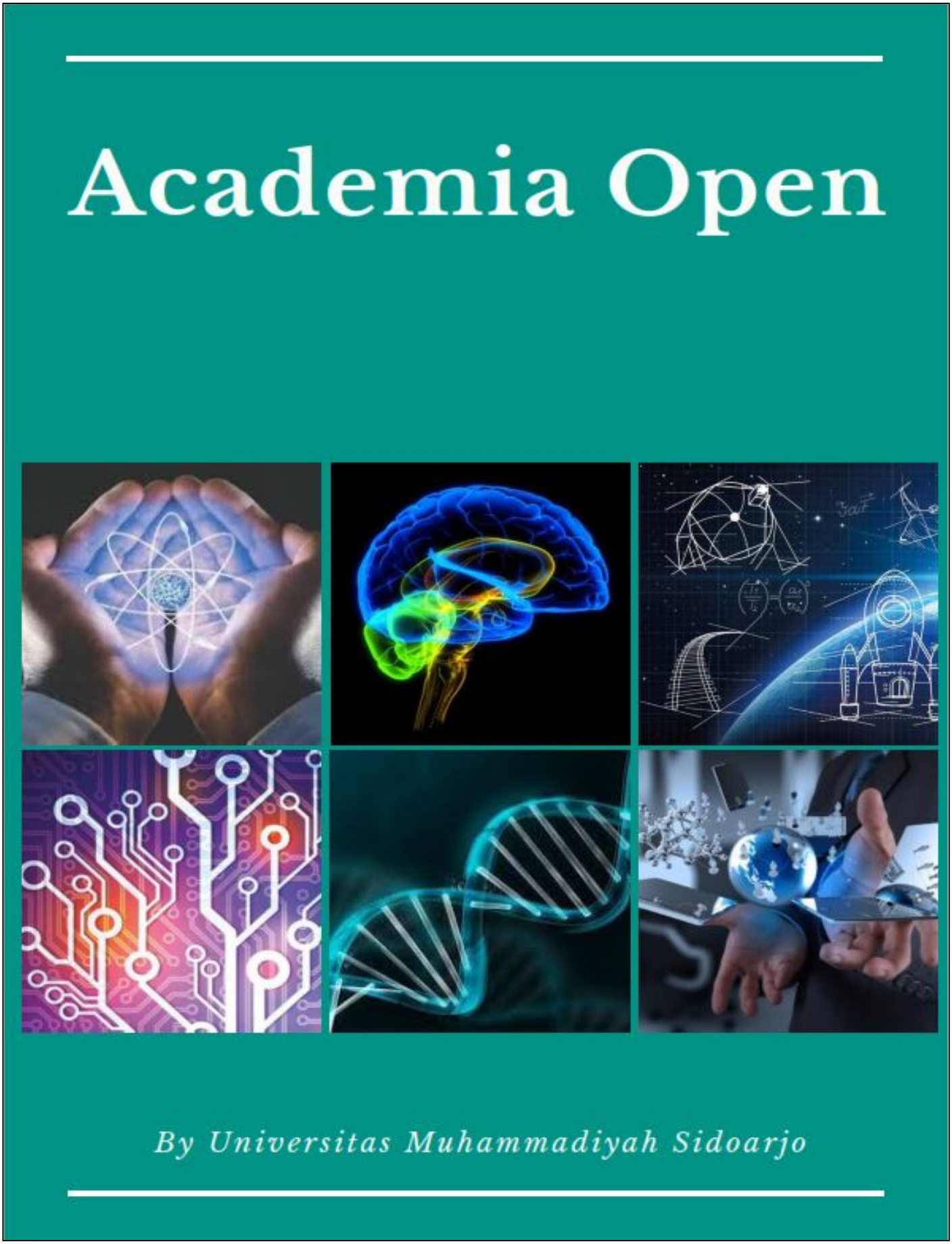

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Developing Cost-Effective Production in Uzbekistan's Textile Industry

Mengembangkan Produksi Hemat Biaya di Industri Tekstil Uzbekistan

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Abstract

This article analyzes the textile industry in Uzbekistan and identifies weaknesses such as outdated machinery, lack of qualified personnel, and low levels of specialization in textile production. The research employs scientific study, comparative comparison, statistical data analysis, and economic comparison to propose solutions such as developing training systems for personnel and introducing modern equipment. Results show a reduction in imports and localization of production, leading to the production of more than 250 types of products and a decrease of 93% in imported products. The implications of this research are relevant to the development of Uzbekistan's textile industry and its economic growth.

Highlights:

- The textile industry is essential to Uzbekistan's economy.
- Localization of production reduces imports and increases production.
- Developing personnel and introducing modern equipment are crucial for the industry's growth.

Keywords: Uzbekistan, Textile Industry, Cost-Effective Production, Localization, Personnel Development.

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Introduction

The textile industry plays an important role in the economy of Uzbekistan. This sector is central to the production of industrial products, because this sector produces a wide range of consumer goods, which in turn saturates a large part of the market. In addition, the industry provides the republic with a large number of jobs, including the employment of mainly women in this industry, which allows maintaining the demographic balance in industrial regions.

Uzbekistan currently has a large and multi-faceted textile industry. The share of the textile industry in the republic's gross domestic product is 4.8%, 25% of the industrial output and 13% of the production capital belong to this sector. At the same time, 32% of the republic's industrial workers work in it. Today, the Association of the Republic of Uzbekistan "Uztoqimaliksanoat" includes 410 textile enterprises, 10 machine-building enterprises, 1330 sewing-knitting enterprises, as well as 91 cotton-textile clusters, "Eastern clothing" design center, Advertising and marketing agency, "Uztoqimalikexport" foreign trading company, "Textile Brok" company for cotton fiber sales, as well as "Engilsanoatqurilish" companies, which carry out design and construction works of textile enterprises, are operating.

A rich base of raw materials (cotton, wool, coal, oil, gas, etc.) for the development and supply of all sectors of the textile industry of Uzbekistan, as well as sufficient conditions (natural-climatic, territorial and labor resources) for the rapid development of the economy. has the textile industry of our republic been developing at a high race?

The textile industry occupies one of the most important places in the republic's economy, it is one of the main sectors producing consumer goods (sewing products, fabric and gauze and knitted products), which are the most important element of the market.

Literature Review

Today, one of the main tasks facing the textile industry is to reduce the cost of production due to the economical use of production resources, increase the financial and economic stability of the enterprise, and ensure competitiveness.

Based on the existing theories on the organization of lean production in the textile industry, we focus on the indisputable principles of lean production within the framework of the research of the current situation. The content of these principles can be divided into the following classical groups according to the analysis:

1. Principles of improvement according to Ed. Deming [1];
2. Lean production principles according to J. Vumek and D. Jones;
3. Showed the existence of Toyota principles of business from J. Liker.

D. Liker said that "lean production" is a method, the task of which is to involve all employees in the optimization of processes. The purpose of engagement is to achieve continuous improvement and increase efficiency by effectively developing and realizing human potential based on mutual respect between owners, management and employees.[2]

D. Vumek and D. Jones stated that "lean production" is a management concept created at the Toyota Motor Corporation and is based on the desire to eliminate all types of losses without deviation. Within the framework of the concept, it is envisaged to involve every employee in the process of business optimization and to direct all processes to the consumer as much as possible. [3]

According to E.A. Bashkardin, "lean production" is a complex production system that includes the organization of the workplace, production areas, service and repair, logistics, accounting and other administrative and auxiliary services, that is, planning of the company in general. .[4]

N.S.Davidova notes that "lean production" is based on regular reduction of non-production costs and continuous improvement of the production process.[5]

The business system approach is mostly used by large enterprises and corporate business structures. According to this concept, it is planned to apply the methods and tools of management of production systems to all processes and structures of the enterprise. The business system approach is used in conjunction with several other concepts, models, and approaches, such as the Lean system. It should be noted that Lean system and TOC, Lean system and 6 Sigma, Lean system, TOC and Kaizen, Lean system, TOC and 6 Sigma combinations are used in the management and organization of production systems. Thus, the company management tries to take into account the advantages of each approach. However, a single approach is deeply mastered before moving to a format that uses a combination of several approaches. [6]

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Lean Production allows you to get an advantage in cost and price only if the domestic enterprise is on an equal footing with foreign competitors and operates on a relatively identical technological platform. No methods of modern business management will be able to ensure the growth of an enterprise's market share if the supplied products do not satisfy the consumer in terms of their functional characteristics and high technology. On the other hand, having significant investment opportunities for the modernization of an enterprise, you can lose them if the production system, along with the production of products, multiplies losses, which greatly increase costs and cannot compete with foreign counterparts. [7]

According to the statistical indicators analyzed on the production of products of the textile industry, Uzbekistan as a weak point in the competition of the textile industry spiritual obsolescence of weaving machines, lack of qualified engineering and technical personnel, low specialization in the production of gauze, fabric products, it was found that the production of domestic fabrics aimed at sewing and knitting did not develop, the level of fiber assimilation in some regions was low, and the number of enterprises that introduced Quality Management in accordance with international standards was low. [8]

The experience of introducing cost-effective technologies shows that no matter how much employees improve the process, no matter how "economical" it is, new ways of eliminating losses are emerging. The process of improvement and value creation is accomplished through the efforts of employees. Employees are the main asset of the enterprise and the owners of the cultural value of economical production. [9]

Based on the experience of foreign companies, it can be concluded that the introduction of lean production technologies to ensure an increase in the efficiency of the production system will significantly reduce costs, increase labor productivity, improve the production process, achieve high financial performance, increase the competitiveness of the enterprise and achieve many other qualitative and quantitative changes. [10]

One of the basic principles of lean manufacturing and the first stage of its implementation is to define the qualities that make the manufactured product value for the consumer. This is where the implementation of lean manufacturing begins. Activities performed in the enterprise that do not create value for the customer are waste. Consequently, even the very initial stage of implementation of lean manufacturing already has an impact on increasing competitiveness. [11]

Improving the model of efficient use of production capacity, increasing labor productivity, enhancing corporate spirit and corporate culture in textile enterprises through the use of cost-effective means of production (Lean production) - 5S system. Substantiate the effectiveness of the introduction of the organizational system "5S" (sorting, compliance, cleanliness, standardization, improvement) of the concept of cost-effective production to manage the use of production capacity as an element of improving process quality and production culture in textile enterprises. [12]

The use of lean production tools (taking into account the principles of IT) depends primarily on what changes are required in the enterprise's activities and how deeply lean production is implemented in the enterprise. As a result of researching the theory and practice of using lean production, it became clear that the apparatus of lean production is understood at many levels (philosophical, methodological and instrumental).

Based on the theoretical considerations presented above, "lean production" is a management philosophy based on the systematic identification of non-production losses and improvement of the production process. The introduction of "lean production" requires new approaches to human resource management based on the recognition of employees as the main source of increasing the efficiency of the enterprise.

Method

In the article, the methods of scientific study, comparative comparison, study of statistical data and economic comparison and analysis, logical thinking, scientific abstraction, analysis and synthesis, induction and deduction are widely used.

Result and Discussion

Production of more than 250 types of products that replace imports has been launched at textile enterprises. In 2020, compared to 2017, the volume of imported products in the territory of the Republic decreased by 93%. Among them, the production of about 300 types of knitted products alone was mastered. In order to meet the needs of the population for ready-made products, more than 1,300 small and private business enterprises in small batches, on average 1,350.2 bln. Soum production was achieved. A reduction in imports in the amount of 89.4 mln US dollars has been achieved by mastering the production of raw materials, materials and consumer goods that replace imports.

In 2020, based on the localization program, by network enterprises machines and tools worth 73.8 million US

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dollars, 4.1 million US dollars of raw materials and artificial fiber, 20.3 million US dollars of mixed fiber yarn, 46.9 million US dollars mixed fiber yarn yarn, 35.2 million USD technical yarn, 3.8 million USD synthetic yarn, 8.2 million USD spare parts, 1.4 million USD paint products and 10.3 million USD local haberdashery production was achieved.

In 2020, a total of 72 projects with a value of 591 million dollars, specializing in the production of ready-made yarn, as well as ready-made knitted fabrics, were launched in the context of the pandemic.A total of 17,165 new jobs were created due to the launched projects. In 2020, compared to 2019, the production volume increased by 1976.9 million dollars (Fig. 1).

N	Product type	Unit of measure	2017 year	2018 year	2019 year	2020 year	2021 year
1	Textile and knitwear products	Million USD	3565,1	4621,8	6411,2	8388,1	11109,1
2	Cotton thread	thousand tons	392,4	442,9	608,2	754,3	835,0
3	Including dyed, mixed, bamboo, acrylic fiber coil yarn	thousand tons	39,9	132,8	182,5	226,3	305,1
4	Ready fabric	million sq. m	370,5	462,8	625,0	812,5	1056,0
5	Knitted fabric	thousand tons	71,9	89,9	142,3	227,4	300,2
6	Sewing knitted goods	million piece	342,2	416,0	559,8	712,2	1011,3
7	hosiery products	million couple	72,9	98,4	162,9	229,9	309,3

Source: Author's development based on the information of the "Uztogamichiliksanoat" association.

Figure 1. *Dynamics of product production volume in textile enterprises in Uzbekistan in 2017-2021 by main assortments*

According to the analysis of the data in Fig. 1, compared to 2019, the production volume of kalava yarn increased by 146.1 thousand tons (124%), and the production volume of finished yarn increased by 187.5 million tons. sq. per meter (130%), the production of knitted fabric - 85.1 thousand tons (159.8%), the production of sewing and knitting products - 152.4 million pieces (127.2%), the production volume of socks - 67 million pairs (141 .1 %).

In recent years, the share of textile production enterprises among industrial enterprises has been increasing in our republic. The following table shows the growth rate of the country's GDP and the growth rate of textile products in its composition (Fig. 2).

Indicators	Years							
	2012	2013	2014	2015	2016	2017	2018	2019
GDP billion soums	120,1	144,5	177,2	210,2	242,5	302,5	406,6	511,8
Industrial production volume	57,6	70,6	84,2	97,6	111,9	148,8	235,3	322,5
Processing industry	43,6	55,3	67,1	77,1	89,8	117,7	189,6	254,8
Production of textile products	7,6	8,9	10,8	13,2	13,3	16,8	24,8	29,9

Figure 2. *Growth rate of GDP and textile industry in the economy of Uzbekistan (in trillion soums)* Source: author's development based on the data of the Statistics Committee of the Republic of Uzbekistan.

According to the results of the research, the volume of industrial production in 2019 was 322,535.8 billion soums, compared to 2018, this indicator increased by 137.0%. Also, in the industrial sector, the processing industry and the textile production network have their place. In 2019, the processing industry in our country amounted to 254,860.9 billion soums (5.8 times more than in 2012 or 34.4% more than in 2018). products were created and textile products worth 29,946.6 billion soums (3.9 times more than in 2012 or 20.6% more than in 2018) were produced.

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In order to expand the production and export of high-quality ready-made textile products, to promote national brands to the world markets, this situation involves the widespread introduction of advanced innovative technologies, know-how, design developments into the production process, the localization of the production of modern models of fittings and accessories, the cultivation of raw cotton It happened at the expense of the organization of clusters of development which envisage the integration of production up to the stage of initial processing, further processing of the product in cotton ginning enterprises and the production of finished textile products with high added value.

If we consider the products produced and imported in our republic according to the level of readiness for final consumption, i.e. raw materials (cotton fiber), semi-finished products (wool thread, raw yarn, fabric) and finished products (ready-made gauze, sewing and knitted goods), in which raw it was found that the share of the material is large.

About 200 investment projects with a value of 1854.5 million dollars were implemented in 2018-2021. Most of these projects specialize in the production of finished products, ie dyed yarn, knitted fabric, gauze, knitted products and sewing products. (Table 1).

т/р	Indicators	2018 year	2019 year	2020 year	2021 year	The difference of 2018 from 2021
1.	The number of mastered innovation-investment projects	60	65	71	85	25
2.	Value of innovation-investment projects, million dollarsIncluding:	550,7	829,7	474,1	836,3	285,3
	At their own expense	274,5	268,6	136,4	216,5	-58
	Credit from commercial banks	262,8	536,7	234,4	140,8	-122
	Foreign investments and loans	13,5	24,3	103,3	479,0	465,5
3.	Number of jobs created	10654	15568	16855	22820	12166
4.	Export potential of innovation-investment projects, mln. dollars.	253,6	377,3	187,4	255,8	2,2

Table 1. *Dynamics of implementation of innovation-investment projects in textile enterprises in Uzbekistan in 2018-2021* Source: author's development based on the information of the "Uztoqimaliksanoat" association.

The projects were mainly financed by the enterprises' own funds, loans from commercial banks and foreign investments and loans. Due to the implemented innovation-investment projects, the export potential of the industry increased by 69.8 million dollars, and 43,077 new jobs were created.

The implementation of the Program for the localization of production of finished products, components and materials also had an impact on achieving high growth rates of industrial production in the republic. 9.5 trillion for 1,082 projects included in this program. Soum products were produced. 107.4 mln. of products produced within the framework of the localization program. Exported in the amount of US dollars (Table 2).

By regions	2014 year	2015 year	2016 year	2017 year	2018 year	2021 year
by republic	910 311,1	883 733,8	922 904,6	1 133 639,9	1 300 262,1	1 626 918,9
Republic of Karakalpakstan	5 207,0	7 350,1	5 425,8	11 694,4	9 785,5	29 151,0
Andijan	120 577,5	106 467,8	130 950,6	150 214,3	209 814,3	183 091,3

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Bukhara	80 323,9	67 672,4	38 150,6	25 839,8	32 377,2	60 204,9
Jizzakh	34 977,0	22 761,4	31 288,4	30 771,7	28 371,9	53 509,2
Kashkadarya	11 671,8	13 182,5	11 000,8	24 643,3	72 337,2	84 190,0
Navoi	13 275,9	30 235,7	27 262,3	23 018,2	24 415,7	40 261,0
Namangan	61 796,2	51 213,5	62 122,7	103 146,8	128 000,8	183 483,6
Samarkand	28 424,4	25 568,8	33 584,7	55 954,4	61 601,5	74 063,1
Surkhandarya	9 396,6	14 075,1	10 346,5	14 294,6	24 521,1	76 130,8
Syr Darya	19 073,2	15 576,5	18 191,9	33 870,9	32 359,7	30 593,9
Tashkent	119 389,2	109 934,4	113 240,0	161 329,4	154 094,0	198 983,7
Ferghana	213 286,7	203 330,4	216 753,2	266 244,8	281 904,1	273 397,2
Khorezm	3 643,9	14 501,0	23 673,9	42 529,2	46 158,0	41 881,6
Tashkent city	189 267,7	201 864,1	200 913,2	190 087,9	194 521,0	297 975,3

Table 2. *Information on exported textiles and textile products (Thousands of US dollars)* Source: Information of the State Statistics Committee of the Republic of Uzbekistan

Sectors that are part of the textile industry differ from each other not only in terms of the products they produce, but also in terms of equipment and technology, raw materials, costs and other technical and economic indicators used in the enterprises of this sector. But despite these differences, they have common characteristics:

1. high turnover rate of working capital, which ensures the efficiency of the funds invested in this sector;
2. most of the produced products go directly to the consumer market, and only a part of these products serve as raw materials for enterprises producing consumer goods;
3. the capital accumulated in the textile industry in a relatively short period of time can serve as a basis for the development of other sectors of the economy;
4. women make up the majority of the labor force working in these sectors, which allows maintaining the demographic balance in industrial regions;
5. for textile industry enterprises, mainly products of processing industries are used as raw materials;
6. most of the enterprises of the network fall into the type of large and small enterprises in terms of size (in relation to the number of employees);
7. production tools, complex raw materials, etc. are imported.

Conclusion

According to the analyzed statistics on the production of textile industry products in Uzbekistan, the weaknesses of the textile industry of Uzbekistan in the competition are the moral obsolescence of weaving machines, the lack of qualified engineers and technicians, the low level of specialization in the production of textile products, the lack of development of the production of local fabrics focused on sewing and knitting. , the low level of fiber utilization in some regions, the low number of enterprises that have introduced quality management in accordance with international standards were found

These issues are interrelated, the low level of fiber absorption has a strong impact on textiles, the lack of development of fabric production on the production of clothing and knitted products, the low level of equipment with modern equipment, and the lack of quality management in accordance with international standards. In finding a solution to these problems, it is recommended to pay attention to the development of the training system of engineering and technical personnel, bringing modern machines for textile enterprises.

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