

# Research on Empowering High Quality Development of Xinjiang Cotton Textile Industry with New Quality Productivity

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**Abstract:** In recent years, the uncertainty risk of the international cotton textile market has increased. The cotton planting and textile industry in Xinjiang, China still has shortcomings in cotton variety selection, mechanized planting and harvesting, agricultural environmental protection, and product processing and sales. It is urgent to enhance the resilience of the cotton textile industry supply chain to resist market risks. The characteristic of new quality productivity is innovation, and the key lies in quality. New quality productivity can empower the high-quality development of Xinjiang's cotton planting and textile industry from three aspects: new materials, new technologies, and new business models. New quality productivity, through technological innovation, can strengthen the cultivation of high-quality cotton varieties in Xinjiang, enhance the digitalization level of the cotton textile industry, optimize the structure and layout of the textile industry, and thus achieve high-quality development of the cotton textile industry in Xinjiang.

**Keywords:** New quality productivity; Xinjiang; Cotton textile industry; High quality development

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## Introduction

Since 2020, there has been an increase in uncertainty and risk in the international cotton textile market. Stabilizing domestic cotton production in China and ensuring effective supply has become a major task for the current cotton textile industry in China. To achieve high-quality development of cotton planting and textile industry in Xinjiang, China, it is necessary to adhere to the direction of technological innovation of new quality productivity. The characteristic of new quality productivity is innovation, the key lies in quality, and the essence is advanced productivity. Optimize the layout of the cotton textile industry, promote the deep integration of the innovation chain and industry chain, and enable technological innovation to play an important role in the high-quality development of the cotton textile industry in Xinjiang.

### 1. The Current Status of Cotton Planting and Textile Industry Development in Xinjiang

Cotton is a treasure all over the body. In addition to being used for textiles, cotton is also an important raw material for manufacturing soap, toothpaste, skincare products, explosives, plastics, banknotes, and other items. Currently, Asia is the world's largest cotton producing and consuming region. The International Cotton Advisory Committee (ICAC) predicts that global cotton production will reach 24.3 million tons in 2023/2024, and world cotton consumption is expected to reach 23.75 million tons. China is an important consumer of cotton and exporter of textiles and clothing. Due to its favorable geographical and climatic conditions for cotton growth, Xinjiang cotton has obvious advantages in length, strength, and luster, and has become the main production area of cotton in China.

The cotton textile industry chain in Xinjiang includes three links: upstream, midstream, and downstream. The upstream industry mainly involves cotton cultivation, cotton planting, cotton management, and cotton harvesting. The upstream industry is crucial for cotton yield and quality. The midstream industry mainly involves the processing, sales, and warehousing of seed cotton and lint cotton. The downstream industries mainly involve yarn trade, cotton trade, printing and dyeing, clothing production, etc. The downstream industries directly affect the final market competitiveness of textile products. The upstream, midstream, and downstream of the cotton spinning industry chain are interdependent and develop in synergy. The efficient operation and optimization of each link will help improve the overall efficiency of the industry chain.

### 2. Prominent problems in the cotton textile industry in Xinjiang

At present, there are still shortcomings in variety selection, mechanized planting, and environmental protection in cotton cultivation in Xinjiang. The textile industry also faces bottlenecks in production and processing, talent cultivation, and product sales. These practical problems are restricting the high-quality development of Xinjiang's cotton textile industry and urgently need to be solved.

## 2.1 Cotton planting aspect

### 2.1.1 In terms of variety selection

At present, there are two main types of cotton varieties in Xinjiang: those from other provinces and those selected locally. The advantages of cotton varieties in Xinjiang are early maturity, high yield, and good quality, but their disease resistance and insect resistance are also relatively weak. Due to the weak breeding and supporting technology research and development capabilities of cotton in Xinjiang, the selection of high-quality varieties has become one of the main obstacles affecting the high-quality development of cotton in Xinjiang.

### 2.1.2 Mechanized planting

In the four stages of cultivation, planting, management, and harvesting of cotton in Xinjiang, the agricultural mechanization rate in the management and harvesting stages is relatively low. There are generally some technical problems with field management machinery, and the usage effect is not ideal, which urgently needs technical improvement. In addition, the efficiency of mechanical cotton harvesting in the harvesting process is also a key issue that needs to be paid attention to. The low efficiency of mechanical cotton harvesting is reflected in the inability of existing machinery to efficiently and universally collect different varieties of cotton, which is also a shortcoming that restricts the efficiency improvement of mechanization level in Xinjiang.

### 2.1.3 In terms of environmental protection

Cotton mulching film is a covering material used for cotton planting. The main function of mulching film is to maintain temperature and moisture. The main material of mulching film is polyethylene, which is difficult to degrade. At present, the reliability and efficiency of agricultural residue film recycling machinery in Xinjiang are low, and the residue film recycling is not thorough, making it difficult to recycle and treat agricultural residue film. In addition, some farmers excessively use chemical fertilizers in order to achieve high yields, resulting in soil surface salinization and soil compaction, which weakens the ability of cotton to resist diseases and pests, and is also an important reason for exacerbating agricultural environmental pollution and affecting cotton quality.

## 2.2 In terms of textile industry

### 2.2.1 Processing and sales aspects

Firstly, Xinjiang's textile industry is currently dominated by conventional varieties, with insufficient innovation capabilities and a lack of polyester synthetic fiber products. The product variety structure is relatively single, and homogeneous competition is common. Secondly, the current production efficiency of cotton textile enterprises in Xinjiang is generally low, the industry's ability to resist risks is weak, and there is no well-known brand of their own, resulting in them still being sold as primary products to other regions.

### 2.2.2 In terms of human capital

The local textile professional talent training system in Xinjiang is also relatively weak, and the ability to provide high-quality talents for the textile industry is limited, resulting in a relative shortage of textile professionals in Xinjiang, especially high-level skilled talents, and the failure to form a talent agglomeration effect.

## 3. Analysis of the Mechanism of Empowering Xinjiang's Cotton and Textile Industry with New Quality Productivity for High Quality Development

Currently, the cotton textile industry in Xinjiang is facing resource and environmental constraints as well as the need for transformation and upgrading. New quality productivity is the key to breaking through the bottleneck of reality. The characteristic of new quality productivity is innovation, and technological innovation can give birth to new materials, new technologies, and new business models. Therefore, guided by new quality productivity, innovative allocation of production factors can be achieved, forming new input-output relationships, and tapping into the potential and vitality of Xinjiang's cotton textile industry development.

New quality productivity can empower the high-quality development of Xinjiang's cotton planting and textile industry from three aspects: new materials, new technologies, and new business models. Firstly, in terms of new materials. Fiber new materials and textile composite new materials can broaden the new space for the development of Xinjiang's cotton textile industry, bring diversified product choices to the industry, cultivate leading enterprises with high standards, and thus achieve the reconstruction of Xinjiang's cotton textile industry chain and the improvement of its value chain. Secondly, in terms of new technologies. The application of new technologies is the key to optimizing and upgrading the cotton textile industry in Xinjiang. New technologies can improve the quality of cotton varieties in Xinjiang, enhance the production and processing efficiency of textile enterprises, and optimize the management of the cotton textile industry. Digital technology can be deeply integrated with the textile industry, giving birth to the digital transformation of modern cotton textile industry and promoting the optimization and upgrading of Xinjiang's textile industry. Thirdly, in terms of new business models. Supporting new development with green new

formats, utilizing advanced biotechnology to develop new products that are in line with green development, strengthening green innovation and circular economy, providing multi-dimensional sustainable development solutions for the cotton textile industry and enterprises, promoting the accelerated integration of the cotton textile industry and green economy, and promoting the green and low-carbon development of the cotton textile industry.

#### **4. Suggestions for high-quality development of cotton planting and textile industry in Xinjiang**

Xinjiang should vigorously develop new quality productive forces and promote high-quality development of cotton planting and textile industry through technological innovation. Specifically, it is necessary to use technological innovation as a means to continuously strengthen the cultivation and promotion of high-quality cotton varieties in Xinjiang, optimize the structure and layout of the textile industry, enhance the digitalization level of the cotton textile industry, promote the green development of the cotton textile industry, and broaden the sales channels of cotton textile products.

##### **4.1 Cotton varieties and planting aspects**

Strengthen the cultivation of high-quality seeds and improve the mechanism for evaluating varieties. The source of cotton quality lies in the seeds. Xinjiang should accelerate its breeding innovation capabilities and vigorously cultivate excellent varieties such as hybrid cotton, insect resistant cotton, drought resistant cotton, and grass resistant cotton. The cultivation of cotton varieties suitable for machine harvesting is also a key direction for future efforts. In addition, it is necessary to gradually develop biodegradable plastic films to achieve energy conservation and emission reduction in agriculture, design efficient residual film recycling machinery, and gradually use soil remediation measures such as organic fertilizers and biological control for cotton fields.

##### **4.2 Optimization and upgrading of the textile industry**

We should take new quality productivity as the guide, high-quality cotton and technological innovation as the lever, continue to optimize the structure and layout of Xinjiang's cotton textile industry, strengthen the construction of the cotton textile industry chain and supply chain, accelerate the upgrading of traditional production capacity in the spinning industry, promote the integration of chemical fiber and textile, and improve the efficiency and quality of scientific and technological innovation. Optimize and leverage the innovative system of industry university research collaboration and industrial chain collaboration, strengthen collaborative research and development, and achieve quality and efficiency improvement in key links such as production, acquisition, processing, and sales. Expand and strengthen the cluster economy. Give full play to the organizational carrier role of industrial clusters, focus on cultivating and developing new quality productive forces, build textile industry clusters, digital industry clusters, and green industry clusters, and promote the coupling of innovation factor distribution with the development of cluster main businesses and formats. Promote the integration and matching of the textile industry with related industries, and cultivate industrial clusters with innovative, green, and forward-looking characteristics. In addition, it is necessary to gradually improve the regulation and circulation system of the cotton market, expand the development space of Xinjiang's cotton textile industry, enhance the resilience and vitality of the cotton textile industry, and ensure the safety and stability of the cotton textile industry.

##### **4.3 In terms of digital economy and green development**

New quality productivity itself is also green productivity. Strengthen green innovation and build a green supply chain system for cotton spinning. Developing a circular economy in textiles, accelerating the research and application of key technologies for textile recycling and reuse, building a recycling system for waste textile resources, and promoting the green upgrading of the textile industry. We need to strengthen technological innovation and application, utilize the Internet of Things, big data, and artificial intelligence technologies, gradually improve various digital platforms of Xinjiang's cotton textile industry, and provide convenient and efficient technical services for cotton farmers and cotton textile enterprises.

##### **4.4 In terms of sales channels for cotton textile products**

Actively expanding the consumption channels of cotton textile products in Xinjiang. Firstly, actively promote the construction of public cotton brands in Xinjiang, strengthen the cultivation and promotion of leading enterprise brands in Xinjiang, encourage textile enterprises to increase the proportion of cotton use in Xinjiang, and cultivate and expand the consumer market through brand building. Secondly, build a textile and clothing processing base in Xinjiang targeting Central Asia, West Asia, and Europe. Realize the integrated development of domestic and foreign trade, continuously expand the domestic and international markets, and enhance the depth and breadth of the cotton textile industry's integration into the global industrial system.

#### **5. Conclusion**

This article analyzes the current situation and prominent problems of the cotton textile industry in Xinjiang, and studies the upgrading path of the cotton textile industry from the perspective of new quality productivity. The characteristic of new quality productivity is innova-

tion, and the key lies in quality. This study found that new quality productivity can empower the high-quality development of Xinjiang's cotton planting and textile industry from three aspects: new materials, new technologies, and new business models. New quality productivity uses technological innovation as a means to enhance the resilience of the cotton textile industry chain and supply chain to resist market risks.

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