

Strategies for Increasing Investment in the Textile Sector through Strengthening the Upstream Industry and Managing Local Raw Materials

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Abstract. The textile industry is one of the strategic sectors in Indonesia's economy, with great potential to attract investment. However, the dependency on imported raw materials has become a major obstacle in enhancing the competitiveness of this industry. This study aims to analyze strategies for increasing investment in the textile sector through strengthening the upstream industry and managing local raw materials. The research method used is a literature review with a qualitative approach and descriptive analysis, utilizing data from Google Scholar from 2012 to 2025. Out of 30 initial articles found, only 17 were selected based on strict criteria. The findings show that strengthening the upstream industry through increased local raw material production, the development of alternative fiber innovations, and the implementation of investment incentive policies can enhance the self-sufficiency of the textile sector and reduce dependency on imports. Various case studies discussed show that investment in research and development (R&D), the development of textile industrial zones, and the implementation of a circular economy can improve production efficiency and global competitiveness. The implications of this study include the enhancement of national textile industry resilience, job creation, and strengthening sustainable policies in managing local raw materials. Therefore, support from the government, industry players, and academics is needed to implement appropriate strategies to strengthen the upstream industry and attract investment in the textile sector.

Keywords: Textile Investment, Upstream Industry, Local Raw Materials, Circular Economy, Industrial Competitiveness.

1. Introduction

The textile industry is a strategic sector in Indonesia's economy, contributing significantly to exports, employment absorption, and the growth of the manufacturing industry. However, in recent years, this sector has faced various challenges that hinder its competitiveness in the global market, especially regarding dependence on imported raw materials, limited capacity of the upstream industry, and instability in raw material prices. Most of the primary raw materials, such as cotton, synthetic fibers, and dyes, are still dependent on imports, making exchange rate fluctuations and global trade policies highly impactful on the cost structure. Therefore, increasing investment in the textile sector requires a strategy focused on strengthening the upstream industry and optimizing the management of local raw materials to reduce import dependency and improve supply chain efficiency.

One of the main challenges in the national textile industry is the weak integration between the upstream and downstream industries [1]. The upstream industry, which includes the production of fibers, yarns, and raw fabrics, has not developed optimally and therefore cannot meet the needs of the downstream industry, which focuses on garment production and finished textile products. This imbalance forces the downstream industry to rely more on imported raw materials, whose prices are more volatile. On the other hand, the lack of investment in the upstream industry has resulted in limited innovation and the development of high-quality local fiber production technology. The national textile industry can become more self-sufficient and competitive in the

global market by strengthening the upstream industry through investments in fiber processing technologies and the development of local raw materials.

The government has introduced various policies to support the textile industry, such as tax incentives, machinery restructuring programs, and import control policies. However, the effectiveness of these policies still needs to be improved to attract more investment in the upstream sector. One approach that can be implemented is improving regulations related to the management of local raw materials, including providing incentives for businesses that use domestic raw materials and develop more environmentally friendly production technologies. Additionally, policies that encourage synergies between the textile industry and the agriculture and petrochemical sectors are also key in creating more efficient and sustainable supply chains [2].

In terms of local raw materials, Indonesia actually has significant potential in developing natural fibers such as cotton, bamboo fiber, and banana fiber, which could serve as alternatives to imported raw materials. However, the utilization of these raw materials is still limited due to the lack of investment in research and technology for processing natural fibers. Furthermore, the instability in domestic cotton production and low productivity among cotton farmers are major obstacles to achieving raw material self-sufficiency. Therefore, strategies for managing local raw materials should include efforts to increase the productivity of natural fiber agriculture, develop efficient processing technologies, and build more integrated distribution systems with the textile industry.

From an investment perspective, the national textile industry also faces challenges in attracting capital from both domestic and foreign investors. Several key obstacles include high production costs, regulatory frameworks that are not fully supportive, and intense competition from other textile-producing countries such as China, Vietnam, and Bangladesh. This means that investment enhancement strategies must include more attractive incentives for investors, such as streamlined licensing processes, tax reductions, and supporting facilities like dedicated textile industrial zones with comprehensive and efficient infrastructure.

Beyond regulatory and infrastructure factors, the sustainability of the textile industry must also be a primary concern in investment enhancement strategies. Currently, global trends are shifting towards more environmentally friendly and circular economy-based textile industries, where textile waste can be recycled into new raw materials [3]. If Indonesia aims to enhance the competitiveness of its textile industry, investment in eco-friendly technologies—such as the use of natural dyes, low-waste production processes, and the recycling of textile waste into regenerated fibers—must be an integral part of the national textile industry development strategy.

To compete globally, collaboration between the government, industry players, and research institutions is essential in creating a more innovative and competitive textile industry ecosystem. The government can play a role in providing incentives and supportive regulations, while the industry can focus on improving production efficiency, product diversification, and research institutions can contribute by developing technology and innovating local raw materials. Investment in the textile sector will increase and become more sustainable in the long term by fostering such collaboration.

Based on the discussion above, this study aims to analyze investment enhancement strategies in the textile sector through the strengthening of upstream industries and the management of local raw materials. By reviewing relevant literature, this study will identify the key factors influencing the competitiveness of the textile industry and formulate policy recommendations and investment strategies that can support the sustainable growth of this sector.

1.1. Textile Investment

Textile investment refers to the flow of capital injected into the textile industry to enhance production capacity, operational efficiency, and competitiveness in both domestic and international markets [4]. This investment can come from various sources, including domestic capital, foreign direct investment (FDI), and funding from financial institutions. The key factors influencing investment in the textile industry include economic stability, government policies, the availability of raw materials, and advancements in production technology. In Indonesia, increasing investment in this sector is crucial to reducing dependence on imports, creating job opportunities, and strengthening the local supply chain to be more competitive on a global scale.

1.2. Upstream Industry

The upstream industry in the textile sector encompasses all initial processes in the production chain, from sourcing raw materials such as cotton, synthetic fibers, and yarn to early-stage processing like spinning and weaving [5]. Strengthening the upstream industry is essential to ensuring a stable and high-quality supply of raw materials for downstream industries that produce fabrics and finished textile products. Countries with strong upstream industries tend to have higher competitiveness as they can control production costs and raw material

quality. In Indonesia, the main challenges in the upstream industry include low local cotton production and high dependence on imported fibers, necessitating the development of alternative raw materials and investment in more efficient processing technologies.

1.3. Local Raw Materials

Local raw materials in the textile industry refer to natural or synthetic fibers produced domestically as key components in the textile manufacturing process [6]. Utilizing local raw materials plays a strategic role in reducing reliance on imports, lowering production costs, and improving the welfare of local farmers and producers. Some potential local raw materials for development in Indonesia include cotton, bamboo fiber, banana fiber, and pineapple fiber, which can serve as eco-friendly alternatives for the textile industry. Additionally, optimizing local raw materials can support the sustainability of the textile industry by reducing carbon footprints and enhancing the efficiency of the domestic supply chain.

1.4. Circular Economy

The circular economy in the textile industry is a production and consumption concept focused on reuse, recycling, and waste reduction to create a more sustainable system [7]. Implementing a circular economy involves various strategies, such as using eco-friendly raw materials, innovating in product design for recyclability, and optimizing production processes to minimize waste and energy consumption. In the textile sector, circular economy practices can include utilizing recycled fibers from textile waste, adopting low-water-consumption dyeing technologies, and promoting sharing economy-based business models such as clothing rental. The textile industry can improve efficiency, reduce environmental impact, and strengthen competitiveness in a global market that increasingly demands sustainable business practices by adopting circular economy principles.

1.5. Industry Competitiveness

The competitiveness of the textile industry reflects its ability to produce high-quality, cost-effective, and innovative products in both domestic and international markets [8]. Factors influencing competitiveness include production cost efficiency, raw material quality, the adoption of modern technology, and adequate regulatory and infrastructure support. Countries such as China, India, and Bangladesh have high competitiveness in the textile industry due to their success in developing efficient supply chains, maintaining a productive workforce, and adopting advanced manufacturing technologies. To enhance the competitiveness of Indonesia's textile industry, a comprehensive strategy is needed, encompassing upstream industry strengthening, investment in research and development, and the implementation of sustainability standards that align with global market trends.

2. Method

This study is a literature review with a qualitative approach aimed at analyzing strategies for increasing investment in the textile sector through the strengthening of the upstream industry and the management of local raw materials. The method used in this research is descriptive analysis, which seeks to systematically describe and explain various concepts, findings, and trends related to the research topic based on relevant literature reviews. The data for this study were obtained from various scholarly articles accessed through Google Scholar within the publication range of 2012-2025. The data collection process was conducted using relevant keywords such as investment in the textile industry, upstream textile industry, local raw material management, and textile sector development. The initial search yielded 30 articles related to the research topic. However, to ensure data relevance and quality, a rigorous selection process was carried out based on specific criteria, including alignment with the research focus, the methodology used in the articles, and the relevance of the findings to the context of the textile industry in Indonesia. After this selection process, 17 articles were chosen as the primary sources for analysis. The analysis was conducted using a descriptive approach, where data obtained from various articles were analyzed to identify patterns, trends, and factors influencing investment growth in the textile sector. This review includes discussions on the role of the upstream industry in enhancing the competitiveness of the textile sector, the effectiveness of policies in managing local raw materials, and the challenges and opportunities in attracting investment in this sector. Additionally, the analysis compares various findings from the literature to gain a more comprehensive understanding of strategies that can be applied to sustainably increase investment in the textile industry.

3. Result and Discussion

The textile industry in Indonesia plays a strategic role in the national economy, contributing significantly to exports, employment absorption, and the growth of the manufacturing sector. However, a major challenge faced by the industry is its high dependency on imported raw materials, which leads to production cost volatility and supply instability, particularly during global crises or when trade policies restrict imports. One solution to enhance the competitiveness of this industry is by strengthening the upstream sector through increased production capacity of local fiber and yarn, supported by investment incentives, eco-friendly technology, and research on alternative raw materials such as bamboo fiber and recycled fiber, which offer more sustainable options. Additionally, optimizing local raw material management involves reducing import dependency and improving supply chain efficiency through digitalization of logistics systems, strengthening partnerships between cotton farmers and the textile industry, and implementing government policies that support raw material self-sufficiency through tax incentives and financing for local producers. With this approach, the national textile industry can become more resilient to global market fluctuations, enhance the competitiveness of local products in international markets, and establish a more sustainable industrial ecosystem based on stable and efficient domestic resources.

PT Asia Pacific Rayon (APR) serves as a concrete example of how investments in the upstream sector can reduce import dependency and strengthen the national textile supply chain by producing rayon fiber from locally sourced raw materials in industrial forests in Riau. This initiative enhances the self-sufficiency of the textile sector while lowering logistics costs and mitigating supply uncertainties caused by fluctuating imported fiber prices [9], [10]. With its continuously expanding production capacity, APR contributes to textile value chain efficiency, enabling downstream producers to access high-quality raw materials at more stable prices while supporting the government's import substitution policies. Furthermore, the use of sustainably managed acacia wood as the primary raw material for rayon fiber positions APR as a pioneer in circular economy practices, where production waste is minimized and material recycling is optimized to create a more environmentally friendly industry. This provides a strategic advantage in responding to global market trends, as consumers and international trade partners increasingly prioritize textile products made from environmentally and socially responsible resources. Through this approach, APR plays a key role in enhancing the competitiveness of the national textile industry in global markets and demonstrates that strengthening the upstream sector can be crucial for the long-term sustainability of Indonesia's textile sector in the face of economic, environmental, and international trade regulatory challenges.

PT Sri Rejeki Isman Tbk (Sritex) exemplifies how local raw material management can boost investment and production efficiency in the national textile industry, particularly through efforts to diversify raw materials by blending synthetic fibers and utilizing local cotton to reduce import dependency, which has long been a challenge due to price fluctuations and global supply instability [11]. However, the limited domestic cotton production remains a significant barrier, as Indonesia still imports large volumes of cotton. Therefore, close collaboration between the textile and agricultural sectors is necessary to increase domestic cotton production by expanding available farmland, adopting modern agricultural technologies, and providing incentives for cotton farmers to ensure their output meets the standards of the national textile industry. Additionally, innovation in developing alternative fibers such as bamboo fiber and recycled fiber is a strategic step to establish a more sustainable supply chain, aligning with the growing global demand for eco-friendly textile products. Indonesia's textile industry can strengthen its competitiveness in both domestic and international markets while building a more independent and long-term sustainable industrial ecosystem with policies that support cross-sector synergy, increased domestic cotton production capacity, and investments in alternative fiber technology.

The use of alternative raw materials such as bamboo fiber, banana fiber, and pineapple fiber in the textile industry is gaining attention due to their strength, lightweight properties, and environmental sustainability, aligning with global trends that emphasize sustainability and circular economy principles, where agricultural waste can be converted into high-value-added products. In Central Java, several small and medium-sized enterprises (SMEs) have begun developing banana fiber-based products, with artisan communities in Klaten serving as a successful example of penetrating international markets thanks to banana fiber's durability and unique texture, which is suitable for fashion products and home textiles [12]. However, the development of these alternative raw materials still faces challenges in scaling up production due to fragmented raw material supply, inefficient processing technologies, and the lack of quality standardization, which hampers competitiveness in broader markets. Additionally, limited investment in research and development (R&D) makes the extraction and spinning process of these natural fibers more expensive compared to conventional fibers like cotton or polyester. Thus, synergy between the government, industry, and academia is needed to develop more efficient processing technologies and integrate supply chains to increase industrial-scale production. With support for innovation in natural fiber processing, regulations promoting the use of local raw materials, and enhanced production capacity through partnerships with farmers and SMEs, these alternative raw

materials have the potential to become a strategic solution for reducing reliance on imported textile fibers, creating high-value products competitive in global markets, and driving sustainable economic growth based on local resources.

The Indonesian government has implemented various strategic policies to strengthen the national textile industry, particularly through import substitution policies and incentives for businesses developing local raw materials to reduce dependence on imported raw materials and enhance the self-sufficiency of the domestic industry, in line with sustainable economic development goals. One concrete measure in this effort is the Making Indonesia 4.0 program, which designates the textile industry as one of the priority sectors for digital transformation, focusing on automation, the adoption of Internet of Things (IoT)-based technologies, artificial intelligence (AI), and data analytics to improve production efficiency, optimize supply chains, and foster more competitive product innovation in the global market [13]. This program also promotes textile factory modernization through smart manufacturing systems that enable increased productivity while reducing production waste, resulting in cost efficiency and supporting sustainability principles that are increasingly demanded in international trade. Additionally, fiscal incentives such as import duty exemptions for advanced machinery and equipment, as well as easier access to financing for businesses adopting Industry 4.0 technologies, are expected to accelerate the adoption of digitalization within the national textile industry ecosystem. However, the main challenges in implementing this policy are the limited workforce readiness in advanced technological skills and uneven digital infrastructure, necessitating synergy between the government, academia, and the industrial sector to develop training programs and strengthen technological infrastructure to ensure the success of digital transformation in the textile sector. Indonesia's textile industry has the potential to enhance its global competitiveness while supporting economic growth driven by innovation and technology in a more sustainable manner with the right policy implementation and strong cross-sector collaboration.

The availability of adequate supporting infrastructure is a key factor in increasing investment in the textile industry, as it accelerates production processes and optimizes supply chain and distribution efficiency, which is crucial in an industry with intense global competition. Dedicated textile industrial zones such as Kendal Industrial Park in Central Java have proven successful in attracting investor interest by providing integrated production facilities, including access to raw materials, skilled labor, and logistics infrastructure such as ports, highways, and efficient distribution networks, enabling textile companies to lower operational costs and enhance product competitiveness [14], [15]. Furthermore, these industrial zones offer regulatory certainty and streamlined licensing for investors, which is a crucial factor in investment decisions, particularly for multinational companies seeking strategic locations with competitive production costs. However, the challenges that remain include the availability of stable and sustainable energy, given that the textile industry is a high-energy-consuming sector, requiring investments in renewable energy and incentives for companies implementing environmentally friendly production practices to meet global sustainability standards. On the other hand, the development of textile industrial zones must also be accompanied by workforce capacity-building through vocational training and education programs tailored to Industry 4.0 needs, ensuring that the local workforce can adapt to the increasing automation and digitalization dominating the sector. Industrial zones such as Kendal Industrial Park can serve as a model for developing a highly competitive textile industry ecosystem, attracting more investments from both domestic and international sources, and strengthening Indonesia's position as a textile manufacturing hub in Asia, with integrated infrastructure, investment-friendly policies, and a well-prepared workforce.

From a sustainability perspective, global trends indicate that the textile industry is increasingly shifting towards a circular economy by prioritizing resource efficiency and waste reduction, driven by international regulations and changing consumer preferences toward more environmentally conscious products. Several major textile companies in Indonesia, such as PT Pan Brothers Tbk, have adopted this strategy by implementing textile recycling systems, utilizing production waste as new raw materials to reduce reliance on virgin fibers, and developing eco-friendly dyeing technologies that consume less water and chemicals to minimize the textile industry's environmental impact [16], [17]. These efforts help companies comply with global sustainability standards such as Bluesign® and OEKO-TEX® while opening opportunities for expansion into international markets that enforce stringent green standards, such as the European Union, which mandates supply chain transparency and the use of eco-friendly materials in the fashion industry. Additionally, applying the circular economy concept in the textile industry attracts investors focused on sustainability, particularly from financial institutions offering incentives to companies with strong ESG (Environmental, Social, and Governance) initiatives, thus enabling access to funding with more competitive interest rates to support sustainable business expansion. However, the main challenges in implementing this strategy include the high initial costs associated with developing green technologies and the lack of adequate recycling infrastructure in Indonesia, necessitating synergy between the private sector and the government to build a more robust sustainability ecosystem,

including tax incentive regulations and investment facilitation for companies adopting green production practices. Indonesia's textile industry has significant potential to become a leader in the circular economy in Southeast Asia while strengthening its competitiveness in the increasingly sustainability-driven global market, with the growing global demand for eco-friendly textile products and the push from national policies.

Based on the above discussion, strategies to increase investment in the textile sector should focus on strengthening upstream industries and managing local raw materials through expanding domestic fiber production capacity, diversifying alternative raw materials, and investing in research and technology to improve industry efficiency and sustainability. Strengthening upstream industries includes increasing domestic cotton and rayon fiber production capacity and expanding the utilization of natural fibers such as bamboo, banana, and pineapple, which have high economic potential and are more environmentally friendly, thereby reducing dependence on high-cost imported synthetic fibers that have a greater environmental impact. Moreover, investments in textile research and technology development, including fiber recycling technologies and eco-friendly dyeing methods, are crucial elements in enhancing industry competitiveness amid growing global demand for sustainable textile products that comply with ESG standards. Case studies from companies such as PT Asia Pacific Rayon in strengthening domestic rayon fiber, PT Sri Rejeki Isman Tbk (Sritex) in synthetic fiber blending innovations, and PT Pan Brothers Tbk in circular economy implementation demonstrate that integration between the industrial sector, agriculture, and government policies is key to creating a more independent and competitive textile industry ecosystem. However, key challenges that must still be addressed include Indonesia's low domestic cotton production, limited alternative fiber processing technologies, and a lack of incentives for businesses willing to invest in green technologies, highlighting the need for stronger synergy between the government, industry players, and research institutions in creating policies conducive to the national textile industry's growth. Therefore, strategic measures involving active stakeholder collaboration, such as providing tax incentives for companies investing in local raw materials, enhancing textile industry infrastructure through integrated industrial zones, and strengthening regulations supporting sustainability-driven investments, are essential to ensure that Indonesia's textile industry can boost its competitiveness in the increasingly globalized and sustainability-focused market.

4. Conclusion

This study highlights the importance of strengthening upstream industries and managing local raw materials to enhance investment in Indonesia's textile sector. The high dependence on imported raw materials remains one of the main barriers to the competitiveness of the national textile industry, which can be addressed by developing domestic fiber and yarn production capacity and promoting the use of alternative raw materials such as bamboo, banana, and pineapple fibers. Several case studies indicate that strategies focusing on strengthening local supply chains, investing in research and development (R&D), and implementing policies that support industry sustainability can enhance global competitiveness and attract more investment. Indonesia's textile sector has the potential to develop into a more independent and sustainable industry with the establishment of dedicated textile industrial zones, incentives for business players, and the application of circular economy-based technology.

The implications of this study cover economic, policy, and environmental aspects. Economically, strengthening upstream industries can improve supply chain efficiency, reduce production costs, and create new jobs in both the textile sector and natural fiber agriculture. From a policy perspective, the government needs to enhance incentives for investors developing local raw materials and establish infrastructure that supports a modern, technology-based textile industry. Environmentally, the sustainable management of local raw materials and the adoption of circular economy concepts in the textile industry can reduce negative ecological impacts, aligning with the growing global demand for environmentally friendly products.

To increase investment in the textile sector through upstream industry strengthening and local raw material management, several recommendations can be implemented: (1) increasing domestic cotton production by fostering partnerships between the textile industry and cotton farmers; (2) advancing research and innovation in the utilization of alternative raw materials such as bamboo and banana fibers; (3) accelerating the development of integrated textile industrial zones equipped with logistics infrastructure and modern production facilities; (4) providing tax incentives for companies investing in local raw material development and environmentally friendly technologies; and (5) strengthening sustainability regulations and certifications for national textile products to enhance their competitiveness in the global market.

This study has several limitations. First, it relies solely on a literature review as a data source, without incorporating empirical data or direct interviews with textile industry players. Second, the data used is sourced from Google Scholar within the 2012-2025 timeframe, which may exclude recent developments not covered in

this analysis. Third, while this study discusses various strategies for increasing investment in the textile sector, policy implementation and technological adoption in upstream industries may vary depending on specific regional or corporate conditions. Therefore, further research using field studies and quantitative analysis is necessary to provide deeper insights into the effectiveness of the proposed strategies.

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