



A Prospects and Challenges in Development of Cotton Textile Industry in Modern India: Insight modern India (1813-1950)

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ABSTRACT

The cotton textile industry in modern India (1813-1950) underwent significant evolution, from ancient craftsmanship to colonial exploitation and post-independence resurgence. Colonial policies led to British-controlled mills, sparking later efforts for independence. Post-independence, the government prioritized industrialization, fostering the establishment of modern textile mills and indigenous entrepreneurship. Despite challenges, including environmental sustainability and global market dynamics, the industry remains pivotal to India's economic growth, cultural heritage, and rural livelihoods. Understanding its historical trajectory sheds light on India's industrial journey and aspirations for a brighter future.

Keywords: Cotton Textile Industry, Modern India, India's Economic Growth

I. Introduction

The cotton textile industry holds a pivotal place in the economic and social fabric of modern India, reflecting a historical continuum of craftsmanship, industrialization, and global trade. From its ancient roots to its contemporary form, the industry has undergone significant transformations, shaped India's industrial landscape and contributing to its socio-economic development. Rooted in centuries-old traditions of cotton cultivation and craftsmanship, India's textile heritage predates the modern industrial era. Regions like Gujarat and Bengal were renowned for their intricate handloom fabrics, which found demand across the ancient trade routes of the world. However, the advent of colonial rule marked a turning point in India's textile narrative. British policies exploited Indian resources for the benefit of British industries, leading to the decline of indigenous textile production and the rise of British-controlled mills. This period of exploitation laid the groundwork for the later struggles for independence and self-reliance. With independence in 1947, India embarked on a journey of economic self-determination and industrialization. The cotton textile industry became a



focal point of post-independence development efforts, with the establishment of modern textile mills and the promotion of indigenous entrepreneurship. Throughout the decades, the industry has witnessed waves of technological innovation, policy reforms, and global market integration. From the Swadeshi movement's call for self-sufficiency to contemporary initiatives aimed at enhancing competitiveness and sustainability, the trajectory of the cotton textile industry reflects India's aspirations for growth and prosperity [1].

Today, the Indian cotton textile industry stands as a symbol of resilience, innovation, and dynamism. It encompasses a diverse ecosystem of cotton cultivation, yarn production, textile manufacturing, and export-oriented trade. Moreover, it serves as a vital source of livelihood for millions of people, particularly in rural areas where cotton farming and textile production form the backbone of local economies. As India navigates the complexities of globalization, environmental sustainability, and technological disruption, the cotton textile industry continues to evolve, adapting to new challenges and opportunities. Its story is not just one of economic growth, but also of cultural heritage, craftsmanship, and the enduring spirit of enterprise. In this context, understanding the development of the cotton textile industry in modern India offers insights into the nation's journey of industrialization, its quest for economic empowerment, and its aspirations for a brighter future [2].

II. Review of Literature

Devaraja, T. S. (2011) India's textile and apparel production ranks second globally after China. The nation is the third-largest cotton producer and second-largest consumer. India's textile industry blends various fabrics efficiently and boasts a robust manufacturing infrastructure spanning multiple fibers and yarns. Liberalization policies since the 1990s spurred significant growth, shaping two predominant value chain models: producer-driven and buyer-driven. India's apparel sector, amidst buyer-driven dynamics, exemplifies the interplay between global markets and local manufacturing prowess.

Radhakrishnan, S. (2017) Sustainability in cotton farming faces diverse challenges influenced by environmental, socio-economic, and political factors. Biotechnology aids in producing robust hybrids while reducing reliance on pesticides. International standards promote organic cultivation, but a global transition to sustainable cotton remains urgent to uplift the livelihoods of millions engaged in its cultivation.

Khan et al., (2020) Cotton holds significant economic value globally, particularly in emerging economies, contributing over \$600 billion annually. Sustainability relies on leveraging genetic diversity and integrating bio-based alternatives. India, among the top producers, epitomizes the industry's economic impact and technological advancements.

Lee, J. A., & Fang, D. D. (2015) Cotton cultivation's history spans millennia, with its domestication marking a crucial milestone. Innovations in cultivation, ginning, and spinning solidified cotton's global significance. Today, technological advancements, including transgenic variants, drive further evolution in cotton cultivation practices.

Bhatia, S. C., & Devraj, S. (2017) Textile processing, while vital, generates significant environmental pollution. Pollution control strategies, including 'End-of-pipe' technology, are crucial for wastewater treatment. The comprehensive examination of pollution management in textiles offers insights into addressing contemporary environmental challenges in the sector.

Bevilacqua et al., (2014) Cotton yarn production entails environmental ramifications across its lifecycle. Comparative analysis reveals distinct environmental impacts among enterprises. Strategic enhancements, such as energy optimization, offer promising avenues for reducing carbon emissions.

Baydar et al., (2015) The cotton textile and apparel industry faces challenges in sustainability, including resource-intensive processes. Comparisons between conventional and eco-friendly products highlight environmental benefits. Sustainable materials integration and consumer practices are pivotal for reducing environmental impacts.

Desore, A., & Narula, S. A. (2018) The textile industry's significant contribution to environmental degradation necessitates a shift toward sustainable practices. Understanding the drivers and barriers to the adoption of sustainability within the industry is essential for guiding future developments and ensuring the long-term viability of textile production.

Crafts, N., & Wolf, N. (2014) The clustering of the cotton industry in Lancashire is explored, with a focus on the geographic, market, and technological factors that influenced the industrial placement and growth in the region. This analysis sheds light on the historical development of one of the most important textile hubs in the world.

Higgins, D., & Toms, S. (2018) The historical trends of divestment in Lancashire's cotton industry are examined, highlighting the interplay between government policies and private sector considerations. This analysis provides a deeper understanding of the factors that led to the decline of the once-dominant cotton industry in the region.

Riello, G. (2010) The development of Europe's calico-printing industry is traced back to its Asian origins, illustrating the transfer of textile-printing technology from Asia to Europe. This historical narrative highlights the global flow of knowledge and techniques that shaped the European textile industry.



Hanlon, W. W. (2015) The U.S. Civil War had a profound impact on the British cotton textile industry, demonstrating how disruptions in resource availability can drive technological innovations. The British industry's response to the cotton shortage during the Civil War provides valuable insights into the adaptability and resilience of industrial sectors in the face of external challenges.

Broadberry et al. (2015) Historical estimates of Indian GDP indicate a decline in per capita income and the onset of the Great Divergence during the early modern era. This economic shift had significant implications for the development of the Indian textile industry and its role in the global market.

Kachru, R. P. (2010) The evolution of the agro-processing industry is explored, with an emphasis on the challenges and future areas of focus. The agro-processing sector's contribution to national economies, particularly in developing countries, underscores its importance as a driver of economic growth and development.

Islam et al. (2016) Bangladesh's Ready-Made Garment (RMG) sector plays a critical role in the country's economic growth and social progress. However, the industry faces significant challenges, including infrastructure inadequacies and pressures to comply with international standards. Addressing these challenges is crucial for sustaining the growth of the RMG sector and enhancing its contribution to Bangladesh's economy.

III. Reviews and Findings

Author	Year	Research Gap	Methodology	Findings
Devaraja, T. S.	2011	Exploration of the dynamics of producer-driven and buyer-driven value chains in the Indian textile industry.	Literature review and analysis	Indian textile industry has seen growth due to liberalization of trade. Buyer-driven value chains are prominent in labor-intensive industries like garments.
Radhakrishnan, S.	2017	Examination of sustainability issues and initiatives in the global cotton farming and textile industry.	Literature review	Emphasis on the importance of sustainability in cotton farming. Calls for a mass-market transformation toward sustainable cotton.
Khan et al.,	2020	Analysis of the economic significance and sustainability issues in global cotton production.	Literature review and data analysis	Cotton is a crucial cash crop contributing significantly to the global economy. Emphasis on genetic diversity and usage of bio-based substitutes for sustainability.

Lee, J. A., & Fang, D. D.	2015	Exploration of the historical evolution and technological advancements in the global cotton industry.	Historical analysis and literature review	Cotton cultivation has a long history, leading to its global significance. Technological advancements, including transgenic varieties, have revolutionized the cotton industry.
Bhatia, S. C., & Devraj, S.	2017	Examination of pollution control measures and sustainability initiatives in the textile processing industry.	Literature review and discussion	Textile processing generates various waste streams, necessitating pollution control measures. The book discusses a range of techniques and technologies for pollution control in the textile industry.
Bevilacqua et al.,	2014	Comparative assessment of environmental impacts in cotton yarn production across different countries.	Life cycle assessment and comparative analysis	Environmental impacts of cotton yarn production vary across countries. The study identifies areas for improvement, such as reducing CO2 emissions and optimizing energy consumption.
Baydar et al.,	2015	Evaluation of environmental impacts and sustainability aspects in the Turkish cotton textile industry.	Life cycle assessment and comparative analysis	Eco T-shirts produced from organically grown cotton and green dyeing processes have lower environmental impact compared to conventional T-shirts. Sustainable raw materials and practices are crucial for reducing environmental impact in the textile industry.
Desore, A., & Narula, S. A.	2018	Review of literature on sustainability issues in the textile industry, highlighting gaps and future research opportunities.	Literature review and classification	Textile industry is a major contributor to environmental pollution. Significant gaps exist in the literature regarding managerial approaches to sustainability. Future research should focus on managerial perceptions of new technologies and processes.
Crafts, N., & Wolf, N.	2014	Examination of geographical factors influencing the concentration of the cotton textile industry in Lancashire, UK.	Geographic analysis and historical investigation	Geographic factors such as water power and market access significantly influenced the concentration of the cotton textile industry in Lancashire. Sunk costs and agglomeration effects played a role in industry location.

Higgins, D., & Toms, S.	2018	Investigation into the lack of technological investment in the Lancashire cotton industry and its relationship with government policies.	Historical analysis and examination of financial and political factors	Entrepreneurs in the Lancashire cotton industry were hesitant to invest in technology due to government policies, taxation, and capital markets. Public subsidies influenced private decisions regarding industry investment and restructuring.
Riello, G.	2010	Analysis of the development of the European calico-printing industry in the seventeenth and eighteenth centuries.	Historical analysis and knowledge transfer examination	European calico-printing industry evolved through knowledge transfer from Asia to Europe, leading to its rise in the late seventeenth and eighteenth centuries.
Hanlon, W. W.	2015	Examination of the impact of the U.S. Civil War on the British cotton textile industry and its technological advancements.	Empirical analysis using detailed data	The U.S. Civil War led to shifts in cotton supplies and technological developments in the British cotton industry. The study provides empirical evidence supporting directed technical change theories.
Broadberry et al.,	2015	Estimation of Indian GDP and examination of economic trends, including deindustrialization, during the seventeenth to nineteenth centuries.	Economic analysis and historical data examination	Indian per capita GDP declined relative to Britain from the seventeenth to nineteenth centuries. Deindustrialization occurred during the early nineteenth century. The study highlights India's prosperous period during the Mughal Empire and its decline relative to Britain.
Kachru, R. P.	2010	Overview of the growth and challenges of the agro-processing sector in India, emphasizing its role in the national economy.	Review of agro-processing trends and analysis	Agro-processing sector in India has expanded significantly in recent decades. Challenges include infrastructure, energy, and export-related issues.
Islam et al.,	2016	Assessment of the contribution and challenges of the ready-made garments (RMG) sector in Bangladesh to the national economy.	Descriptive research based on available records	RMG sector in Bangladesh contributes significantly to the economy through employment and export earnings. Challenges include infrastructure, compliance, and market diversification.

IV. Future Prospects and Challenges

Looking ahead, the cotton textile industry in modern India faces a landscape of both opportunities and challenges. On one hand, there are promising prospects for further growth and expansion in global markets. India's strong manufacturing base, skilled workforce, and competitive advantages in cotton cultivation position it favorably in the international textile trade. Moreover, increasing demand for sustainable and ethically produced textiles presents avenues for innovation and differentiation. However, amidst these opportunities, the industry must navigate several challenges [3]. Environmental sustainability emerges as a critical concern, with calls for reducing water consumption, chemical usage, and carbon emissions in textile production processes. Adapting to evolving consumer preferences and market trends also requires agility and responsiveness from industry players. Technological advancements, including automation, artificial intelligence, and digitalization, offer potential for efficiency gains and product innovation, but they also require significant investments and upskilling of the workforce. Furthermore, the industry contends with global market dynamics, including fluctuating raw material prices, trade policies, and geopolitical tensions. Protectionist measures in key export markets and intensified competition from emerging textile-producing countries necessitate strategic positioning and diversification of export destinations. Addressing these challenges will require collaboration and partnership across the value chain, including government, industry associations, research institutions, and civil society organizations. Initiatives aimed at promoting sustainable practices, enhancing supply chain transparency, and fostering innovation and skill development can contribute to the long-term viability and competitiveness of the cotton textile industry [4]. In summary, while the future holds promise for the cotton textile industry in modern India, realizing its full potential will depend on the ability of stakeholders to proactively address challenges, embrace innovation, and adapt to evolving market dynamics. By leveraging its strengths and embracing sustainability-driven practices, the industry can continue to play a pivotal role in India's economic growth and global competitiveness [5].

4.1 Socio-Economic Impact

The cotton textile industry in modern India exerts a profound socio-economic impact, serving as a cornerstone of rural livelihoods and local economies. It provides employment opportunities to millions, particularly in cotton farming and textile manufacturing sectors, thus contributing to poverty alleviation and social mobility. Moreover, the industry fosters community development, infrastructure investment, and skill enhancement, empowering individuals and communities across the country. Additionally, it preserves and promotes India's rich textile heritage, nurturing cultural identity and craftsmanship while catalyzing economic growth and social progress [6-7].

4.2 Export-Oriented Growth

Export-oriented growth characterizes the trajectory of the cotton textile industry in modern India, driving its integration into global markets and fostering economic prosperity. India's position as one

of the world's leading producers and exporters of cotton textiles has facilitated substantial foreign exchange earnings and employment generation. Leveraging competitive advantages in cost-effective production, diverse product offerings, and adherence to international quality standards, Indian textile manufacturers have penetrated global supply chains, catering to the evolving demands of international consumers. This export-oriented approach has not only enhanced India's trade competitiveness but has also contributed significantly to the country's overall economic development, reinforcing its status as a key player in the global textile trade [8].

4.3 Technological Upgradation and Modernization

Technological upgradation and modernization have been pivotal in shaping the trajectory of the cotton textile industry in modern India, ushering in a new era of efficiency, productivity, and competitiveness. The transition from traditional handloom techniques to modern machinery and production processes has revolutionized the industry's operational landscape. Advanced spinning, weaving, and dyeing technologies have enabled manufacturers to streamline operations, reduce production costs, and enhance product quality. Automation and digitalization have further accelerated these advancements, facilitating real-time monitoring, data-driven decision-making, and agile production systems. Moreover, investments in research and development have spurred innovation in textile design, materials, and sustainability practices, positioning Indian textile manufacturers at the forefront of global trends. The continuous pursuit of technological excellence underscores the industry's commitment to adaptability, resilience, and long-term growth in a dynamic and competitive global marketplace [9-10].

4.4 Post-Independence Industrialization

Post-independence industrialization marks a significant phase in the development of the cotton textile industry in modern India, characterized by strategic government interventions, investment initiatives, and policy frameworks aimed at fostering economic growth and self-sufficiency. Following India's independence in 1947, the government prioritized industrialization as a key driver of economic development, with the cotton textile sector emerging as a focal point due to its historical significance and potential for employment generation. The post-independence period witnessed the establishment of numerous textile mills across the country, particularly in regions like Bombay (now Mumbai), Ahmedabad, and Lancashire (in present-day Gujarat), leveraging abundant raw material resources and skilled labor pools. Government-led initiatives, such as the Five-Year Plans, provided financial incentives, subsidies, and infrastructure support to promote the expansion and modernization of the textile industry. Moreover, policies like import substitution and protectionist measures aimed to nurture domestic industries, reduce dependence on foreign imports, and stimulate indigenous manufacturing capabilities [11]. The establishment of textile research institutions and training centers further facilitated skill development, technology transfer, and innovation within the industry. Post-independence industrialization also witnessed the emergence of indigenous entrepreneurs and



business conglomerates, driving innovation, entrepreneurship, and private sector participation in the textile sector. Collaborations with international partners and adoption of best practices from global textile hubs contributed to the industry's competitiveness and market penetration. Overall, post-independence industrialization laid the foundation for the modernization and expansion of the cotton textile industry in India, catalyzing socio-economic development, job creation, and regional prosperity. The period reflects a concerted effort by the government and industry stakeholders to harness India's industrial potential and position the country as a global leader in textile manufacturing and exports [12].

4.5 Historical Roots of Indian Textile Industry

The historical roots of the Indian textile industry run deep, tracing back thousands of years and reflecting a rich tradition of craftsmanship, innovation, and cultural exchange. As one of the world's oldest textile-producing regions, India has played a pivotal role in shaping global textile trade and manufacturing practices [13].

- a. Ancient Civilization:** India's textile industry dates back to ancient civilizations such as the Indus Valley Civilization (circa 3300–1300 BCE), where archaeological excavations have unearthed evidence of cotton cultivation, spinning, and weaving. The discovery of cotton fragments and spindle whorls indicates the early presence of textile production in the Indian subcontinent.
- b. Craftsmanship and Innovation:** Throughout antiquity, Indian artisans developed intricate weaving techniques, dyeing methods, and textile designs that garnered acclaim across the ancient world. Regions like Gujarat, Bengal, and South India became renowned for their fine muslin, silk, and cotton fabrics, coveted by merchants and elites in distant lands.
- c. Global Trade Networks:** India's textile industry thrived along the ancient trade routes that connected Asia, Africa, and Europe. Indian textiles were prized commodities in international markets, exchanged for spices, precious metals, and other goods. The Silk Road and maritime trade routes facilitated the exchange of textiles, ideas, and cultural influences between civilizations.
- d. Medieval Period:** During the medieval period, Indian textile production continued to flourish under the patronage of various empires and dynasties. Mughal rulers, in particular, played a significant role in promoting textile craftsmanship, establishing royal workshops, and fostering artistic patronage.

- e. Colonial Era Challenges:** The arrival of European colonial powers, particularly the British East India Company, transformed India's textile industry. British colonial policies exploited India's raw materials, suppressed indigenous industries, and promoted British-made textiles, leading to the decline of traditional textile centers and the rise of British-controlled mills [14].
- f. Resistance and Resilience:** Despite colonial exploitation, Indian textile artisans and weavers maintained their craft traditions and resisted British dominance. Movements such as the Swadeshi movement advocated for the promotion of indigenous industries and the boycott of British goods, highlighting the socio-political significance of the textile industry in India's struggle for independence.

The historical roots of the Indian textile industry reflect a tapestry of innovation, craftsmanship, and cultural exchange that spans millennia. From ancient civilizations to colonial encounters and independence struggles, the industry's journey embodies resilience, adaptation, and a legacy of creativity that continues to shape India's textile heritage and global identity [15].

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