

Industrialization and the Evolution of the Jute Industry in West Bengal (1854–2020): A Historical Investigation

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ABSTRACT

Industrialization has played a fundamental role in shaping the economic, social, and urban development of West Bengal, with the jute industry serving as one of its earliest and most influential industrial sectors. This study examines the historical evolution of industrialization with particular reference to the development, expansion, decline, and contemporary significance of the jute industry in West Bengal. Drawing upon historical records, government reports, and recent scholarly literature, the study traces the industry's growth from traditional jute cultivation to large-scale factory production following the establishment of the first jute mill at Rishra in 1855. The research analyses the contribution of the industry to employment generation, export growth, urbanization, labour migration, industrial entrepreneurship, and regional economic development. It also evaluates the socio-economic consequences of colonial industrial policies, labour exploitation, trade union movements, and the impact of the 1947 Partition on industrial production. Furthermore, the study examines environmental challenges associated with industrialization and highlights the renewed importance of jute as a biodegradable and sustainable alternative to synthetic materials. The findings reveal that while the jute industry significantly contributed to West Bengal's industrial transformation, it also generated persistent labour inequalities, environmental pressures, and structural economic challenges. The study concludes that the sustainable revival of the jute industry requires technological modernization, policy support, heritage conservation, labour welfare, and the promotion of diversified value-added jute products to strengthen both economic development and environmental sustainability.

Keywords: *Industrialization, Jute Industry, West Bengal, Colonial Economy, Labour Migration, Urbanization, Industrial Heritage, Sustainable Development.*

I. Introduction

Industrialisation has been one of the most significant processes in modern world history, transforming methods of production, labour relations, urban life, trade networks, social institutions, and environmental conditions. In India, industrialisation developed under colonial rule and was closely connected with the economic interests of the British Empire. While Britain used India as a source of raw materials and a market for manufactured goods, selected industries such as jute, cotton, tea, coal, railways, and iron and steel also developed within the country. Among these, the jute

industry of Bengal occupied a particularly important position. The growth of jute mills along the Hooghly River created one of the earliest and most extensive industrial regions in India. Therefore, the history of industrialisation in West Bengal cannot be understood fully without examining the rise, expansion, challenges, and continuing legacy of the jute industry.

Before factory-based production began, jute had long been cultivated and used in Bengal for making ropes, bags, mats, cloth, and household materials. The fertile alluvial soil, humid climate, and abundant water supply of the Ganges–Brahmaputra delta made Bengal highly suitable for jute cultivation. With the expansion of global trade during the nineteenth century, jute became an internationally valuable commercial crop. Stewart (2017) noted that Bengal possessed highly favourable environmental conditions for jute cultivation, while factory production converted this traditional fibre into a major export commodity. The demand for jute increased rapidly because jute bags were widely used for packing food grains, sugar, cotton, coffee, and other commodities transported through international markets.

The establishment of the first jute mill near Kolkata in 1855 marked the beginning of a major industrial transformation in Bengal. Over time, many jute mills were established along both banks of the Hooghly River, particularly in areas such as Howrah, Hooghly, Serampore, Bhadreswar, Shyamnagar, Barrackpore, Titagarh, and Naihati. The river provided access to water, transport routes, ports, markets, and labour settlements. Kolkata also functioned as the centre of colonial administration, finance, trade, and shipping, creating favourable conditions for industrial investment. European managing agencies, especially those with links to Dundee in Scotland, played a major role in financing and controlling jute-mill companies. Wearmouth (2015) explained that managing agencies developed organisational structures through which they retained control over jute companies, supply chains, and commercial decisions, even when ownership became more widely dispersed among shareholders.

The development of the jute industry had important economic consequences for Bengal. It created employment opportunities for thousands of workers and contributed to the growth of trade, transport, banking, port services, warehousing, and urban markets. The industry also connected rural agriculture with urban manufacturing. Peasants in Bengal cultivated raw jute, traders purchased and transported it, mills processed it into sacks and cloth, and exporters supplied the finished goods to global markets. Thus, jute created a complex chain linking villages, industrial towns, Kolkata port, and international trade networks. However, this economic growth was not equally beneficial for all groups. The major profits were largely controlled by British business interests, European managing agencies, and later some Indian industrial groups, whereas cultivators and workers often remained economically vulnerable.

Industrialisation also led to the emergence of a large and diverse working class. Jute mills depended heavily on migrant labour from Bihar, Uttar Pradesh, Odisha, Jharkhand, and other regions. Workers settled near mills in crowded industrial neighbourhoods, creating new forms of urban society. Sarkar (2021) observed that industrial work and residential life were closely connected in the formation of India's urban-industrial workforce. The experience of jute workers was shaped not only by factory

discipline, wages, and working hours but also by housing conditions, health, sanitation, family life, caste, language, and community relations. The mill areas of the Hooghly belt became multicultural working-class spaces where migrants from different backgrounds lived and worked together.

At the same time, industrial labour was marked by exploitation and insecurity. Long working hours, low wages, unsafe conditions, irregular employment, and limited welfare facilities were common features of early industrial life. Colonial industrial policies generally favoured capital and export interests over labour welfare. Chakraborty (2020) highlighted that British rule transformed the earlier village-centred economy and contributed to the rise of an organised working class under difficult social and economic conditions. Labour migration, factory discipline, and unequal power relations encouraged workers to organise collectively. Trade unions, strikes, and labour movements gradually became important features of the jute industry. These movements reflected workers' demands for better wages, job security, improved conditions, and recognition of their rights.

The jute industry also had wider social effects. Industrial towns contributed to urbanisation by attracting workers, traders, service providers, and small entrepreneurs. Markets, schools, transport facilities, religious institutions, and residential colonies developed around mill areas. Yet rapid industrial growth often produced overcrowding, inadequate housing, poor sanitation, and public-health problems. The benefits of industrialisation were therefore accompanied by social inequalities. Industrial communities developed a strong identity based on shared work, neighbourhood life, and local cultural practices. Recent studies have increasingly recognised jute mills as sites of industrial heritage. Mukherjee and Banerji (2025) argued that industrial heritage must include the perceptions of local communities, because workers and residents attach social, cultural, and emotional value to mill landscapes. Similarly, Sen (2025) viewed jute mills as living industrial heritage, where industrial activity, community participation, employability, and cultural memory continue to coexist.

Another major impact of industrialisation has been environmental degradation. The concentration of factories along the Hooghly River contributed to water pollution, waste discharge, pressure on land, and changes in the riverine ecosystem. Ranjan and Ramanathan (2018) observed that industrialisation and urbanisation along the Hooghly had significantly increased pollution in the estuarine region. Although the jute fibre itself is renewable and biodegradable, the industrial process and associated urban growth created environmental pressures. In the contemporary context, however, jute has gained renewed importance as an eco-friendly alternative to plastic. Jarin et al. (2024) emphasised that jute products are biodegradable, renewable, and comparatively less harmful to the environment. This creates new possibilities for reviving the jute sector through sustainable production, value-added products, and environmentally responsible industrial policies.

After independence, West Bengal faced several industrial challenges, including Partition, loss of hinterland markets, raw-material supply difficulties, labour unrest, infrastructural limitations, policy constraints, and competition from synthetic materials. Chatterjee (2024) identified Partition as a major setback to the state's economic development, while Bandyopadhyay and Basu (2019) noted that administrative complexities, inadequate infrastructure, political intervention, and shortages of skilled labour affected industrial growth. The decline of many jute mills resulted in unemployment,

abandonment of industrial spaces, and weakening of mill-centred communities. Nevertheless, the jute industry remains historically significant because it represents the relationship between colonialism, industrial capitalism, labour migration, urbanisation, environmental change, and regional identity.

II. Review of Literature

S. No.	Author(s) & Year	Aim/Focus of Study	Methodology	Key Findings	Insights for Present Study
1	Mukherjee & Banerji (2025)	Examined expert and community perceptions of industrial heritage in West Bengal	Mixed methods (Content Analysis, Fuzzy Delphi, PCA)	Identified six heritage-value categories and differences between expert and community perceptions	Demonstrates that industrial heritage should incorporate community perspectives for sustainable heritage conservation and urban well-being.
2	Sen (2025)	Investigated jute mills as living industrial heritage	Survey and Correspondence Analysis	Employability, community pride, tourism, accessibility, and willingness to pay differed across occupational groups	Highlights that jute mills remain economically and culturally significant and require participatory conservation strategies.
3	Sen (2025)	Explored industrial heritage as restorative landscapes	Survey of 273 workers; Binomial Logistic Regression	Industrial heritage landscapes positively influence workers' environmental well-being	Shows that industrial landscapes possess environmental and social value beyond economic production.
4	Chatterjee (2024)	Analysed West Bengal's industrial decline and future prospects	Secondary data analysis	Partition, policy constraints, and governance issues contributed to industrial decline; recent recovery observed	Explains historical factors responsible for the transformation of West Bengal's industrial economy after independence.
5	Jarin et al. (2024)	Compared environmental impacts of jute and plastic products	Literature review and comparative environmental assessment	Jute products are biodegradable, renewable, and environmentally superior to plastics	Supports the renewed importance of jute as a sustainable and eco-friendly industrial product.

6	Dasgupta (2023)	Reviewed entrepreneurship development in Bengal	Historical and comparative analysis	Entrepreneurial evolution moved from colonial firms to MSME-led growth	Explains industrial entrepreneurship and business transformation within Bengal's economy.
7	Taukeer (2022)	Studied labour migration from colonial to postcolonial India	Census-based historical analysis	Migration patterns remained largely influenced by economic opportunities across both periods	Provides historical understanding of labour migration that supported Bengal's industrial workforce.
8	Sarkar (2021)	Examined emergence of India's industrial working class	Historical analysis	Labour migration, factory systems, and urban settlements shaped industrial society	Explains the formation of the migrant workforce that became central to Bengal's jute industry.
9	Chakraborty (2020)	Analysed colonial labour movement and working-class formation	Historical review	Colonial industrialisation created an organised working class under exploitative conditions	Demonstrates the socio-economic consequences of industrialisation for labour communities.
10	Bandyopadhyay & Basu (2019)	Evaluated industrial development during the Left Front regime	Policy and economic analysis	Infrastructure deficits, political intervention, and administrative barriers slowed industrial growth	Explains post-independence industrial challenges affecting the jute sector and manufacturing industries.
11	Ranjan & Ramanathan (2018)	Investigated environmental condition of the Hooghly River	Environmental assessment	Industrialisation significantly increased pollution in the Hooghly estuary	Highlights the environmental costs associated with industrial growth in the jute belt.
12	Karak (2017)	Examined industrial growth patterns in West Bengal (1980–1991)	Structural economic analysis	Manufacturing declined while small-scale industries expanded	Explains structural transformation and changing industrial composition of West Bengal.

13	Stewart (2017)	Studied the historical rise of Bengal's jute industry	Historical archival research	Bengal's favourable geography enabled global dominance in jute production	Provides historical evidence for the emergence and expansion of the jute industry.
14	Miyamura (2016)	Analysed labour-market institutions in Indian industries	Field research and institutional analysis	Labour reforms often generated conflicts because institutions reflected competing stakeholder interests	Indicates that labour policies should consider historical and institutional realities rather than formal reforms alone.
15	Wearmouth (2015)	Examined managing agencies in colonial Calcutta's jute industry	Historical case study	Managing agencies maintained industrial control through organisational and strategic mechanisms	Explains colonial business structures and managerial systems responsible for expansion of Bengal's jute industry.

III. Chronology of Industrialization and Its Impact to Jute Industries in West Bengal

Year/Period	Historical Event	Major Developments	Impact on West Bengal	Source
Before 1800	Traditional jute cultivation	Jute was cultivated and used for ropes, mats, sacks, and household textiles.	Established Bengal as the natural centre of jute cultivation due to fertile alluvial soil and humid climate.	Stewart (2017); Government of India Yearbook (1919)
1830–1838	Rise in global demand	Mechanised spinning in Dundee (Scotland) increased demand for Bengal's raw jute.	Bengal became the principal supplier of raw jute to Europe.	Stewart (2017)
1855	First jute mill established	George Acland established the first mechanised jute mill at Rishra, Hooghly.	Beginning of factory-based industrialization in West Bengal.	Stewart (2017); National Jute Board (2024)
1859	Introduction of power looms	Power-driven weaving technology introduced in Bengal.	Increased production of gunny bags and jute fabrics.	Indian Jute Mills Association (IJMA)

1860–1875	Early industrial expansion	Mills expanded rapidly along the Hooghly River.	Formation of the Hooghly industrial belt and employment growth.	Stewart (2017); Wearmouth (2015)
1877	Jute cultivation expanded	Commercial cultivation spread throughout Bengal.	Strengthened the agriculture–industry linkage.	Government of India, Jute Report (1877)
1884	Formation of IJMA	Indian Jute Mills Association established to coordinate production and exports.	Improved industrial organization under British management.	Indian Jute Mills Association (IJMA)
1890–1913	Golden Age of jute	Exports increased significantly and numerous mills were established.	West Bengal emerged as the world's largest jute manufacturing centre.	Stewart (2017); Wearmouth (2015)
1903–1904	Industrial expansion	38 jute mills employed 123,689 workers.	Large-scale employment and labour migration accelerated urbanization.	Census of India (1901–1911); Stewart (2017)
1914–1918	First World War	High demand for military packaging materials.	Record profits and expansion of jute production.	Stewart (2017)
1920–1930	Peak colonial growth	About 98 jute mills, 343,257 workers, and 54,000+ looms.	Jute became India's largest manufacturing industry.	Government of India Industrial Statistics; Stewart (2017)
1930–1935	Great Depression	Declining international demand.	Reduced exports, lower production and financial losses.	Government of India Industrial Reports
1939–1945	Second World War	Military demand revived production.	Temporary recovery of the jute industry.	Stewart (2017)
1947	Partition of India	Most raw-jute producing areas became East Pakistan (Bangladesh), while most mills remained in West Bengal.	Severe raw material shortage and industrial disruption.	Chatterjee (2024); Government of India
1950–1965	Reconstruction period	Government intervention and licensing policies.	Moderate recovery but limited industrial expansion.	Ministry of Commerce & Industry

1965–1985	Industrial decline	Labour unrest, obsolete technology and synthetic substitutes reduced competitiveness.	Closure of several mills and rising unemployment.	Bandyopadhyay & Basu (2019); Karak (2017)
1980–1991	Structural transformation	Small-scale industries expanded while large mills declined.	Declining share of manufacturing in West Bengal's economy.	Karak (2017)
1990–2005	Liberalization	Competition from global markets and Bangladesh intensified.	Modernization efforts initiated but uneven performance continued.	Ministry of Textiles
2005–2015	Diversification	Production of geo-textiles, shopping bags, home furnishings and decorative products.	Revival through value-added jute products.	National Jute Board (2024)
2015–Present	Sustainable industrial revival	Plastic restrictions increased demand for biodegradable jute products.	Renewed importance of West Bengal as India's leading jute manufacturing state.	National Jute Board (2024); Ministry of Textiles; Jarin et al. (2024)

IV. Key Insights of The Study

The historical review demonstrates that industrialization in West Bengal was closely associated with the emergence and expansion of the jute industry, which became one of the earliest and most significant examples of factory-based industrial development in colonial India. The establishment of the first jute mill at Rishra in 1855 marked the beginning of large-scale industrial production and transformed the Hooghly River belt into India's foremost industrial corridor. The industry's growth was supported by Bengal's favourable agro-climatic conditions, abundant raw jute supply, the strategic location of Kolkata Port, railway connectivity, and British investment. The study further reveals that the jute industry played a transformative role in economic development by generating employment, promoting exports, encouraging urbanization, and stimulating the growth of transport, banking, warehousing, and ancillary industries. The emergence of industrial towns such as Howrah, Serampore, Titagarh, Barrackpore, and Naihati reflected the close relationship between industrial expansion and urban growth. Another important finding is that industrialization substantially reshaped labour relations. Large-scale migration from Bihar, Uttar Pradesh, Odisha, and Jharkhand created a multicultural industrial workforce and contributed to the formation of India's organised working class. However, workers experienced long working hours, poor housing, low wages, inadequate welfare facilities, and frequent labour conflicts, which eventually led to the rise of trade union movements. The review also highlights the long-term consequences of colonial industrial policies. Although the jute industry generated considerable wealth and export earnings, ownership

and profits remained concentrated in the hands of British managing agencies, while cultivators and industrial workers received comparatively limited economic benefits. Thus, industrialization simultaneously promoted economic growth and social inequality.

The historical chronology further indicates that Partition in 1947 represented a major turning point. While most jute mills remained in West Bengal, a substantial proportion of raw-jute cultivation shifted to East Pakistan (present-day Bangladesh), creating severe supply shortages and weakening industrial competitiveness. Subsequent challenges, including obsolete machinery, labour unrest, policy constraints, and competition from synthetic packaging materials, accelerated industrial decline. Recent studies demonstrate a renewed appreciation of jute as both an industrial heritage resource and an environmentally sustainable natural fibre. Jute's biodegradable nature, low carbon footprint, and compatibility with global sustainability initiatives have created new opportunities for diversified products such as geotextiles, composites, handicrafts, and eco-friendly packaging. Consequently, the future of the industry depends upon technological modernization, value addition, environmental sustainability, effective labour management, and heritage conservation.

V. Conclusion

The history of industrialization in West Bengal is inseparable from the history of the jute industry, which laid the foundation for modern industrial development in eastern India. Since the establishment of the first jute mill in 1855, the industry has contributed significantly to employment, export earnings, urbanization, infrastructure development, and regional economic growth. The concentration of mills along the Hooghly River transformed West Bengal into one of the world's leading industrial regions during the colonial period and facilitated the emergence of an organised industrial workforce.

However, the benefits of industrialization were accompanied by unequal wealth distribution, labour exploitation, environmental degradation, and dependence on colonial economic policies. The Partition of 1947, competition from synthetic substitutes, technological stagnation, and policy-related constraints further weakened the industry's competitiveness and resulted in the closure of many mills. Despite these challenges, jute continues to possess considerable economic and environmental significance because of its renewable, biodegradable, and eco-friendly characteristics. Growing global demand for sustainable products provides new opportunities for the revitalization of the industry through technological innovation, diversification of jute-based products, improved labour welfare, and industrial heritage conservation. A balanced approach integrating economic development, social justice, environmental sustainability, and policy support is essential for ensuring that the jute industry remains an important contributor to the future industrial development of West Bengal.

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