

The Evolution of the Jute Industry in India: A Historical Analysis

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Abstract:

This research paper investigates India's jute business, documenting its beginnings, expansion, and influence on the economics and society of the country. Jute, sometimes known as the "golden fiber," has long been used in Indian manufacture and trade. It dives into important turning points, scientific advancements, economic shifts, and sociological implications that have shaped the jute industry's history. This article examines how the jute industry has developed and adapted to changing conditions by examining the historical context, legislative acts, and global market dynamics. The Jute Industry saw great expansion in the nineteenth and twentieth centuries, but has faced substantial obstacles in the twenty-first century, including as raw material limitations, the introduction of polymer substitutes, and worldwide rivalry in jute manufacture. Unfortunately, the jute industry has failed, resulting in worker devaluation and catastrophic situations in West Bengal, India's main jute producing state. This research paper will look at the circumstances that led to India's jute culture, its height during British rule, the aftereffects of the 1947 split, and the Indian government's efforts to reinvigorate and preserve the ailing industry both in the state and throughout the country.

Keywords: Jute, growth, economy, market

Background:

Jute has been used since ancient times in Africa and Asia to provide a cordage and weaving fiber from the stem and food from the leaves. In several historical documents (Ain-e-Akbari by Abul Fazal in 1590) during the era of the great Mughal Emperor Akbar (1542 –1605) states that the poor villagers of India used to wear clothes made of jute. Simple handlooms and hand spinning wheels were used by the weavers, who used to spin cotton yarns as well. (History of Jute, 2023). Jute was the monopoly of India and this Bengal industry had a distinct advantage over others because of the availability of cheap labour and raw materials. Till about 1880, Dundee, which had successfully killed the handloom industry of Bengal, controlled the entire market. As soon as the Indian jute mills began to use the best mechanical appliances moved by steam, Dundee was primarily forced to suspend its business not only in the Asiatic and Australian markets but also in a part of the American market. (Shawal). Unlike in Bombay, the export business in Bengal had almost entirely passed out of the hands of the Indians. The necessary infrastructure that an exporter need was conspicuously absent in Bengal. All these deterred Indians to develop jute industry of their own. Export-import trade in most commodities in Eastern India was controlled by the Europeans. Management of railway, coastal shipping and river transport was left into the hands of the British officials. Virtually, the entire organized money market was largely under 'white control.' (Shawal)

West Bengal, Assam, Bihar, Orissa, and Andhra Pradesh are the primary jute-producing states in India. However, due to the greater number of mills, the Indian jute sector is mostly dependent on West Bengal. The jute industry plays an essential role in India's national economy. India is the world's top producer of jute goods, accounting for over 75% of total output. Due to its large domestic market demand, most jute is used domestically, accounting for 90% of total output on average. Jute is one of the cheapest and eco-friendly materials which is fighting its existence. The jute products are decreasing solely due to few reasons like globalization, modernization, poor investment, trade unionism and likewise hassles. (Gangopadhyay, 2023).

Introduction:

The Indian jute industry is a monument to the country's industrial prosperity and economic direction. The jute industry's ascent from humble beginnings to global leader in jute production is a unique narrative that combines economics, technology, and architecture. This research study takes readers on a trip through time to uncover the diverse growth of India's jute industry, with a particular emphasis on its architectural characteristics.

From a colonial-era cash crop to a modern industrial powerhouse, India's jute sector has played a crucial part in its economic history. The architectural environment of jute mills has experienced transformational changes as a result of this growth, reflecting modifications in industrial methods, urban planning, and societal values. These architectural artefacts are living testament to the nation's economic and technical advancement.

Need for research:

1. Examining the jute industry's historical evolution provides useful insights into how industries have changed through time, offering a context for understanding economic movements and developmental trends.
2. Researching the architecture of jute mills and accompanying infrastructure helps preserve a visible link to India's industrial past by demonstrating the progression of design, engineering, and urban planning in the context of production.
3. Examining the historical trajectory of the jute industry gives lessons for modern industries, assisting policymakers and entrepreneurs in making educated decisions by understanding the elements that promote or impede industrial success.
4. Investigating the jute industry's impact on local communities and cultural dynamics allows us to better understand how industries affect societies, allowing us to learn from history while recognizing the social ramifications of industrial progress.

Aim: To investigate the complex link between architectural changes and the evolution of the jute industry, tracking its history from its conception to its current status.

Objective:

1. Provide a comprehensive historical account of India's jute industry, highlighting major milestones, events, and innovations that have affected its progress through time.
2. Investigate the impact of jute production on the morphology of the city.
3. Examine the local, regional, and national economic ramifications of the jute industry's expansion.

4. Investigate the current social, economic, and infrastructural trends in the industry.

Scope of research:

1. The research study delves into the past, present, and future of the jute industry, concentrating on its worldwide significance, production, and consumption.
2. The paper covers the jute industry's issues, such as raw material shortages and the necessity for reformative measures to assure its development and sustainability.
3. The article provides an overview of the Indian jute industry and its potential to enhance the social and economic situations of states and the country.

Limitation of research:

1. The research does not give information on the present state of mills and machinery in the jute sector, as well as the degree of their obsolescence, limiting our understanding of the industry's technological issues.
2. There is no debate about the impact of synthetic fibres on the viability of the jute industry.
3. The study makes no mention of India's anticipated future need for raw jute or the consequences for import dependency.
4. The report does not give a full examination of the social and economic situations of the jute-producing republics.

Identification of research:

1. What is the historical significance of the jute mill industry in Kolkata, and how has it evolved over time?
2. How have changes in technology, economy, and trade affected the industry's decline in Kolkata?
3. What are the key challenges faced by existing jute mills in terms of infrastructure, machinery, and workforce?

Brief literature review:**• Introduction of jute culture in India**

Indian jute manufactures: adaptation and survival in a 'sunset' industry (Das & Bagchi, 2014): In the period of European and North American industrialization, it was perhaps the leading packing material for grain, oilseeds and other bulky materials. Jute cultivation in India began in the middle of the 19th century when the Dundee flax mills were converted into jute processing mills, leading to increased global demand for jute.

Jute and Sustainable Development- A Study of Its Socio-Economic and Environmental Prospects (Chakraborty, 2020), Partition, Migration, and Jute Cultivation in India (Bharadawaj & Fenske, 2010): Jute is a natural fibre mostly cultivated in South Asia. It is a naturally grown fibre crop which is environment friendly and bio- degradable. Jute cultivation has a long history in India, with the country being a major cultivator of jute. The cultivation of jute in India is concentrated in the Ganga delta region, including states like West Bengal, Bihar, Orissa, Assam, Tripura, Meghalaya, Andhra Pradesh and certain parts of South India.

Post-industrial Urban Transformation in a Transitional Metropolis: Implications for Housing Rights and Environmental Justice in Industrial Slum Tenements in Urban Core (Roy & Chatterji): The city's

economic rise was closely linked to its role as a dominant node in the colonial trade route, connecting Europe with China and Southeast Asia, as well as its access to a resource-rich hinterland in northern India.

- **Impact of British rule in the industry**

Jute and Sustainable Development- A Study of Its Socio-Economic and Environmental Prospects (Chakraborty, 2020), Partition, Migration, and Jute Cultivation in India (Bharadawaj & Fenske, 2010): The British rule had a significant impact on the jute industry in India, as they played a crucial role in its development and expansion. During the British colonial period, jute cultivation and production were encouraged and promoted in India to meet the growing demand for jute products in the global market.

Status and Scope of the Jute Industry in India in Comparison to other World Producers (Bag, Kumar, & Pal, Status and Scope of the Jute Industry), Post-industrial Urban Transformation in a Transitional Metropolis: Implications for Housing Rights and Environmental Justice in Industrial Slum Tenements in Urban Core (Roy & Chatterji): Under British rule, jute cultivation expanded, and the industry saw advancements in technology and infrastructure, such as the establishment of jute mills and modern machinery. The British also played a role in the development of jute manufacturing techniques and the export of jute products. However, the British rule also had negative consequences for the jute industry, as it led to the exploitation of jute farmers and workers, who faced low wages and poor working conditions. The jute industry became a major source of revenue for the British colonial administration, leading to the neglect of other agricultural sectors in India.

- **Growth of India as a major Jute producing country**

Jute and Sustainable Development- A Study of Its Socio-Economic and Environmental Prospects (Chakraborty, 2020): India's growth as a major jute producing country has contributed to its socio-economic development and has the potential to address poverty and promote sustainable development.

Status and Scope of the Jute Industry in India in Comparison to other World Producers (Bag, Kumar, & Pal, Status and Scope of the Jute Industry), Post-industrial Urban Transformation in a Transitional Metropolis: Implications for Housing Rights and Environmental Justice in Industrial Slum Tenements in Urban Core (Roy & Chatterji): The suitable topographical conditions in India have made it the preferred sector for raw jute production, leading to its growth as a major jute producing country.

- **Impact of 1947 partition on the industry**

Jute and Sustainable Development- A Study of Its Socio-Economic and Environmental Prospects (Chakraborty, 2020): The jute industry, which was primarily concentrated in the Bengal region, was divided between India and Pakistan due to the partition. The division resulted in the displacement of jute mills and factories, leading to disruptions in production and supply chains. Many jute mills in East Bengal (now Bangladesh) were lost to Pakistan, causing a decline in jute production in India. The partition also led to the migration of skilled workers and technicians, affecting the workforce and expertise in the jute industry. The division of markets and trade routes between India and Pakistan further impacted the export and distribution of jute products.

Post-industrial Urban Transformation in a Transitional Metropolis: Implications for Housing Rights and Environmental Justice in Industrial Slum Tenements in Urban Core (Roy & Chatterji): The division of the country led to the displacement of people and disruption of trade routes, affecting the supply chain and distribution of jute products. The partition also caused political upheaval and economic recession in the state, further impacting the jute industry.

Partition, Migration, and Jute Cultivation in India (Bharadawaj & Fenske, 2010): East Pakistan, which

held a near-monopoly on jute cultivation, imposed export duties and reduced the quality of jute shipped to India, leading to a decline in the supply of raw jute and an increase in its price. Despite these challenges, jute production expanded rapidly in West Bengal after partition, driven in part by the influx of migrants from East Pakistan.

- **Morphology of Kolkata**

Kolkata, a historic metropolis, grew from British colonial influence to become an important commercial and industrial powerhouse. Because of trained workforce, closeness to city resources, and industrial demands, the jute and heavy engineering industries near Kolkata developed. The unusual architecture of the jute mills became synonymous with the city.

Over the last 25 years, Kolkata has seen rapid urbanization because of population pressure from Eastern India, resulting in unplanned settlements and industry. The consequences of this sprawl have ramifications for housing rights and environmental justice.

"The Spoils of Partition" delves into the aftermath of the 1947 partition of Bengal and India, bringing light on the socio-political and economic ramifications, sectarian violence, and identity upheavals that occurred during this revolutionary time.

- **Observations**

1. Emphasis is now being placed on modernizing the jute sector in India to develop a viable and efficient jute manufacturing industry.
2. The area of jute production in India has fluctuated, and there is a need to use scientific cultivation methods and develop diversified products to enhance jute production.
3. The jute industry in India has the unique opportunity to improve the social and economic conditions of the states and the country.
4. The Indian jute industry has world-class research and development facilities, skilled technologists, and developed infrastructures, contributing to its position as the largest producer of raw jute in the world.
5. The industry employed many people, with a significant portion of the population in Calcutta working in jute mills.
6. Jute mills played a significant role in shaping the morphology of Kolkata, particularly during the colonial era.

- **Inference**

India's emphasis on modernizing the jute sector demonstrates the country's dedication to developing a sustainable and efficient jute manufacturing business. There is a recognized need for the implementation of scientific farming methods and the creation of diverse jute products to solve oscillations in jute production. The jute industry in India has a one-of-a-kind chance to improve the social and economic situations of both its states and the country. This potential is strengthened further by the availability of world-class research and development facilities, competent technicians, and well-developed infrastructure, all of which contribute to India's position as the world's largest producer of raw jute. Furthermore, the good impacts of agglomeration economies have drawn a variety of other businesses to the region, including chemicals and rubber. This industrial expansion has resulted in numerous job possibilities, with a sizable section of the Calcutta population employed in jute mills. Notably, the historical significance of jute mills in Kolkata had a significant influence on the city's morphology, especially during the colonial era. However, as cities have grown, green spaces have been converted into human habitations, impacting land use patterns in the area.

Research methodology:

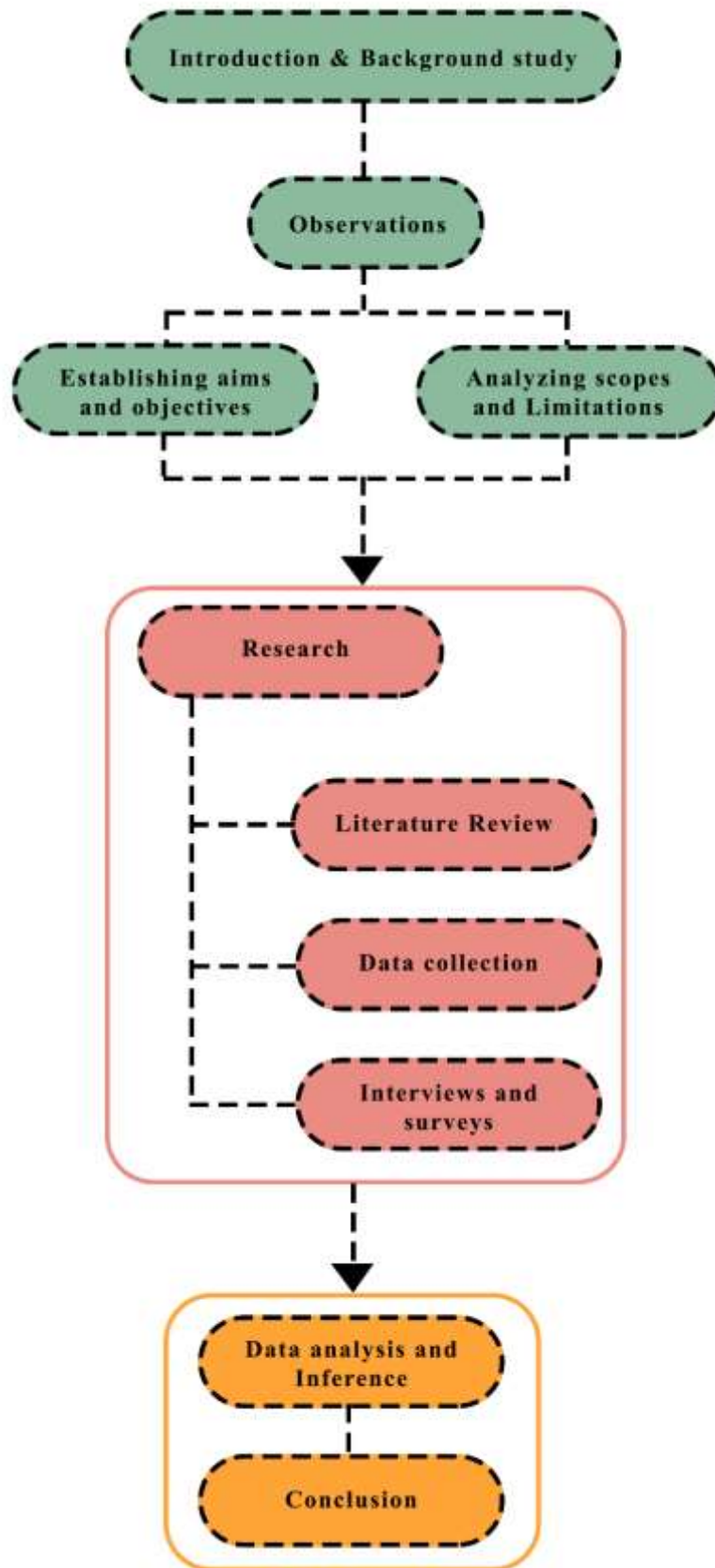


Figure 1: Research process (Source: Author)

1. Jute culture in India

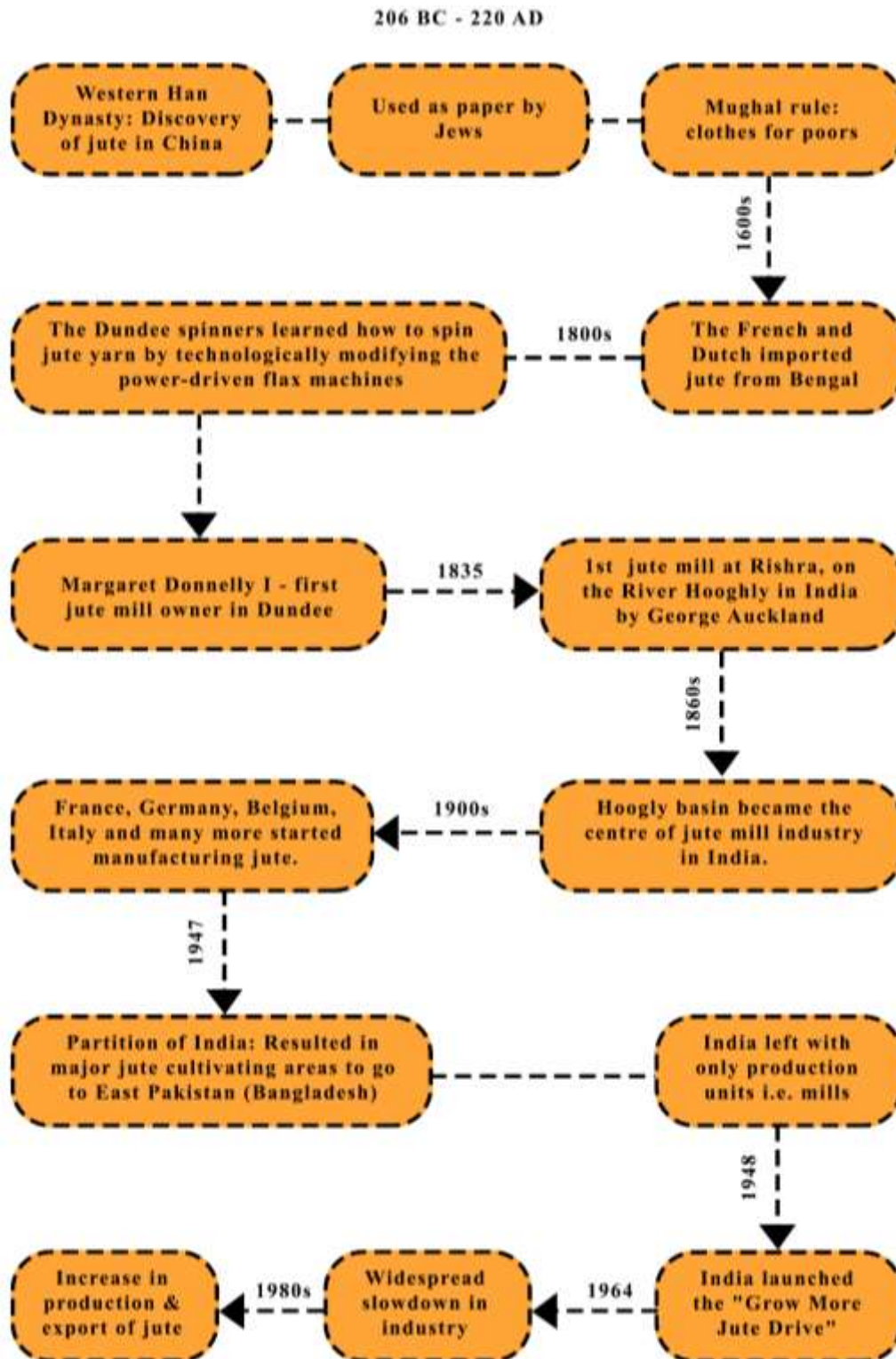


Figure 2: Timeline of Jute (Source: Divulge Jute)

1.1. British rule

From the 17th century until independence in 1857, Bengal's jute history is anchored in British colonial control. The Dutch and French emerged as important jute traders in the 1700s and 1800s, with gunny bags manufactured for Southeast Asian markets. Through cottage industry techniques, indigenous tribes

in Bengal produced jute cloth and crafted gunnies and hessians. Jute was first used in India for cordage and paper manufacture in communities. In the 1830s, Thomas Neigh imported jute to Dundee and successfully processed it, igniting jute textile industry.

The first jute mill, depending on Indian raw jute, was founded in Dundee, Scotland, in 1832. Calcutta had 16 jute mills by 1875, which increased to 21 in the Hooghly industrial zone by 1879-80. Due to resource and labor advantages, India finally surpassed Dundee in jute output by 1909-10. The jute industry had hardships during World Wars I and II, but it persevered thanks to the usage of gunny sacks during the conflict. Following the 1947 partition, jute-growing areas were transferred to East Pakistan, but mills remained in India.

1.2. Effect of setup of jute industry on the morphology of city

The jute industry had a huge impact on Kolkata's urban evolution, with the city emerging as a key center due to its closeness to jute-producing districts in West Bengal. The thriving jute mills fueled rapid growth, resulting in the creation of new industrial zones, warehouses, and transportation hubs. The cityscape was dominated by looming jute mills, and the riverbanks were alive with jute-related activity. As individuals from across India sought opportunities in the city, increasing urbanization brought a varied workforce, changing demography and stimulating cultural interchange. The economic rise and urbanization of the jute industry defined Kolkata's character as an industrial town, having a lasting imprint on its socioeconomic fabric.

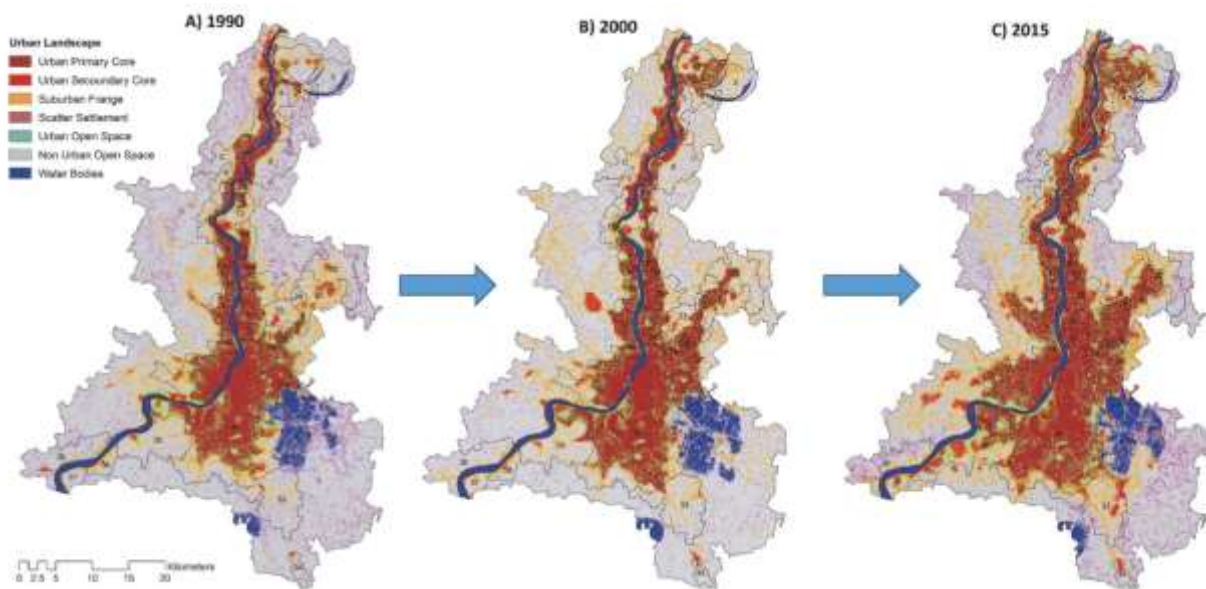


Figure 3: Urban sprawl of Kolkata (Source: (Sahana, Hong, & Sajjad , 2018))

1.3. Post partition

The partition of India in 1947 had a huge impact on the jute sector. Around 80 raw jute producing districts were relocated to East Pakistan (now Bangladesh), while the remaining 20 remained in India. To address the demand-supply imbalance, India launched the "Grow More Jute Drive" in 1948, increasing raw jute output. However, issues remained since many mills' machinery was old, and monies intended for renovation were diverted, leading the industry's financial condition to deteriorate.

However, the sector experienced a widespread slowdown in Indian industry from 1964-65, which had an influence on output. Furthermore, the loss of the jute-producing hinterland because of India's partition in 1947, freight equalization policies, leftist insurgency, industrial unrest, and militant trade unionism can all be attributed to the decline in industrial activities in the Kolkata metropolitan region.

Despite these obstacles, the Indian jute sector is looking for chances in anti-dumping duties, development into overseas markets such as the United States, and pushing jute as an environmentally friendly option in a variety of consumer products. These steps are intended to keep the sector growing and resilient in the face of changing economic and political circumstances.



Figure 4: Jute producing states in India (Source: IJMA)

1.4. Current condition of jute industry

The jute sector saw varying growth rates in production, physical capital, employment, and real emoluments throughout a decade of industrial policy reforms in line with India's structural adjustment program. Fitting trend curves become inadequate for determining growth rates due to irregular patterns. Analyzing logarithmic statistics indicated that the spinning and weaving industry saw a dramatic increase in output in 2002, following a big decrease the previous year, then leveling for a few years before growing again after 2006. Other industries had comparable production fluctuations. The initial investment in equipment and machinery was reduced, but the investment in spinning and weaving was later increased. In the first half of the decade, employment increased with variable absorption rates. Real emoluments increased consistently for all employees, reflecting stable pay rates. Some jute employees were forced to abandon their positions or accept early retirement due to changing job dynamics.

1.4.1. Workforce

Kolkata's once-thriving jute industry is today facing complicated socioeconomic issues. This historically significant industry has left an indelible mark on the culture and economics of the city. However, changing global market dynamics, technology breakthroughs, and shifting consumer tastes have raised several social concerns. These include labor conditions, employment stability, environmental sustainability, and the significance of the sector in the larger socioeconomic context of Kolkata. Because of economic challenges in their home states, the sector's early reliance on migrant labor from regions such as Odisha and Bihar resulted in a transitory and fragile workforce. Low pay, bad working conditions, and job insecurity forced these employees to rely on loans for everyday needs, dowries, healthcare, and property acquisition, further entrenching economic inequality.

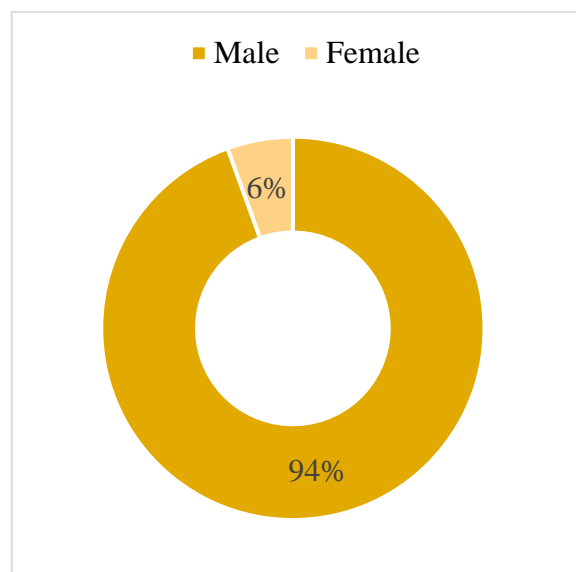


Figure 7: Gender distribution

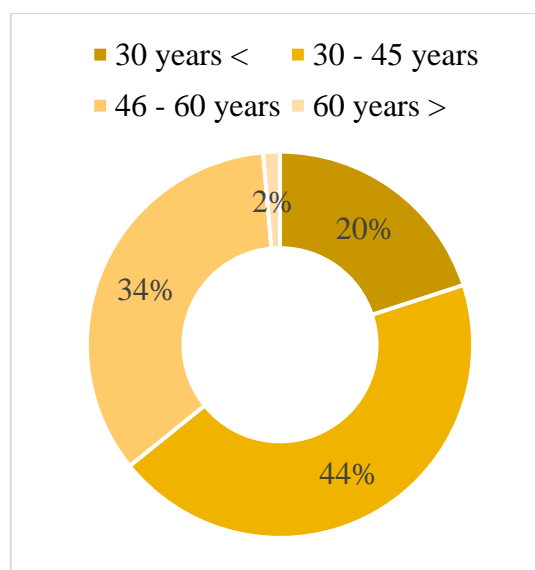


Figure 8: Age distribution

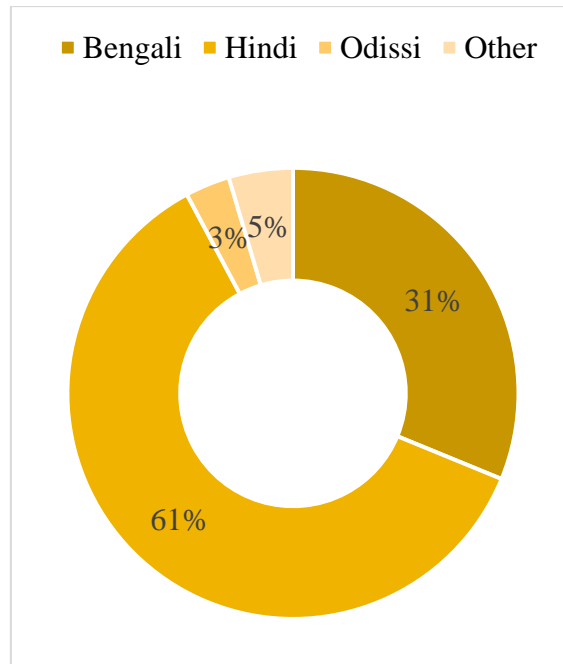


Figure 5: Migration of jute laborer

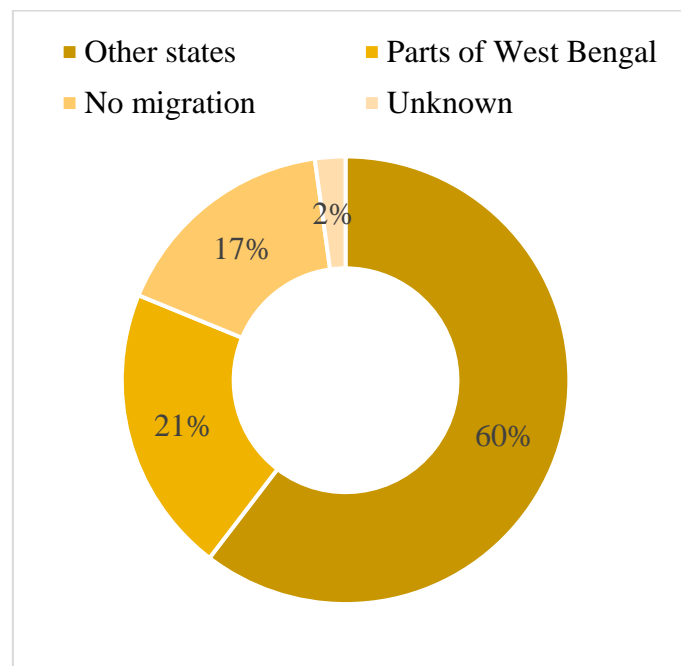


Figure 6: Mother tongue of laborer

(Source: (Foundation, 2016))

1.4.2. Mill housing

Kolkata's jute mills, which directly employ 230,000 people and indirectly support 4,000,000, are facing housing issues. According to a 2015 survey, there are three primary groups: permanent employees (44.6%) own their homes, temporary workers (42.6%) live in mill quarters, and budli/special budli workers (35.2%) rent in the private market. The majority pay monthly rentals ranging between Rs. 101 and Rs. 500. Housing for jute mill employees, which was originally intended for single males, is sometimes tight and in disrepair, with no separate kitchens or sanitation. Concerns about permanent

displacement, as well as owner discretion in restorations, stymie redevelopment. On-site and off-site accommodations usually lack privacy and basic cleanliness.

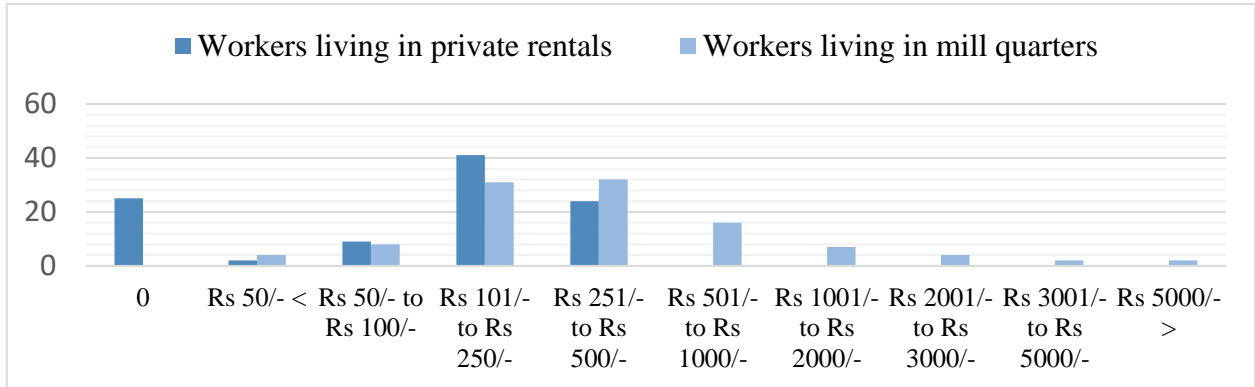


Figure 9: Rent paid by jute mill workers for accommodation (Source: (Foundation, 2016))

	Owned		Mill quarter		Private rent		Other		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Total HH	181	36.2	139	27.8	179	35.8	1	0.2	500	100
Separate kitchen	85	47	11	7.9	25	14	0	0	121	24.2
With electricity	176	97.2	136	98	169	94.4	1	100	482	96.4
With family	177	41.3	99	23.1	152	35.4	1	0.2	429	100
Average no. of room	2.2		1.1		1.3		1		1.5	

Table 1: Physical characteristics of dwelling type of jute mill labors (Source: (Foundation, 2016))

1.4.3. Connectivity

Kolkata's transit history is similar to that of India, since it was initially constructed for pedestrians and mass transit. The Kolkata Metro, India's first urban rail mass transport system, and the city's 130-year-old tram service are permanent reminders of the city's transit past. As the city of Kolkata grew, so did its transit system. Kolkata's transportation system now combines private and public mass transit. Despite a modest road network representing 5.5% of the area, road-based mass transportation dominates, with private buses leading the way, carrying 9.4 million passengers every day. Around 20% of the population is served by paratransit, which includes rickshaws and taxis. Rail-based public transportation predominantly serves suburban commuters, whereas water-based public transportation is underused. Despite its pedestrian-friendly architecture, Kolkata has experienced an increase of motorized cars. Despite having lower vehicle ownership than cities such as New York and Mexico City, it has the greatest automobile density among Indian cities. The growing number of private cars, particularly taxis, raises issues about congestion and sustainability, underlining the need for enhanced transportation connections.

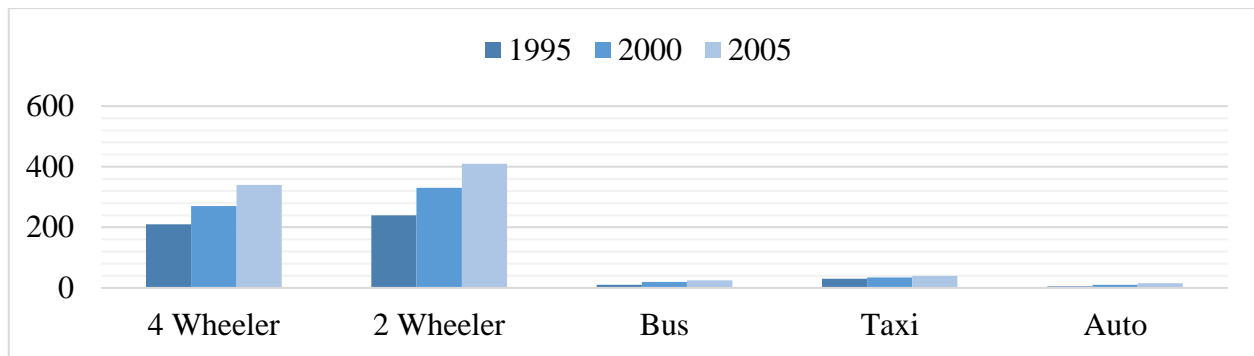


Figure 10: Growth in motorized vehicle from 1995 – 2005 (Source: Surajit Bhattacharya)

Observations

1. Jute Industry in India: The jute industry in India has a long history, with a strong presence in Bengal. It has progressed from a tiny business to a big worldwide manufacturer of jute items throughout time.
2. Jute sector obstacles: The jute sector has a variety of obstacles, including fluctuating demand, labor concerns, legislative changes, and competition from alternative materials such as sisal hemp and flax.
3. Transportation and Connectivity in Kolkata: Kolkata has a well-developed transportation infrastructure, however there are gaps in connectivity between different forms of transportation, notably between water-based and land-based systems.
4. Poor Housing Conditions for Workers: Workers in the jute business are frequently housed in tight, poorly ventilated quarters, which can have a negative impact on their health and well-being. This housing scenario is in stark contrast to Kolkata's historical significance as a trade post city with a powerful inland shipping infrastructure.

Conclusion

Finally, the investigation of different areas, such as the jute industry, transportation and connectivity in Kolkata, worker housing conditions, and Indian jute exports, exposes a diverse tapestry of obstacles and potential. The jute industry, which has a long history in India, has grown to become a significant worldwide player, but not without its hurdles, which range from labor concerns to competition from other materials. Kolkata's transportation infrastructure is solid, but it must be upgraded in terms of connection. Meanwhile, jute workers' inadequate living circumstances highlight the significance of solving social and infrastructural challenges. On the plus side, India's jute exports have been steadily increasing, particularly in categories such as jute diversified products (JDP), adding considerably to the country's economy. These findings highlight the jute industry's resilience and potential, urging smart interventions to capitalize on its strengths and alleviate its vulnerabilities to ensure a sustainable and profitable future.

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