



An analytical Study on the Sustainability of Jute Industry: A Qualitative Approach in Case of Andhra Pradesh State

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Abstract: *This critical analysis examines the sustainability of the jute industry in Andhra Pradesh, focusing on its economic, social, and environmental dimensions. The jute industry plays a significant role in the region's economic development, providing employment, generating export earnings, and supporting rural livelihoods. However, sustainability challenges exist, including market demand fluctuations, competition from synthetic fibers, and outdated infrastructure. Social sustainability considerations encompass employment generation, labor conditions, and worker welfare. Environmental sustainability concerns relate to responsible raw material sourcing, waste management, and pollution control. Through a thorough examination of these dimensions, this analysis identifies key factors influencing the sustainability of the jute industry in Andhra Pradesh. It highlights the importance of market demand, competitiveness, supply chain infrastructure, fair labor practices, and environmental responsibility. The findings emphasize the need for collaboration among industry stakeholders, policymakers, and local communities to enhance the industry's sustainability. By understanding the strengths, weaknesses, opportunities, and threats facing the jute industry, informed strategies can be developed to overcome challenges and promote long-term sustainability. This analysis serves as a valuable resource for policymakers, industry stakeholders, and researchers seeking to foster the sustainability of the jute industry in Andhra Pradesh, ensuring its continued contribution to economic growth, social well-being, and environmental conservation.*

Keywords: *Jute Industry, SWOT Analysis, Sustainability, competitive analysis, Andhra Pradesh.*

1. Introduction

The jute industry in Andhra Pradesh is an important sector that contributes significantly to the economic growth and development of the region. Jute, a natural fiber derived from the jute plant, is widely used in the production of various products such as sacks, bags, textiles, and handicrafts. The industry provides employment opportunities, particularly in rural areas, and plays a crucial role in the livelihoods of local communities.

However, the sustainability of the jute industry in Andhra Pradesh is a matter of concern. Sustainability refers to the ability of an industry to meet present needs without compromising the ability of future generations to meet their own needs. It encompasses economic, social, and environmental aspects that must be carefully analyzed to determine the industry's long-term viability.

This critical analysis aims to delve into the sustainability of the jute industry in Andhra Pradesh by critically examining various factors and challenges. It will explore the economic sustainability of the industry in terms of market demand, competitiveness, and supply chain infrastructure. The social sustainability aspect will focus on employment generation, labor conditions, and welfare of workers. Lastly, the environmental sustainability dimension will address natural resource management, waste management, and pollution control.

The jute industry plays a crucial role in the economic development of Andhra Pradesh, contributing to employment generation, export earnings, and rural livelihoods. However, the sustainability of the jute industry in the region is subject to various factors and challenges. This critical analysis aims to evaluate the sustainability of the jute industry in Andhra Pradesh by examining its economic, social, and environmental dimensions.

The sustainability of the jute industry relies on market demand and its ability to compete with synthetic fibers. Fluctuations in global demand for jute products and the rise of cheaper alternatives can impact the economic viability of the industry. Adequate market research, product diversification, and value addition can help ensure sustainability.

The efficiency of the jute industry's supply chain, including raw material availability, transportation, and processing facilities, is crucial for sustainability. Inadequate infrastructure, outdated machinery, and logistical constraints can hinder productivity and competitiveness, requiring investments in modernization and improved connectivity.

The jute industry provides employment opportunities, particularly in rural areas, contributing to the socio-economic well-being of local communities. However, mechanization and labor-intensive challenges may result in job losses and reduced livelihood options. Balancing technological advancements with social welfare measures is essential for social sustainability.

Ensuring fair wages, safe working conditions, and social security benefits for jute industry workers are integral to social sustainability. Compliance with labor laws, promoting worker participation, and addressing issues related to occupational health and safety are essential considerations.

Sustainable sourcing of jute raw materials and responsible agricultural practices are crucial for environmental sustainability. Overreliance on chemical fertilizers and pesticides can harm soil quality and biodiversity. Encouraging organic cultivation, promoting crop rotation, and adopting sustainable land management practices can mitigate environmental impacts.

The jute industry generates waste in the form of fibers, dust, and effluents. Proper waste management systems, including recycling and treatment facilities, are necessary to minimize pollution and ensure environmental sustainability. Encouraging cleaner production techniques and promoting eco-friendly practices can further enhance sustainability.

By critically analyzing these dimensions, this study aims to provide insights into the strengths and weaknesses of the jute industry in Andhra Pradesh

and identify potential strategies and measures to enhance its sustainability. The findings of this analysis can inform policymakers, industry stakeholders, and local communities about the actions needed to ensure the long-term success and viability of the jute industry in the region.

2. Objectives of the study

The objectives of the study are

1. To identify and understand the strengths and weaknesses of jute industry with reference to Andhra Pradesh state.
2. To assess the factors influencing the sustainability of Jute industry in Andhra Pradesh

3. Literature Review

Jute is used to make twine, rope and mat. In combination with sugar, the possibility of using jute to build aero plane panels has been considered. Jute matting is used to prevent flood erosion while natural vegetation becomes established. For this purpose, a natural and biodegradable fiber is essential. Jute is used chiefly to make cloth for wrapping bales of raw cotton and to make sacks and coarse cloth, Jute fibers are also being used to make pulp and paper. Jute is used in the manufacture of a number of fabrics, such as Hessian cloth, Sacking, Scrim, Carpet backing cloth and Canvas. Diversified jute products are becoming more and more valuable to people, because it is being used to make Espadrilles, Soft Sweaters. After coverings home textiles, Geo textiles, Composites and more. Its UV protection, sound and Heat insulation low thermal conduction and anti-static properties make is a wise choice of people (Pan, N.C., 2001)

Jute industry is depended on huge and cheap labour. It supports round 40 lakh farm families and provides direct employment to 2.6 lakh industrial workers and 1.4 lakh in the tertiary sector (<https://www.google.co.in/amp/s/www.gktoday.on/gk/jute-industry-of-india/amp/>).

It was dependent on migrant labours from the initial days. The industry attracted immigrant labours from outside of West Bengal, especially from Orissa and Bihar. The Royal Commission observed that "Few industrial workers would remain in industry if they procure sufficient food and clothing in the village (Whitely, J. H. 1931).

They failed to get adequate employment and subsistence in the rural economy. Thus these migrants remained villagers at heart and retained a close homes (Bhattacharya. N. 1973).

The workers who joined the mills were generally uneducated and untrained for any specific job. Moreover the system of recruitment was informal in the beginning and their wage was comparatively lower than other industry (IBID).

Koppala Venugopal et al. (2017) has concluded that the significance of marketing mix elements execution on the sustainability of any business is highly impacting and the success of sales will be the main objective of any company which should be made in the marketing environment.

The structural change took place in favour of capital that increased profit rate by increasing workload per worker significantly. Structural breaks took place in skilled-unskilled employment growth and in wage differentials. In many cases, workers were increasingly displaced by capital without affecting output growth of the industry. The study of the post- independence performance of the Indian jute industry only partially supports the hypothesis that technical advance is the major driver of creative destruction in industries (Bagchi, Amiya & Das, Panchanan 2014).

Venugopal, K. et al. (2015) explored the progression of the businesses associated with all family members in a business and how this family business can sustain for a long run is made imperative in their study at the standpoint of marketing bottlenecks.

Exports of other jute-related products such as jute yarn, twine, sacks, bags, man-made filaments and staple fibres have been done. Narrowly, the exports of jute yarn twine and diversified jute products have increased up. Thus Jute exports have been increased by 31% in FY21 (Islam, R., and Shishir, J.A., 2021)

Jute can be utilized for filter-clothes, boots and shoe-linings, and tarpaulin materials. However it has contained some unsophisticated idea such as a dress fabric. There are some traditional uses of jute products such as jute yarn, jute ropes, jute CBC, jute carpets, jute hessian (Ullah, A.A. and Foisal, A.B.M., 2021).

Venugopal, K., & Swathi Konchada (2014) indicated that the sustainability of any business depends upon the raw material which should be preserved with high optimisation as far the usage of the natural resources is concerned.

Heavy investment in research and development is needed. In Bangladesh many creative and young manpower exits but investment is the main constraint. Jutes are not purchased directly from the farmers and it happens because of bureaucratic mismanagement of crooked officers as mentioned earlier. This mismanagement leads to the increase of higher production cost of jute products (Tithi, N., 2019).

According to Islam, M.M. (2013), there some challenges of jute industry that this industry has faced before covid-19. The farmers of Jute, more narrowly the farmers of jute at primary level, are encountered a puzzle of interconnected hurdles that have two main impacts. The first one is hostile market rate and the second one is producing inefficiently such as lower-productivity and higher-cost). As a result, jute farmers are poor as their earning from jute-sector is not much.

According to the interviewed firms, some recommendations given are the Jute products producers should focus on diversified jute products and jute uses and there should be strict maintenance between private and public jute mills and therefore government should focus on these both sectors (Islam, Md. 2022).

Koppala Venugopal and Saumendra Das (2022) specified in their study about the sustainability of any MSEs is highlighted by its operational efficiency and the challenges faced by the manufacturing units in Andhra Pradesh has had its specific problems in common. Satyanarayana, A.V., & Koppala Venugopal (2019) explained about the cost effectiveness being neglected by micro, small and medium sector which is a parameter for the sustainability also and they also suggested that the reverse logistics strategies may also be taken up for the cost control.

4. Methodology of the study

The methodology of this study was with exploratory design and qualitative approach. The researchers have carried out this research through secondary data of the material from books

connected to the topic, media, newspapers, pedagogical pieces, reports from industry-based websites, and research publications.

5. SWOT analysis of the jute industry in Andhra Pradesh:

Strengths:

Abundant Raw Material: Andhra Pradesh has favorable agro-climatic conditions for jute cultivation, providing a steady supply of raw materials for the industry.

Established Infrastructure: The state has a well-developed infrastructure, including jute mills, storage facilities, and transportation networks, supporting the efficient processing and distribution of jute products.

Skilled Workforce: Andhra Pradesh benefits from a skilled labor force with expertise in jute processing techniques, contributing to the industry's productivity and quality.

Export Potential: The jute industry in Andhra Pradesh has significant export potential, with opportunities to tap into global markets and cater to the growing demand for eco-friendly and sustainable materials.

Weaknesses:

Market Volatility: Fluctuations in market demand for jute products and competition from synthetic fibers can impact the industry's growth and profitability.

Technological Obsolescence: Outdated machinery and a lack of technological advancements in some jute mills can hamper productivity and hinder the industry's ability to meet quality and cost-efficiency standards.

Limited Product Diversification: The industry's heavy reliance on traditional jute products, such as sacks and bags, limits its ability to capitalize on evolving consumer preferences and market trends.

Environmental Concerns: The jute industry may face challenges in addressing environmental concerns related to waste management, pollution control, and sustainable cultivation practices.

Opportunities:

Growing Demand for Sustainable Materials: Increasing awareness and demand for eco-friendly and sustainable materials present opportunities for the jute industry to position itself as an attractive alternative to synthetic fibers.

Product Innovation and Diversification: Exploring new product lines, such as jute-based textiles, handicrafts, and value-added products, can expand market reach and cater to a broader customer base.

Export Market Expansion: There are opportunities to explore new export markets and forge trade partnerships to increase the industry's presence in the global marketplace.

Government Support and Policies: Favorable government policies, financial incentives, and support for research and development initiatives can create an enabling environment for industry growth and innovation.

Threats:

Competition from Synthetic Fibers: The jute industry faces competition from synthetic fibers that offer lower costs and diverse applications. This can impact the demand for jute products and market share.

Price Fluctuations: Variations in raw material prices, especially during volatile market conditions, can affect the industry's profitability and viability.

Changing Consumer Preferences: Evolving consumer preferences and trends towards alternative materials may impact the demand for jute products, necessitating product diversification and marketing strategies.

Regulatory Compliance: Stringent environmental regulations and labor standards can pose challenges for the industry, requiring investments in waste management, pollution control, and labor welfare measures.

By identifying these strengths, weaknesses, opportunities, and threats, the jute industry in Andhra Pradesh can develop strategies to leverage its strengths, overcome weaknesses, capitalize on opportunities, and mitigate threats. This analysis can assist industry stakeholders, policymakers, and other relevant entities in making informed decisions and implementing measures to enhance the industry's competitiveness and sustainability.

6. Competitor analysis of the jute industry in Andhra Pradesh:

Competitor Identification: Identifying the key competitors in the jute industry is crucial for understanding the competitive landscape. This includes both domestic and international competitors involved in the production and distribution of jute products. Competitors may include other jute mills, manufacturers, and suppliers operating in Andhra Pradesh or in other regions.

Market Share and Position: Analyzing the market share and position of competitors helps in understanding their relative strength and market presence. This involves examining factors such as sales volume, revenue, and customer base. Companies with a significant market share and strong brand recognition may have a competitive advantage.

Product Portfolio: Assessing the product portfolio of competitors provides insights into their range of jute products, their quality, and any unique selling propositions. Understanding the diversity and innovation in their product offerings helps identify areas for improvement or opportunities for differentiation.

Pricing Strategy: Analyzing the pricing strategies of competitors helps in understanding their pricing models, pricing tiers, and any discounts or promotions offered. This information can guide pricing decisions and strategies to remain competitive in the market.

Distribution Channels: Understanding the distribution channels utilized by competitors provides insights into their market reach and customer accessibility. This includes examining whether competitors rely on direct sales, partnerships, wholesalers, or online platforms. Identifying any gaps or untapped distribution channels can help in expanding market reach.

Brand Image and Marketing: Analyzing the brand image and marketing strategies of competitors helps in understanding their positioning in the market and customer perception. This includes examining their advertising campaigns, online presence, social media engagement, and customer reviews. Identifying effective marketing tactics and areas for improvement can guide marketing efforts.

Technological Advancements: Assessing the technological advancements adopted by competitors provides insights into their efficiency, productivity, and ability to meet market demands. This involves analyzing their machinery, automation, and digitalization efforts. Understanding competitor technology can guide decisions regarding process optimization and investments in modernization.

Financial Performance: Examining the financial performance of competitors helps evaluate their profitability, growth rate, and financial stability. This involves reviewing their financial statements, annual reports, and key financial indicators. Understanding competitor financials can provide insights into their overall strength and resilience in the market.

Industry Trends and Innovation: Keeping abreast of industry trends and innovations allows for a comparative analysis of competitors' responsiveness to market changes. This involves monitoring new product developments, technological advancements, sustainability initiatives, and market trends. Identifying industry leaders and their strategies can inspire innovation and improvements within the jute industry.

By conducting a comprehensive competitor analysis, the jute industry in Andhra Pradesh can gain valuable insights into the strengths, weaknesses, and strategies of its competitors. This knowledge can inform decision-making processes, help identify opportunities for differentiation, and guide efforts to enhance competitiveness in the market.

7. Factors influencing the growth of jute industry in A.P. state

Several factors influence the growth of the jute industry in Andhra Pradesh. These factors can be categorized into internal factors and external factors. Let's explore them in detail:

2.1. Internal Factors:

Availability of Raw Materials: The availability of jute as a raw material is a crucial factor influencing the growth of the jute industry. Andhra Pradesh benefits from favorable agro-climatic conditions for jute cultivation, making it conducive for the production of jute fiber. The presence of jute-

growing regions in the state ensures a steady supply of raw materials for the industry.

Infrastructure: The presence of robust infrastructure, including processing mills, storage facilities, and transportation networks, is vital for the growth of the jute industry. Adequate infrastructure ensures efficient handling, processing, and distribution of jute products. Upgraded machinery and modernized facilities contribute to improved productivity and competitiveness.

Skilled Workforce: The availability of a skilled workforce with knowledge of jute processing techniques and machinery operation is essential for the growth of the industry. Skilled labor ensures the smooth operation of jute mills and facilitates the production of high-quality jute products. Investment in training and skill development programs can further enhance the workforce's capabilities.

External Factors:

Market Demand: The growth of the jute industry is influenced by the demand for jute products in domestic and international markets. Factors such as changing consumer preferences, market trends, and government policies regarding the use of eco-friendly and sustainable materials can impact the demand for jute products. Identifying and capitalizing on emerging market opportunities is crucial for industry growth.

Export Potential: The export market plays a significant role in the growth of the jute industry in Andhra Pradesh. The industry's ability to tap into global markets and meet international quality standards affects its growth prospects. Encouraging exports, exploring new markets, and promoting trade agreements can boost the industry's growth trajectory.

Government Support and Policies: Government policies and support measures have a substantial impact on the growth of the jute industry. Initiatives such as subsidies, financial incentives, research and development support, infrastructure development, and favorable regulatory frameworks can foster a conducive environment for industry growth. Policy stability and continuity are vital for long-term sustainability.

Technological Advancements: Embracing technological advancements and innovation can significantly influence the growth of the jute industry. Adoption of modern machinery, automation, and process optimization techniques can improve productivity, quality, and cost-effectiveness. Encouraging research and development activities and promoting technology transfer can enhance the industry's competitiveness.

Environmental Awareness: Growing environmental concerns and the demand for sustainable and eco-friendly materials create opportunities for the jute industry. Increased awareness of the negative impacts of synthetic materials has led to a renewed interest in jute as a biodegradable and renewable alternative. The industry's ability to position itself as an environmentally responsible choice can drive its growth.

These factors, both internal and external, interact and shape the growth trajectory of the jute industry in Andhra Pradesh. Understanding and effectively addressing these factors through strategic planning, policy interventions, and industry collaborations are essential for sustainable growth and development of the jute industry in the state.

8. Discussions:

The sustainability of the jute industry in Andhra Pradesh is a multifaceted issue that requires careful consideration of economic, social, and environmental factors. Through the analysis conducted, several key points emerged:

Economic Sustainability:

Market demand and competitiveness play a vital role in the sustainability of the jute industry. Fluctuations in global demand and competition from synthetic fibers can impact the industry's economic viability. Strategies such as market research, product diversification, and value addition can enhance competitiveness.

The availability of a robust supply chain infrastructure is essential for sustained growth. Investment in modernization, transportation networks, and processing facilities can improve efficiency and competitiveness.

Social Sustainability:

The jute industry in Andhra Pradesh provides employment opportunities, particularly in rural areas, contributing to the socio-economic well-being of local communities. However, mechanization and labor-intensive challenges may lead to job losses. Balancing technological advancements with social welfare measures is crucial for social sustainability.

Ensuring fair wages, safe working conditions, and social security benefits for workers is necessary to maintain social sustainability. Compliance with labor laws, worker participation, and addressing occupational health and safety concerns are important considerations.

Environmental Sustainability:

Sustainable sourcing of jute raw materials and responsible agricultural practices are critical for environmental sustainability. Encouraging organic cultivation, promoting crop rotation, and adopting sustainable land management practices can mitigate environmental impacts.

Proper waste management systems, including recycling and treatment facilities, are necessary to minimize pollution and ensure environmental sustainability. Emphasizing cleaner production techniques and eco-friendly practices can further enhance sustainability.

9. Conclusions:

The sustainability of the jute industry in Andhra Pradesh requires a comprehensive approach that addresses economic, social, and environmental dimensions. Key conclusions drawn from the analysis are as follows:

Economic sustainability relies on market demand, competitiveness, and a robust supply chain infrastructure. Strategies such as diversification, value addition, and modernization can enhance the industry's economic viability.

Social sustainability necessitates a balance between technological advancements and social welfare measures. Ensuring fair labor conditions, job opportunities, and worker participation are vital for the industry's long-term sustainability.

Environmental sustainability requires sustainable sourcing of raw materials, responsible agricultural practices, and proper waste management.

Emphasizing eco-friendly practices and promoting cleaner production techniques can reduce the industry's environmental impact.

To achieve long-term sustainability, collaboration among industry stakeholders, policymakers, and local communities is essential. The implementation of supportive government policies, investments in infrastructure and technology, and continuous innovation are critical for the jute industry in Andhra Pradesh to thrive sustainably. By addressing these challenges and adopting sustainable practices, the jute industry can contribute to the region's economic development while minimizing its environmental footprint and ensuring the well-being of its workforce and communities.

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