Constraints faced by the coir workers and the coir co-operative societies in the production of coir yarn in Alappuzha and Kollam districts of Kerala

ABSTRACT

The research aimed to identify and analyse the constraints faced by the coir workers and the coir cooperative societies throughout the coir yarn production process. Alappuzha and Kollam districts were selected for the study because the coir yarn production in Kerala is concentrated mainly in these districts. A total of 60 coir co-operative societies (30 from each district) were selected randomly. Four coir workers were randomly chosen from each society, totalling 240 coir workers. Both the workers and the secretaries of these cooperative societies provided insights into the key obstacles impeding coir yarn production. These constraints were ranked using Garrett's ranking technique. The coir workers highlighted some major constraints such as health problems related to the work, inadequate wages, irregular employment, and absence of job security and retirement benefits. Coir yarn production within Kerala's cooperative sector faced numerous challenges, major ones being shortage of labour, delayed payments from Coirfed for the coir sold by the co-operative societies, lack of financial support from higher organizations/inadequate funding, and lack of active workers. This method provided a detailed understanding of the barriers impacting both the workforce and the operations of the cooperatives. The findings of this study will assist policymakers and authorities in implementing targeted interventions to enhance coir yarn production within the cooperative sector.

Keywords: Coir cooperative societies, Coir workers, Coir yarn production, Constraints, Garrett ranking technique

1. INTRODUCTION

The word "coir" is thought to have originated from the Malayalam term "Kayar," which comes from the verb "Kayaru," meaning "to twist". This was later adapted into Portuguese as "coire." Coir, a flexible natural fibre, is obtained from the mesocarp or husk of coconut. Often referred to as "The Golden Fibre" due to its characteristic golden hue after cleaning, coir is regarded as a fibre of the future (Coir board, 2014). India generates over two-thirds of the global coir and coir products. India, together with Sri Lanka, contributes approximately 90 percent of the world's coir fibre production. India's annual output is around 3,50,000 metric tons (MT) of coir fibre. The 2020 coir production data from various Asia-Pacific countries reveals that India was in the first position with an output of around 587,000 tons. Vietnam secured the second spot with 390,000 tons, while Sri Lanka ranked third, contributing 161,000 tons to the overall

coir production. India's coir production significantly outpaced both Vietnam and Sri Lanka, with India's output being nearly 1.5 times that of Vietnam and more than three times that of Sri Lanka's production. This prominence emphasizes India's pivotal role in the development of the coir industry (Statista Research Department, 2024). Coir is among India's most ancient industries, playing a pivotal role in the economies of the leading coconut-producing states such as Maharashtra, Karnataka, Andhra Pradesh, Kerala, Tamil Nadu, Goa, Assam, Odisha, Andaman & Nicobar, Puducherry, Lakshadweep, and others (India Brand Equity Foundation, 2024). Coir products from Kerala have been certified with the "Eco Mark" by the Ministry of Environment and Forests, Government of India, signifying their eco-friendly nature. Considered among the finest globally, Kerala's coir and its products are in high demand due to the global trend toward eco-friendly goods. Coir is known for its toughness, durability, versatility, and resilience. Classified as an industrial hard fibre, coir offers a range of practical benefits (Press Information Bureau, 2024). The coir sector stands as the leading traditional industry in Kerala. The entire coir industry can be divided into three segments: fibre extraction, spinning, and product manufacturing. The fibre extraction and spinning segments are predominantly managed by cooperatives, whereas the product manufacturing segment operates mainly in factory settings with a significant presence of private entrepreneurs and exporters. The coir industry holds significant importance in Kerala due to its contribution to export earnings (GOK, 2023).

After independence, Kerala's coir industry struggled as foreign-owned factories shut down, leading to worker-led cooperatives that lacked business expertise. Modernization was slow due to resistance to mechanization until the 1990s, and also competition from synthetic alternatives and labour shortages pushed for innovation. While new processes and products have been introduced, their impact on household sectors is limited. The small and cooperative units of coir in Kerala are in crisis due to issues such as rising raw material costs, low productivity, labour shortages, and competition from other states like Tamil Nadu (Bhavan and Bhavan, 2016). Various constraints faced by the coir industry in Kerala includes shortage of labour, inadequate government support for traditional methods, and labourers encountering issues like low wages and health problems (Ashik, 2018). The constraints faced by the workers who are involved in coir spinning in Kerala are inadequate wages, inconsistent supply of raw materials, difficulties in imparting technological advancements to workers, substandard working conditions, health issues related to their work, seasonal unemployment, and more (Vinil, 2014). A study on the constraints faced by coir workers and the cooperative societies is crucial for policymakers to address labour shortages, and financial challenges in coir yarn production. It can guide the development of targeted policies that enhance productivity, promote mechanization, and improve competitiveness, while ensuring sustainable livelihoods for rural communities. This will ultimately help strengthen Kerala's coir sector and boost its global market presence.

2. MATERIALS AND METHODS

The research was carried out in the districts of Alappuzha and Kollam in Kerala. Alappuzha and Kollam districts were purposively selected for the study because they have the largest number of coir cooperatives, particularly in the yarn production sector, which made them ideal for examining the cooperative model's performance. 30 coir co-operative societies were randomly selected from each

district, ensuring balanced representation across the two regions. From Alappuzha district, the societies from Kayamkulam and Cherthala were selected as they have the largest number of coir co-operative societies in the coir yarn sector. From Kollam district, the societies from Karunagappally, Perinad, Kundara, and Chavara were selected as they have the largest number of co-operative societies in the coir yarn sector. This led to a total of 60 cooperative societies being included in the study. Furthermore, from each selected society, 4 workers were randomly chosen to provide diverse insights into the workforce dynamics, resulting in a robust sample size of 240 workers for detailed analysis. The study relies on both primary data and secondary data. Primary data was collected from the secretaries of the coir co-operative societies and coir workers of each selected co-operative society of Alappuzha and Kollam districts, using a pre-tested structured interview schedule. Secondary data was collected from the Coir Board, Cochin. Constraints faced by the co-operative society as well as the coir workers in the production of coir yarn has been analyzed using Garrett ranking technique.

2.1 Garrett ranking technique

The constraints perceived by the coir workers and by the secretaries of the co-operative societies in coir yarn production were prioritized by using Garrett's ranking technique. This method aids in identifying the most important constraints that they face in the production process. Through this approach, participants were requested to prioritize the identified constraints. These rankings were subsequently transformed into average scores (Garrett score) to deliver a more precise representation of the constraints in the societies under consideration. This method involved converting the assigned ranks of various constraints into percentages using a specific formula.

Per cent position = $100\times (R_{ij} -0.5)/N_j$

R_{ij}= Rank given for i^{th} factor by j^{th} individual

N_j= Number of factors ranked by j^{th} individual

The percentage positions were subsequently transformed into scores on a 100-point scale utilizing the table established by Garrett and Woodworth (1969). The average score level was derived from these scores, and the constraints were then ranked based on these mean scores.

3. RESULTS AND DISCUSSION

The analysis of the constraints in coir yarn production were organized under two sub sections, allowing for a more detailed understanding of the different types of challenges faced.

3.1 Constraints faced by the coir workers in the production of coir yarn

The key challenges faced by workers in coir production were identified and ranked according to the responses collected from coir workers in the study area. These challenges included various issues such as work-related health problems, debt burden, insufficient wages, lack of job security and retirement benefits, heavy work load/long working hours, and irregular employment. Among these, work-related health problems emerged as the most important constraint, with the highest Garrett score

of 77.01. This was followed by inadequate wages, which scored 70.67, and irregular employment, with a score of 62.07. Other notable challenges included the absence of job security and retirement benefits (56.71), debt burden (54.86), and the pressure of heavy work load or extended working hours (51.60). This ranking provided a clear view of the most pressing issues affecting coir workers, highlighting the critical areas that need attention to improve their working conditions (Table 1).

Lekshmi and James (2022) found out the problems of coir industry workers of Kanyakumari district of Tamil Nadu and analysed them using Garrett's ranking technique. The results revealed that low wages or income, with the highest mean score of 60.80, was considered the most important issue among the sampled workers. Job insecurity and the absence of retirement benefits were ranked second and third, respectively. The workers were satisfied with the working hours and the lack of medical allowance, as indicated by the lowest mean scores for these variables.

Table 1. Constraints faced by the coir workers in the production of coir yarn

Sl. No.	Constraint	Garrett's score	Garrett's rank
1	Work-related health problems	77.01	I
2	Inadequate wages	70.67	II
3	Irregular employment	62.07	III
4	Absence of job security and retirement benefits	56.71	IV
5	Debt burden	54.86	V
6	Heavy work load or extended working hours	51.60	VI

3.2 Constraints faced by the coir co-operative societies in the production of coir yarn

The major challenges faced by the coir co-operative societies in coir yarn production were identified and ranked according to the responses collected from the secretaries of the coir co-operative societies in the study area. These challenges include non-availability of good quality raw material at affordable prices, shortage of labour, machine breakdowns, payment delay from the Coirfed for the coir sold by the society, lack of active workers, inadequate power supply and frequent power disruptions, limited market demand, lack of financial support from higher organisations/inadequate funding, high charges for machine repairing, transportation and loading and unloading, and difficulties in imparting

technological advancements to workers. Out of these, shortage of labour was found out to be the most significant constraint with the highest Garrett score of 71.58, which was followed by the delay in payment from the Coirfed for the coir sold by the coir co-operative society with a score of 59.01 and lack of financial support from higher organisations/inadequate funding which scored 58.38. Other notable constraints include lack of active workers (57.88), machine breakdowns (54.11), limited market demand (48.33), non-availability of good quality raw material at affordable prices (45.41), high charges for machine repairing, transportation and loading and unloading (40.55), difficulties in imparting technological advancements to workers (38.30), and inadequate power supply and frequent power disruptions (26.41) (Table 2).

George (2022) identified the problems of coir industry in Kerala and the results indicated that the coir industry poses health risks for workers, with 60 percent of them experiencing back pain, 33 percent suffering from allergies and asthma, and the remaining 7 percent facing other health issues. Lack of government support, financial problems, difficulty in drying of fibre during the rainy season and high machinery expenses were some of the major concerns for the sector. Seasonal unemployment was a severe problem, primarily due to floods, followed by low demand and difficulty in obtaining raw materials.

Table 2. Constraints faced by the coir co-operative societies in the production of coir yarn

Sl. No.	Constraint	Garrett's score	Garrett's ranking
1	Shortage of labour	71.58	I
2	Delay in payment from the Coirfed for the coir sold by the co-operative society	59.01	II
3	Lack of financial support from higher organisations/inadequate funding	58.38	III
4	Lack of active workers	57.88	IV
5	Machine breakdowns	54.11	V
6	Limited market demand	48.33	VI
7	Non-availability of good quality raw material at affordable prices	45.41	VII
8	High charges for machine repairing, transportation and loading and unloading	40.55	VIII

9	Difficulties in imparting technological advancements to workers	38.30	IX
10	Inadequate power supply and frequent power disruptions	26.41	X

4. SUGGESTIONS FOR ENHANCING THE PRODUCTION OF COIR YARN

The major constraint faced by the coir workers in the production of coir yarn was work-related health problems that include back ache, leg pain, dust allergy, and so on. These problems can be solved by implementing ergonomic measures that can reduce strain on workers' bodies during coir yarn spinning such as supporting equipment, adjustable chairs, etc. Introducing structured work breaks and shift-based employment can also reduce the strain of the coir workers. Out of the 60 coir co-operative societies included in the study, only 9 of them were using Automatic Spinning Machines and the rest of them relied on electronic ratts and traditional ratts for coir yarn production. Transitioning from electronic ratts and traditional ratts to Automatic Spinning Machines (ASMs) by all the societies can drastically reduce the physical strain on workers. Automatic machines can handle a greater workload, reducing the need for manual intervention and leading to higher efficiency and productivity. These measures could help lower fatigue and reduce long-term health issues. Ongoing support from the Government in technology upgrades and regulation of market-driven price fluctuations is crucial for steering the coir co-operative societies towards sustainability. The seasonality of demand, reliance on traditional production methods and limited markets contribute to the inability of co-operative societies to provide consistent work to the coir workers. To address this, diversifying the coir yarn products, modernizing spinning techniques, and integration with industries that use coir yarn, and promoting coir yarn in sustainable textile markets could create more regular employment opportunities for these workers. The coir cooperative societies in Kerala face significant production related challenges, but these can be addressed through targeted solutions. To tackle shortage of labour which is the major constraint faced by the co-operative societies, the societies can increase the wage rates of the coir workers with the financial support from both the central and state governments. Higher wage rates will act as an incentive for the workers to stay in the industry, reducing attrition rates. State-level campaigns can attract youth to the coir industry by highlighting its potential for innovation and entrepreneurship. Societies could introduce performance-based incentives, such as bonuses for meeting production targets or quality-based rewards. This can motivate workers to perform better and also increase the overall appeal of the job. The coirfed can also ensure timely payment for the coir sold by the co-operative societies. By implementing these solutions, Kerala can boost the efficiency of coir production, ensure worker welfare, and enhance the co-operative sector’s economic viability.

5. CONCLUSION

In summary, this study offers a comprehensive examination of the numerous challenges faced by both coir workers and co-operative societies in the coir yarn production process in Kerala, particularly in the districts of Alappuzha and Kollam. Through the use of Garrett's ranking technique, the research identified work-related health problems, inadequate wages, irregular employment, and absence of job security and retirement benefits as the most critical constraints affecting workers, while shortage of labour, delayed payments from the Coirfed for the coir sold by the co-operative society, and lack of financial support from higher organisations/inadequate funding were highlighted as key issues faced by the co-operative societies. The findings underscore the urgent need for targeted interventions to improve the working conditions, financial stability, and productivity of the sector. Recommendations include the modernization of production processes, such as adopting Automatic Spinning Machines, the introduction of ergonomic measures, and diversification into new markets to ensure more consistent employment. Addressing these constraints through policy reforms, government support, and strategic industry innovations could significantly enhance the sustainability and competitiveness of Kerala's coir sector, thereby improving the livelihoods of coir workers and boosting the economic viability of the cooperative societies. This study serves as a vital resource for policymakers to implement effective solutions, fostering a more resilient and prosperous coir industry in the co-operative sector in these regions of Kerala.

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