Challenges Faced on Coir Industry During Inventory Management in Pollachi, Coimbatore

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ABSTRACT:

A major player in the global market for natural fibre, the coir sector faces numerous inventory management issues that could negatively impact its operational effectiveness and financial success. This study examines the several challenges that players in the coir business have when it comes to inventory management, including problems like varying demand, insufficient storage facilities, interruptions in the supply chain, and a lack of sophisticated technological integration. This research determines the underlying causes of inventory-related inefficiencies and the effects of these issues on production schedules, product quality, and overall business sustainability using a combination of qualitative and quantitative analysis. Furthermore, the study examines current inventory management practices in the industry and suggests potential improvements, including the adoption of modern inventory management systems, better demand forecasting methods, and enhanced supply chain coordination. The findings provide valuable insights for industry players, policymakers, and researchers to address inventory-related obstacles and drive the growth of the coir sector.

Keywords: Technological integration, supply chain disruptions, demand forecasts, storage facilities, inventory management.

INTRODUCTION:

A major player in the global market for natural fibers, the coir industry is essential to the economies of nations like India, especially in areas like Pollachi and Coimbatore. The husk of coconuts is used to make coir, which is used to make mats, ropes, and geo-textiles, among other items. This industry, which is mostly made up of small and medium-sized businesses (SMEs), has many obstacles when it comes to efficiently managing its inventory, which can affect cost management, production efficiency, and product delivery on time. The purpose of this study is to investigate the unique inventory management issues that the coir business faces. The study aims to shed light on possible enhancements by identifying the main challenges and evaluating how they affect the operational effectiveness of coir companies. The study's conclusions may provide insightful suggestions for

improving inventory management procedures, which would raise the coir sector's general level of sustainability and competitiveness.

OBJECTIVES:

- To study the challenges faced in coir industry during inventory.
- To determine which inventory control method, impede the company's ability to run smoothly.
- To review the current inventory management practices.

SCOPE OF THE STUDY:

- The research will collect information from workers, inventory managers, and business owners in order to examine both immediate and long-term impacts on the sector.
- In order to improve efficiency and lower costs in the coir industry, the main issues will be identified, their effects will be evaluated, and solutions will be suggested.

RESEARCH METHODOLOGY:

Area of study: Pollachi
Type of Research: Descriptive research
Population: Coir manufacturers in Pollachi, Coimbatore
Type of sampling: simple random sampling
Sample size : 62
Tools used: Simple Percentage, ANOVA, Chi Square, Ranking Method

REVIEW OF LITERATURE:

.**Harish Patila And Brig. Rajiv Divekarb. (2014).** This study concentrated on B2C e-commerce businesses and online merchants to gain a better understanding of the risks and difficulties associated with inventory management, such as lost sales, unhappy consumers, and reverse logistics. Researching the challenges of managing a B2C e-commerce company's inventory, such as demand variations, reverse logistics, seasonal fluctuations, and stockless policies, and how to get past them to increase customer satisfaction through efficient inventory management, is another area that could use improvement. Both primary and secondary data were gathered for this study. Testing Hypothesis H1: Improved inventory management is associated with higher customer satisfaction levels. analysis of regression contrasting grievances with the choice to never shop there again. Therefore, increasing customer satisfaction requires having an adequate supply of products on hand and delivering them on time. The goal makes it obvious that for a company involved in business-to-consumer online

e-commerce, maintaining an elegant and visually appealing user-friendly website is not nearly as important as inventory management.

Navdeep Singh and Daisy Adhikari. (2023). In this research, the applications, challenges, and possible applications of artificial intelligence (AI) in inventory management are thoroughly examined. Compiling the literature to provide a comprehensive overview of the applications, challenges, and future of artificial intelligence in inventory management is the aim of this study. In inventory control systems, it seeks to bridge the gap between theoretical models of artificial intelligence and their practical implementation. The existing literature uses a variety of methodological techniques. Eldred et al. (2023), for example, employ field studies from the industrial sector to demonstrate the practical effectiveness of AI. Some adopt a more theoretical approach and evaluate various AI techniques and their potential impacts, such as the study carried out by Dhaliwal et al. (2023). AI in inventory management is predicted to advance significantly in the future, particularly in demand forecasting. AI holds great promise for advancing sustainable and eco-friendly supply chain practices. Supply chain processes are being disrupted by the incorporation of artificial intelligence (AI) into inventory management. This research has explored the use of AI in inventory management in a variety of methods, as well as its possible future uses.

Bekele Boche, Shamoro Temam and Oliyad Kebede. (2022). This study looks at the problems with laboratory supply inventory management in public health facilities in Ethiopia's Gambella Regional State. The study is cross-sectional and mixed. The health care system depends on medical laboratory services to accurately diagnose, treat, and prevent both communicable and non-communicable diseases. In order to provide laboratory services for patients at healthcare facilities, laboratory supplies are required for the collection, preparation, testing, analysis, storage, and disposal of clinical specimens. Seventeen public health facilities in the Gambella regional state participated in a descriptive cross-sectional study conducted between May and July 2021 using a mixed quantitative and qualitative approach. Lack of adequate and committed personnel, budgetary constraints, limited storage space, sporadic supplier shortages of laboratory supplies, infrequent oversight, and input from higher authorities were the primary barriers to inventory management of laboratory supplies. Stock-outs, excessive waste, inadequate staffing, financial constraints, inaccurate records and reports, and inadequate storage requirements all shown the inadequate inventory control of laboratory supplies. The results of the study suggest that strict supervision is necessary to improve the efficiency of laboratory supply inventory management in healthcare facilities.

Debela Assefa Guluma. (2019). The case of Asella Malt Mill illustrates inventory management strategies, challenges, and opportunities. The primary aim of the study is to identify the factory's most often used inventory management strategies. to investigate the primary challenges the plant has when implementing inventory

management practices. The factory assesses potential customers using inventory management techniques. Both quantitative and qualitative data were used in the study, which used a descriptive research methodology. SPSS version 20 was used to process the primary data, which was collected using questionnaires. Asella Malt Factory is now working toward using Vendor Managed Inventory, which centralizes decisions about inventory replenishment with upstream distributors to lessen the likelihood of obtaining substandard supplies. This implies that the plant is taking steps to apply Materials Requirement Planning methods. In addition to these outcomes, the interview was conducted using the pre-planned question. The results of the study indicate that the manufacturer may control materials, reduce lead times, and have an adequate supply of high-quality items on hand to fulfill customer demand by implementing effective inventory management strategies. Boost the factory's capacity to more precisely predict when supplies will be delivered, replenish inventories on schedule, and guarantee that the right supply is available when needed.

Liliana Czwajda and Monika Kosacka. (2017). The multi-tier inventory management strategy's challenges. Due to the increasing complexity of supply chains and the quick development of information technology, the concept of multi-echelon inventory management is becoming more and more popular. Despite the fact that the concept has become more and more popular globally over the past decade, Poland has not yet done enough research on it. This study examines the supply chain from the perspective of applying the Multi-Echelon Inventory Management concept. The concept aims to manage inventory levels across the supply chain, which is far more difficult than managing them at a single level. The introduction of the main problems with multilevel systems and the categorization of supply chain risks and sources of uncertainty constitute the main contributions of this study. The risk problem is associated with an inherent uncertainty problem. It is possible to identify, assess, regulate, control, and eventually manage risk. Risk is affected by uncertainty. Linking the sources of uncertainty to the relevant risk categories is therefore crucial. The report's risk evaluation highlights potential sources of danger and mentions the ambiguity.

DATA ANALYSIS AND INTERPRETATION:

TABLE 1 REPRESENTS THE EDUCATION QUALIFICATION OF THE RESPONDENTS.

PARTICULARS	NO OF RESPONDENTS	PERCENTAGE (%) OF RESPONDENTS
Below secondary school	6	9.7
High school graduate	16	25.8
Diploma	17	27.4
Bachelor degree	18	29.0

Masters degree	5	8.1
Total	62	100.0

Source: Primary data

INTERPRETATION:

The above table 1 represents the education qualification of the respondents, where 9.7% of them are below secondary school, 25.8% of them have completed high school, 27.4% have diploma, 29% have completed bachelor degree and 8.1% holds a masters degree. Most of the respondents have completed bachelor degree (i.e) 29.0%.

TABLE 2 REPRESENTS THE JOB ROLE OF THE RESPONDENTS IN THE INDUSTRY.

PARTICULARS	NO OF RESPONDENTS	PERCENTAGE (%) OF RESPONDENTS
Production manager	11	17.7
Inventory manager	19	30.6
Procurement officer	12	19.4
Sales and distribution manager	12	19.4
Quality control	8	12.9
Total	62	100.0

Source: Primary data

INTERPRETATION:

The above table 2 represents the job role of the respondents in the industry, where 17.7% of the respondents are production managers, 30.6% are inventory managers, 19.4% are procurement officers, 19.4% are sales and distribution managers and 12.9% of the respondents are working under quality control of the industry. Most of the respondents are inventory manager (i.e) 30.6%

TABLE 3 REPRESENTS THE YEARS OF EXPERIENCE OF THE RESPONDENTS IN THE INDUSTRY.

PARTICULARS	NO OF RESPONDENTS	PERCENTAGE (%) OF RESPONDENTS
Less than 1 year	6	9.7
1 to 3 years	23	37.1

4 to 6 years	28	45.2
7 to 10 years	4	6.5
More than 10 years	1	1.6
Total	62	100.0

Source: Primary data

INTERPRETATION:

The above table 3 represents the years of experience of the respondents in the industry, where 9.7% of the respondents are less than 1 year, 37.1% are 1 – 3 years, 45.2% are 4 – 6 years, 6.5% are 7 – 10 and 1.6% are more than 10 years. Most of the respondents have years of experience of 4 – 6 years in the industry (i.e) 45.2%.

TABLE 4 REPRESENTS THE ANNUAL REVENUE OF THE COMPANY.

PARTICULARS	NO OF RESPONDENTS	PERCENTAGE (%) OF RESPONDENTS
Below 10 lakhs	6	9.7
10 lakhs to 50 lakhs	34	54.8
50 lakhs to1 crore	16	25.8
1 crore to 5crore	5	8.1
Above 5 crores	1	1.6
Total	62	100.0

Source: Primary data

INTERPRETATION:

The above table 4 represents the annual revenue of the company, where 9.7% them earn below 10 lakhs, 54.8% of them earn 10 lakhs to 50 lakhs, 25.8% of them earn 50 lakhs to 1 crore, 8.1% of them earn 1 crore to 5 crore and 1.6% of them earn above 5 crore. Most of the companies earn an annual revenue of rupees 10 – 50 lakhs (i.e) 54.8%.

TABLE 5 REPRESENTS THE LOCATION OF OPERATION.

PARTICULARS	NO OF RESPONDENTS	PERCENTAGE (%) OF RESPONDENTS
Rural area	22	35.5
Semi urban area	31	50.0

Urban area	9	14.5
Total	62	100

Source: Primary data

INTERPRETATION:

The above table 5 represents the location of operation, where 35.5% have the rural area as location, 50% have semi urban area as location and 14.5% have urban area as location. Most of them have semi urban area as location of their operation (i.e) 50%.

TABLE 6 SHOWING THE ANALYSIS OF PREFERRED METHOD OF INVENTORY AND CHALLENGES

H0 - There is no significant relationship between preferred method of inventory management and challenges in inventory management.

H1- There is a significant relationship between preferred method of inventory management and challenges in inventory management.

Particulars		Sum of Squares	df	Mean Square	F	Sig.
Overstocking	Between Groups	.421	3	.140	.168	.000
	Within Groups	48.354	58	.834		
	Total	48.774	61			
Under stocking	Between Groups	2.267	3	.756	1.119	.049
	Within Groups	39.169	58	.675		
	Total	41.435	61			
Difficulty in tracking	Between Groups	3.551	3	1.184	1.513	.221
	Within Groups	45.368	58	.782		
	Total	48.919	61			
Inaccuracy in stock	Between Groups	6.961	3	2.320	2.660	.057
	Within Groups	50.587	58	.872		
	Total	57.548	61			

Long lead times	Between Groups	2.511	3	.837	.777	.512
	Within Groups	62.473	58	1.077		
	Total	64.984	61			
forecasting	Between Groups	.866	3	.289	.226	.078
	Within Groups	74.118	58	1.278		
	Total	74.984	61			

INTERPRETATION:

Given that both p-values are less than 0.05, the analysis shows that groups' perceptions of overstocking (p=0.000) and understocking (p=0.049) differ significantly. However, as their p-values are over 0.05, there are no appreciable variations in the opinions of tracking difficulties (p=0.221), long lead times (p=0.512), stock inaccuracy (p=0.057), and forecasting (p=0.078).

TABLE 7 SHOWING THE ANALYSIS OF PRIMARY INVENTORY MANAGEMENT SYSTEM WITH ITS CHALLENGES

Particulars	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	6.070[a]	16	.027
Likelihood Ratio	7.909	16	.952
Linear-by-Linear Association	.495	1	.482
N of Valid Cases	62		

INTERPRETATION:

The above table represents the result of **6.070** with **16 degrees of freedom** and a **p-value of 0.027** suggests a **significant association** between the two categorical variables. Since the p-value is less than 0.05, we can conclude that there is a statistically significant relationship between the variables. The value of **7.909** with **16 degrees of freedom** and a **p-value of 0.952** indicates **no significant relationship.** The high p-value suggests

that the data does not significantly differ from what is expected under the null hypothesis, implying no meaningful association between the variables according to this test. The result of **0.495** with **1 degree of freedom** and a **p-value of 0.482** shows **no significant linear relationship**. Since the p-value is greater than 0.05, it indicates that there is no linear trend between the variables.

TABLE 8 SHOWING THE CHALLENGES IN ORDER OF THEIR IMPACT ON YOUR BUSINESS INVENTORY MANAGEMENT PRACTICES

Ranks	
Particulars	Mean Rank
Fluctuating demand	3.00
Quality control and product degradation	2.98
Supply chain disruption	3.05
Inefficient inventory turnover	3.07
Regulatory and compliance issues	2.90

INTERPRETATION:

The above table represents that the mean rank is 3.00, indicating that it is perceived with a moderate level of importance or concern, ranking relatively in the middle among the issues listed. The mean rank of 2.98 shows that this issue is considered just slightly less significant than fluctuating demand, but still fairly important in the overall ranking. With a mean rank of 3.05, this issue ranks the highest, indicating that it is perceived as the most significant or concerning issue among the options listed. The mean rank is 3.07, which is slightly higher than supply chain disruption, making it the most highly ranked concern overall, suggesting it is seen as the most pressing issue in this context. With a mean rank of 2.90, this issue has the lowest rank, indicating that it is perceived as less critical or concerning compared to the others in the list.

FINDINGS:

✓ The majority 38.7% of respondents are in the 35–44 age group, likely due to career stability and decision-making roles.

✓ The majority of respondents, 56.5%, are male, while 35.5% are female, and 8.1% chose to prefer not to say, suggests a higher representation of males in the survey.

✓ The most highest percentage 29.0% hold a Bachelor's degree, making it the most common level of education among the participants.

✓ The majority of respondents, 30.6%, are Inventory managers, followed by Production managers at 17.7%. Procurement officers and Sales and distribution managers each make up 19.4% of the respondents.

✓ The majority of respondents, 30.6%, are Inventory managers, followed by Production managers at 17.7%.

✓ Majority 45.2% of respondents work in organizations with 51 to 100 employees and 43.5%, work in organizations with 10 to 50 employees.

✓ The majority of respondents are predominantly from 50% semi-urban, and 35.5% rural areas, with a lesser representation from urban areas.

✓ Most 54.8% of respondents have a turnover in the range of 10 lakhs to 50 lakhs and 25.8%, have a turnover between 50 lakhs to 1 crore.

SUGGESTIONS:

➢ **Address Overstocking and Understocking:** To prevent overstocking and understocking problems, businesses may want to consider implementing more precise demand forecasting tools and data analytics.

➢ **Increase Supply Chain Resilience:** To lessen the effects of disruptions, businesses should invest in supply chain risk management, diversify their sourcing tactics, and fortify their ties with suppliers.

Address Changing Demand and Quality Control: Businesses can concentrate on developing adaptable supply chains that can adjust to shifts in demand and make investments in training and quality control systems to guarantee product consistency.

CONCLUSION:

In conclusion, study on inventory management issues in Pollachi's coir sector offers some important new information that can direct future developments. The majority of respondents, who are mostly from medium-sized businesses, report that understocking, overstocking, and ineffective inventory turnover are important problems. Supply chain interruptions, varying demand, problems with quality control, and product deterioration frequently make these difficulties worse. Moreover, while tracking issues and lengthy lead times were noted, they were not thought to have a substantial influence in comparison to the other challenges.

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