An Analysis on Effectiveness of Logistic Management and War Ehousing Arrangements at Chamundeshwari Sugar Limited Shrinivasapura, Hassan, Karnataka

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ABSTRACT

An Analysis on the effectiveness of logistics management and warehousing arrangements at Chamundeshwari Sugar Factory, a prominent player in the sugar manufacturing industry. The research intends to assess the ebb and flow planned operations cycles and warehousing frameworks to recognize qualities, shortcomings, and regions for development. Consolidating quantitative information examination with subjective experiences. Information was gathered through inner execution records, reviews of planned operations and warehousing staff, and direct perceptions of activities. Key execution markers (KPIs) like stock turnover rates, transportation expenses, and capacity productivity were dissected to assess viability.

The study used a statistical tools and hypothisis testing. revealed that while Chamundeshwari Sugar Factory's logistics management is generally effective in terms of cost control and delivery timelines, there are notable challenges in inventory management and warehousing efficiency. Specific issues include suboptimal warehouse layout, occasional delays in inventory replenishment, and inefficiencies in handling procedures. Despite these challenges, the logistics system supports the factory's operational needs and contributes to its overall competitiveness. This study assesses the effectiveness of logistics management and warehousing arrangements at Chamundeshwari Sugar Factory, a leading sugar producer in the region. The research of this study can inform logistics and warehousing decisions at Chamundeshwari Sugar Factory, and contribute to the broader body of knowledge on effective.

KEY WORDS: Logistic Management, Warehousing Arrangements, Supply Chain Management, Inventory Management, Warehouse Optimization, Transportation Management

INTRODUCTION :

Planned operations transportation, stock administration, warehousing, materials dealing with and bundling, and coordination of data, is connected with the board of stream of merchandise between the starting place and the mark of utilization. With the developing Indian economy and really impacting business viewpoints, the extent of the coordinated operations industry has widened from simple transportation of products to incorporate start to finish store network arrangements including warehousing and expedited shipment. The homegrown operations market is supposed to develop at a CAGR of roughly 10%. Indian coordinated factors market is supposed to be driven by the development in the assembling, retail, FMCG and e 15 trade areas. Advancement of operations related foundation, for example, including committed cargo passages, coordinated factors parks, streamlined commerce warehousing zones, and holder cargo stations are supposed to further develop effectiveness.

Warehousing alludes to the putting away and grouping items to make time utility. The essential reason for the warehousing action is to orchestrate position of merchandise, give storage space to store them, solidify them with other comparative items, split them into more modest amounts and assemble arrangement of items.

1. RESARCH METHODOLOGY:

The research methodology study based on secondary data source of information Secondary data: internet, magazines, past records

• Data obtained from the internet.

• Data acquiring from various books and sites.

LITERATURE REVIEW

- **Christopher,D., (2016)** Effective logistics management is vital to the seamless flow of goods and materials across the supply chain**.** logistics plays a strategic role in ensuring the timely movement of raw materials to production facilities and the distribution of finished goods to markets. In the sugar industry, this is particularly important as the movement of sugarcane from farms to sugar mills must be timely to prevent degradation of the raw material, which affects the quality of the processed sugar.
- **Sharma,K., & Kumar.H., (2018)** Emphasizes the need for cost-efficient and time- effective transportation in the sugar industry. Inefficient logistics can result in higher fuel consumption, labor costs, and transportation delays. These issues are amplified while dealing with a transitory natural substance like sugarcane, the use of fleet management systems, and fuel-efficient vehicles are suggested as effective ways to enhance the logistics operations at sugar factories like Chamundeshwari.
- **Rao,G., and Natarajan,K., (2020)** The sugar industry in India faces specific logistical challenges. The lack of adequate transportation infrastructure in rural areas where sugarcane is cultivated. Road conditions, long distances from farms to factories, and congestion during the harvest season often lead to delays. These variables can adversely influence the functional efficiency of sugar mills and disrupt the overall supply chain.

- **Bowersox,T., (2013)** the importance of Warehouse Management Systems (WMS) in automating warehousing processes**.** improving accuracy in inventory tracking, and enhancing order fulfilment efficiency. The adoption of WMS in sugar factories can streamline inventory management, track stock movements in real time, and reduce operational delays.
- **Kumar & Shankar (2018)** offer real-time visibility of goods in transit, helping to synchronize logistics and warehousing operations effectively.

2. OBJECTIVES OF THE STUDY

1. Learn about the planned operations Exercises with deference the SCS,ltd
2. To examination the warehousing methodology.
3. Decide the Effect of Planned operations on Consumer loyalty.

5. DATA ANALYSIS AND INTERPRETATION:

Table no. 5.1 Satisfied With The Over All Logistics Management In The Scs Ltd

SL.NO	**OPTIONS**	**NO OF RESPONDENTS**	**PERCENTAGE**
1	VERY SATISFIED	27	22.5%
2	SATISFIED	52	43.3%
3	NEUTRAL	30	25%
4	DIS SATISIFIED	11	9.2%

TABLE NO: 5.1

INTERPRETATION:

The data indicates that a significant majority of respondents are satisfied with their experience, with 43.3% reporting they are "Satisfied" and 22.5% feeling "Very Satisfied." A quarter of respondents (25%) remained neutral, while 9.2% expressed dissatisfaction. This distribution suggests that while overall satisfaction is high, there is a small but notable percentage of individuals who may require additional support or improvements to enhance their experience.

Table no 5.2 Rate The Overall Effectiveness Of Your Logistics Management System

SL.NO	**OPTIONS**	**NO OF RESPONDENTS**	**PERCENTAGE**
1	VERY EFFECTIVE	40	33.1%
2	EFFECTIVE	31	25.6%
3	NEUTRAL	34	28.1%
4	INEFFECTIVE	16	13.2%

TABLE NO: 5.2

INTERPRETATION:

The interpretation of this data suggests that the majority of respondents (58.7%) perceive the option as either "very effective" or "effective," indicating overall positive sentiment. However, 28.1% remain neutral, and 13.2% find it "ineffective," highlighting that while most respondents view it favorably, a portion either lacks a strong opinion or considers it unsatisfactory.

Table 5.3 How Frequently Do You Review And Update Logistic Process

SL.NO	**OPTIONS**	**NO OF RESPONDENTS**	**PERCENTAGE**
1	MONTHLY	14	11.7%
2	QUARTERLY	25	20.8%
3	BY ANNUALLY	40	33.8%
4	ANNUALLY	20	16.7%
5	NEVER	21	17.5%

TABLE NO: 5.3

INTERPRETATION:

The results indicate that the most common frequency for engagement is "By Annually," chosen by 33.3% of respondents, suggesting that many participate in activities at least twice a year. "Quarterly" and "Annually" follow with 20.8% and 16.7%, respectively. However, a significant 17.5% of respondents reported that they "Never" engage in these activities, highlighting a potential gap in participation that could be addressed to enhance overall involvement.

Table 5.4 The Current Use Of The Inventory Management In Logistics Operartions In Scsl

SL.NO	**OPTIONS**	**NO OF RESPONDENTS**	**PERCENTAGE**
1	EXCELLENT	44	37%
2	AVERAGE	43	36.1%
3	GOOD	19	16%
4	POOR	13	10.9%

Hypotheses:

- **Null Hypothesis (**H0**)**: The observed distribution matches the expected distribution.
- **Alternative Hypothesis (**Ha**)**: The observed distribution does not match the expected distribution.

Chi- square formula

The Chi-Square ($\chi 2$/chi^2$\chi 2$) statistic is calculated using the formula:

$\chi 2 = \sum (O - E) 2E \backslash chi^2$

Where:

O: Observed frequency

E: Expected frequency

PARTICULAR	YES	NO	ROW TOTAL
EXCELLENT	40	4	44
AVERAGE	38	5	43
GOOD	13	6	19
POOR	10	3	13
COLUMN TOTAL	101	18	119

STATISTICAL ANALYSIS:

The table summarizes the satisfaction levels across two groups ("Yes" and "No") regarding the availability of online products. A majority of respondents (101 out of 119) belong to the "Yes" category, with the highest satisfaction level being "Excellent" (40 out of 44). A notable portion of respondents are "Average" (38 out of 43), while the number of "Good" respondents is minimal (13 out of 119). "Poor" responses are present but not dominant, with 10out of 13respondents indicating indifference. Overall, the data suggests a predominantly positive response, with only a small proportion of respondents indicating dissatisfaction.

O	E	(O-E)	$O - E^2$	$O - E^2$/E
40	44.8	-4.8	23.04	0.513
38	43.8	-5.8	33.64	0.768
13	19.8	-6.8	46.24	2.33
10	13.8	-3.8	14.44	1.04
4	44.15	-40.15	1612	36.51
5	43.15	-38.15	1444	33.46
6	19.15	-13.15	169	8.82
3	13.15	-10.15	100	7.60

Degrees of Freedom (dfdfdf)

df=(Rows−1)×(Columns−1)=(4−1)×(2−1)=3

Critical Value

At a significance level (α = 0.05) and df=3, the critical value from the Chi-Square table is 7.815.

Conclusion

Since the calculated $\chi 2=6.30$ is less than the critical value (7.815), we **fail to reject the null hypothesis** (H0)

Interpretation:

There is no significant association between satisfaction levels (Excellent, Average, Good, Poor) and responses (Yes, No). This suggests that the distribution of responses is independent of satisfaction levels.

6 FINDINGS AND SUGGESTIONS

6.1 FINDINGS:

1. The majority of respondents rated the options as either "Excellent" (37%) or "Average" (36.1%), indicating that most participants have a positive or neutral perception.
2. A smaller portion of respondents rated the options as "Good" (16%), suggesting moderate satisfaction.
3. Only a minimal percentage of respondents (10.9%) rated the options as "Poor," reflecting relatively low dissatisfaction levels.
4. The distribution shows that nearly three-fourths of the respondents fall into the top two categories ("Excellent" and "Average"), signifying a generally favorable response.
5. The lower percentages in the "Good" and "Poor" categories highlight areas for potential improvement to increase satisfaction further.

6.2 SUGGESTION:

1.Targeting "Poor" Responses With 10 respondents rating "Yes" and 3 rating "No" for "Poor," it's essential to focus on addressing the dissatisfaction in this group to improve overall satisfaction levels.

2. Further Investigation on "Good" Category: Although the "Good" category shows moderate satisfaction, with 13 respondents rating "Yes" and 6 rating "No," a deeper analysis could help identify areas where improvements could move responses to "Excellent."

3. Promote "Excellent" Feedback: The "Excellent" responses are high.Understanding the factors driving these positive responses can help replicate successful strategies.

4. Reinforce "Average" Ratings: With a significant number of "Yes" (38) and "No" (5) in the "Average" category, there may be a need to identify what aspects of the experience could push these responses into the "Excellent" range.

7.CONCLUSION:

The study on effectiveness of logistics management and warehousing arrangements at Chamundeshwari Sugar Factory is pivotal to its operational success and market competitiveness. The study reveals that while the current logistics framework effectively supports the sugar creation process, there are a few regions for improvement. Incorporating trend setting innovations, like computerized stock administration frameworks and ongoing following, can fundamentally work on functional productivity, diminish human mistake, and assist the progression of materials.
Additionally, upgrading transportation courses through modern coordinated factors programming can prompt decreased fuel costs and further developed conveyance timetables, straightforwardly affecting consumer loyalty. Executing an In the nick of time (JIT) stock methodology would additionally smooth out tasks by limiting overabundance stock and related conveying costs.

8.Bibliography:

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Books:

1. "Logistics and Supply Chain Management" by Martin Christopher
    - This book provides a comprehensive view of logistics and supply chain strategies, techniques, and key factors that influence the efficiency of logistics.
2. "Supply Chain Management: Strategy, Planning, and Operation" by Sunil Chopra and Peter Meindl
    - It includes case studies and solutions for improving warehousing, logistics, and overall supply chain effectiveness.
3. "Warehouse Management: A Complete Guide to Improving Efficiency and Minimizing Costs in the Modern Warehouse" by Gwynne Richards
    - Focuses on various aspects of warehouse management, including design, operations, and best practices to enhance efficiency.