



INVENTORY MANAGEMENT PRACTICES FOLLOWED IN COCONUT OIL MILLS IN WESTERN TAMIL NADU

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ABSTRACT

The study sample consisted of 40 coconut oil mills in Western Tamil Nadu and the data collected for five-year period from 2009-10 to 2013-14. On inventory management, respondents were asked how frequently they prepared inventory budgets and reviewed their inventory levels. The study analyzed inventory management practices of coconut oil mills in Western Tamil Nadu. The results showed that the coefficient of variation of the inventory management practices in efficient category was lower than the inefficient category, which shows the consistency of inventory management practices adopted by efficient category oil mills. Thus, it is concluded that preparation of inventory budgets and review of inventory levels would help the oil millers to keep their short-term liquidity position at the required level, which would increase the financial performance. Nearly 54 per cent of the respondents in efficient category reviewed their inventory levels and about 50 per cent prepared inventory budgets, which helped them to avoid accumulation of funds in inventory. In inefficient category oil mills, practice on preparation of inventory budgets and review of level of inventory were at lower level. Hence, it is suggested that oil mills in inefficient should improve their practice on preparation of inventory budgets, which would help them to maintain the short-term liquidity position and to improve the financial performance.

KEYWORDS: Agribusiness Sector, Coconut Oil Mills, Cash Management Practices, Western Tamil Nadu

INTRODUCTION

Inventory is a physical stock of raw material, work-in-progress and finished goods maintained by the firms for smooth running of a business. Inventories occupy a major and significant part of current assets of a company. On an average, inventories are approximately 60 per cent of the current assets of the company in India. Because of the large size of inventories maintained by firms, a considerable amount of funds were required to be committed. Unnecessary investment in inventory might be managed by efficient inventory management. Simple inventory planning and control techniques were used to reduce the company's inventory at a considerable degree i.e. 10 to 20 per cent. The reduction in excessive inventory would carry a favorable impact on company's profitability (Sekar and Geetha (2013)).

Proper inventory management enhances the competitive ability and market share of small manufacturing units. An appropriate inventory control technique ensures the reduction of storage and revenue cost. The important factors considered for inventory management are inventory stabilization, timely delivery of products on the agreed terms and conditions and discharged duties and responsibilities etc. (Vipul, 2013). Business economy and efficiency could be

enhanced through effective and frequent inventory control.

REVIEW OF LITERATURE

Pawan (1996) found that there was a lacuna in application of inventory control techniques for the efficient management of purchase and store activities in materials management department. The inventory turnover of the unit indicated that the stock level of each item was not well maintained. The Economic Order Quantity (EOQ) was not properly followed to save the ordering cost. No strict efforts had been made to clarify the store items into A, B and C category. **Chen et al. (2005)** analyzed the link between inventory and long-term stock returns of manufacturing firms. They used firm level Raw Material Inventory (RMI), Work-in-Process (WIP) and Finished Goods Inventory (FGI) data on COMPUSTAT database and documented a 16 per cent drop (from 96 to 81 days) in the average inventory level (days of inventory) of all publicly-traded US manufacturing firms over the 20-year period from 1982 to 2000. They also found that while firms with abnormally high inventory levels had poor long-term stock returns, firms with slightly lower than average inventory outperformed firms with extremely low inventory. **Roumiantsev and Netessine (2005)** investigated the association between inventory management policies and the financial performance of a firm. The study was conducted across the period 1992-2002. They used conventional firm specific variables (inventory levels, margins, and lead times) as explanatory variables. They found no evidence that smaller relative levels were associated with financial performance as measured by return on assets. **Koumanakos (2008)** tested the hypothesis that efficient inventory management improved firm's financial performance. He collected the financial information on all medium to large Greek firms for the period 2000 to 2002. For each year, all manufacturing firms operating in any one of the three representative industrial sectors in Greece namely food, textiles and chemicals were selected for the study. The findings obtained by cross-section linear regressions, revealed that the higher the level of inventories preserved (departing from lean operations) by a firm, the lower its rate of returns. Findings additionally tested by the use of pseudo-likelihood ratio test, which constituted a more reliable tool, thus verified the robustness of the linearity of the relationship. **Rajeev (2008)** used the thumb rule of Inventory Management (IM) and improved the performance of Small and Medium Enterprises (SMEs). He used three important aspects and judged the quality of a firm's IM practices such as the systematic character of the operation, the use of computers and the application of modern methodology. In those contexts, the level of computerization for IM activities of the Machine Tool Enterprises (MTEs) in Bangalore was low. While the SMEs were equipped with computers, the capabilities of software and hardware were not exploited to their full potential. For the SMEs in the machine tool sector in Bangalore, there was a profound scope for development in IM practices.

Lwiki et al. (2013) examined the impact of inventory management practices on the financial performance of sugar manufacturing firms in Kenya and analyzed the extent to which lean inventory system, strategic supplier partnership and technology were applied in those firms. The research survey was conducted in the eight operating sugar-manufacturing firms from the period 2002- 2007. The primary data was collected using structured and semi- structured questionnaires administered to key informants in the organizations. Secondary data was obtained from annual financial performance statements available in the year book sugar statistics. Descriptive statistics was used to test the impact of inventory management practices and correlation analysis was used to determine the nature and magnitude of the relationship among inventory management variables. The results indicated that there existed a positive correlation between inventory management and Return on Sales ($r=0.740$) and also with Return on Equity ($r=0.653$) which were found to be statistically significant at 5 per cent level. **Wambua et al. (2015)** assessed the effect of Inventory warehousing

systems on the financial performance of Adventist Book Centers (ABC). They collected the data from 64 employees and analyzed the data with SPSS package. The empirical results revealed a positive significant relationship between financial performance and Inventory warehousing systems at 0.05 significance levels. Further, they showed that Inventory warehousing systems had a significant effect on performance with a beta coefficient of 0.311. The study suggested that owners / managers of ABC embrace effective inventory warehousing systems as a tactic to further their financial performance and in overall performance of their organization.

MATERIALS AND METHODS

The sampling design, data collection and analytical frameworks are outlined in this section.

Sampling Design and Data Collection

The list of coconut oil mill was collected from Coconut Oil Mill Association and District Industries Centre (DIC) for Western Zone (Tiruppur and Coimbatore) of Tamil Nadu. The list comprised of 126 coconut oil mills in Tiruppur and 15 oil mills in Coimbatore districts. From that list, 40 coconut oil mills were selected by simple random sampling method.

Five year period from 2009-10 to 2013-14 was considered for evaluating the financial performance and efficiency of coconut oil mills in Western Tamil Nadu. The entire study profoundly relied on the interview schedule (financial management practices) and secondary data (balance sheet, income statement and cash flow statement) from the annual reports of the coconut oil mills.

RESULTS AND DISCUSSIONS

Classification of Coconut oil Mills

Based on the Overall Working Capital Management Efficiency Index (EI_{WCM}), the coconut oil mills were classified as efficient and inefficient category (Afza and Nazir, 2011). Oil mills having EI_{WCM} more than one ($EI_{WCM} > 1$) were classified as efficient category and less than one ($EI_{WCM} < 1$) were under inefficient category. The results are presented in Table 1.

Among the 40 coconut oil mills, majority (70 per cent) of them belonged to efficient category, while the remaining was in inefficient category (30 per cent). The results of t-test (two samples) unequal variance revealed that there was a significant difference in average efficiency index between efficient and inefficient category oil mills. Hence, the sample was segregated into efficient category and inefficient category for further analysis.

Table 1: Classification of Coconut Oil Mills (N = 40)

S.No.	Category	Number of Oil Mills	Percentage	Average EI_{WCM}
1	Efficient Category	28	70	2.51
2	Inefficient Category	12	30	0.76
Overall		40	100	1.63

t stat = 7.627118; p = 2.08E-08 < 0.01

Inventory Management Practices of Coconut Oil Mills in Western Tamil Nadu

On inventory management, respondents were asked how frequently they prepared inventory budgets and reviewed their inventory levels. The results on mean score of receivables management practices, coefficient of variation (CV) and t-test of inventory management practices for efficient and inefficient category are presented in Table 2.

Table 2: Inventory Management Practices of Oil Mills in Western Tamil Nadu

Inventory Management Practices	Efficient Category (N=28)		Inefficient Category (N=12)		T-Test
	Score	CV	Score	CV	
Preparation of inventory budgets	3.46 *	28.57	2.42	62.67	2.248
Review of inventory level	3.29	38.49	2.50	44.72	1.495

(* significant at the 0.05 level)

The t-test revealed that the mean score preparation of inventory budget of efficient (3.46) and inefficient (2.42) category oil mills were statistically different. Hence, it could be concluded that the preparation of inventory budget might be significantly associated with efficiency. In efficient category, preparation of inventory budgets got the highest score of 3.46 compared to review of level of inventory (3.29), which helped them to avoid accumulation of funds as idle. Oil mills in inefficient category had the lowest score of less than three for the preparation of inventory budgets and review of inventory levels.

The coefficient of variation of both the inventory management practices in efficient category was lower than the inefficient category, which shows the consistency of inventory management practices adopted by efficient category oil mills.

These results concurred with assertions by Peel and Wilson (1996) that small firms enhanced their businesses by proper inventory management thus enabled to avoid tying up excess capital in idle stock at the expense of profitable ventures.

Thus, it is concluded that preparation of inventory budgets and review of inventory levels would help the oil millers to keep their short-term liquidity position at the required level, which would increase the financial performance.

The frequency of adoption of practices of inventory management by efficient and inefficient category oil mills are presented in Tables 3 and 4 respectively.

Table 3: Inventory Management Practices of Efficient Category Oil Mills (N=28)

Inventory Management Practices	Never (1)	Rarely (2)	Sometimes (3)	Often (4)	Very Often (5)	Σf_i	Mean Score
Preparation of inventory budgets	0 (0.00)	4 (14.29)	10 (35.71)	7 (25.0)	7 (25.00)	28 (100.0)	3.46
Review of inventory level	2 (7.14)	6 (21.43)	5 (17.86)	6 (21.43)	9 (32.14)	28 (100.0)	3.29

(Figures in parentheses indicates percentage to total)

Nearly 54 per cent of the respondents reviewed their inventory levels and about 50 per cent prepared inventory budgets, which helped them to avoid accumulation of funds in inventory. Capkun *et al.* (2009) revealed that there was a significant positive correlation between inventory performance (total as well as the discrete components of inventory) and measures of financial performance (at both the gross and operating levels) for firms in manufacturing industries.

Table 4: Inventory Management Practices of Inefficient Coconut Oil Mills (N=12)

Inventory Management Practices	Never (1)	Rarely (2)	Sometimes (3)	Often (4)	Very Often (5)	Σf_i	Mean Score
Preparation of inventory budgets	5 (41.67)	1 (8.33)	3 (25.00)	1 (8.33)	2 (16.67)	12 (100.0)	2.42
Review of inventory level	2 (16.67)	3 (25.00)	4 (33.33)	2 (16.67)	1 (8.33)	12 (100.0)	2.50

(Figures in parentheses indicates percentage to total)

Table 4 revealed that in inefficient category oil mills, practice on preparation of inventory budgets and review of level of inventory were at lower level. The results reinforced the results of Kwame (2007) that up to 90 cent of small businesses relied on manager's experience in the management of inventory. Hence, it is suggested that oil mills should improve their practice on preparation of inventory budgets, which would help them to maintain the short-term liquidity position and to improve the financial performance.

CONCLUSIONS

The coefficient of variation of the inventory management practices in efficient category was lower than the inefficient category, which shows the consistency of inventory management practices adopted by efficient category oil mills. Thus, it is concluded that preparation of inventory budgets and review of inventory levels would help the oil millers to keep their short-term liquidity position at the required level, which would increase the financial performance. Nearly 54 per cent of the respondents in efficient category reviewed their inventory levels and about 50 per cent prepared inventory budgets, which helped them to avoid accumulation of funds in inventory. In inefficient category oil mills, practice on preparation of inventory budgets and review of level of inventory were at lower level. Hence, it is suggested that oil mills in inefficient should improve their practice on preparation of inventory budgets, which would help them to maintain the short-term liquidity position and to improve the financial performance.

REFERENCES

Journals

1. Afza, T., and Nazir, M. (2011). Impact of Aggressive Working Capital Management Policy on Firms' Profitability. *The IUP Journal of Applied Finance*, 15(8), 20-30.
2. Capkun, Ari-pekkka and Lawrence, (2009). On the Relationship between Inventory and Financial Performance in Manufacturing Companies. *International Journal of Operations & Production Management*, 29(8), 789-806
3. Chen, H., Frank, M. Z., and Wu, O. Q. (2005). What Actually Happened to the Inventories of American Companies between 1981 and 2000?. *Management Science*, 51(7), 1015-1031.
4. Koumanakos, D. P. (2008). The Effect of Inventory Management on Firm Performance. *International Journal of Productivity and Performance Management*, 57(5), 355-369.
5. Kwame K (2007). Working Capital Management Practices of Small Firms in the Ashanti Region of Ghana. *African Journal of Business Management*, 6(18), 5807-5817.

6. Lwiki, T., Ojera, P., Mugend, N., and Wachira, V. (2013). The Impact of Inventory Management Practices on Financial Performance of Sugar Manufacturing Firms in Kenya. *International Journal of Business, Humanities and Technology*, 3(5), 75-85.
7. Pawan, K. (1996). Analytical Study of Inventory Management in Punjab State Electricity Board. *Finance India*, 5(2), 412-417.
8. Peel, M. J., and Wilson, N. (1996). Working Capital and Financial Management Practices in the Small Firm Sector. *International Small Business Journal*, 14(2), 52-68.
9. Rajeev, N. (2008). Inventory Management in Small and Medium Enterprises A Study of Machine Tool Enterprises in Bangalore. *Management Research News*, 31(9), 659-669.
10. Sekar, M., and Geetha, R. (2013). A Study on Inventory Management with Special Reference to Suraj Foods, Kaniyampuram. *Asia Pacific Journal of Management and Entrepreneurship Research*, 2(4), 103–112.
11. Vipul, C. (2013). Inventory Management and Small Firms Growth: An Analytical Study in Supply Chain. *Vision*, 17(3), 213–222.
12. Wambua, B. J., Okibo, W. B., Nyang'Au, A., and Ondieki, S. M. (2015). Effects of Inventory Warehousing Systems on the Financial Performance of Seventh Day Adventist Institutions: A Case of Adventist Book Centers (ABC), Kenya. *International Journal of Business and Management*, 10(4), p259.

Working Paper

1. Roumiantsev, S., and Netessine, S. (2005). *Should Inventory Policy be Lean or Responsive? Evidence for US Public Companies*. Working Paper, University of Pennsylvania.