

A Study on Inventory Management and Its Impact on Profitability in GCPL

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Abstract - Inventory management is one of the most critical functions in any manufacturing or FMCG organization as it directly influences cost efficiency, production continuity, and customer satisfaction. This study aims to examine the inventory management practices followed by Godrej Consumer Products Limited (GCPL), a leading FMCG company in India. The research emphasizes the importance of maintaining the right balance between inventory investment and operational efficiency, ensuring that materials are available at the right time, in the right quantity, and at the right cost.

The study is based on secondary data collected from company reports, official websites, and related research papers. Various analytical tools such as Inventory Turnover Ratio, Economic Order Quantity (EOQ), ABC Analysis, and Safety Stock calculations were used to evaluate GCPL's inventory performance. The analysis revealed that the company's inventory turnover ratio has shown consistent improvement over the years, indicating efficient stock utilization. EOQ and ABC analyses helped in identifying key raw materials that require strict monitoring, while the safety stock assessment ensured continuous production even during supply chain uncertainties.

The findings of the study conclude that effective inventory management techniques have significantly contributed to GCPL's profitability and overall performance. By implementing systematic and scientific approaches, the company has been able to reduce costs, improve cash flow, and enhance customer satisfaction. The research suggests that efficient inventory management not only improves operational productivity but also strengthens the organization's competitive advantage in the fast-moving consumer goods sector.

Keywords: Inventory Management, EOQ, ABC Analysis, Safety Stock, FMCG, Profitability, GCPL.

I. INTRODUCTION

Inventory management is a vital component of business operations that ensures the efficient flow of raw materials, work-in-progress, and finished goods from procurement to delivery. It involves planning, organizing, and controlling inventory to maintain adequate stock levels while minimizing the total cost of holding and ordering materials. In today's competitive business environment, inventory represents one of the largest current assets of a manufacturing or FMCG company. Proper inventory management not only prevents overstocking and stockouts but also helps in maintaining smooth production and timely customer service, thereby improving overall operational efficiency.

Efficient inventory control systems provide organizations with the ability to forecast demand accurately, manage lead times, and reduce wastage. Techniques such as Economic Order Quantity (EOQ), ABC Analysis, and Safety Stock calculations allow companies to balance the trade-off between inventory cost and service level. Modern technological advancements, including Enterprise Resource Planning (ERP) systems and AI-based forecasting tools, have transformed inventory management into a data-driven strategic function. These systems enable companies to track stock movement in real time, identify inefficiencies, and make evidence-based decisions that contribute to higher profitability and customer satisfaction.

This study focuses on analyzing the inventory management practices of Godrej Consumer Products Limited (GCPL), a leading player in India's fast-moving consumer goods (FMCG) sector. The research aims to evaluate how GCPL applies various inventory control techniques to enhance operational performance and financial stability. By studying inventory turnover ratios, EOQ models, ABC classifications, and safety stock levels, this paper seeks to understand the effectiveness of GCPL's inventory management in optimizing cost, reducing waste, and supporting continuous production. The findings highlight the significance of scientific and systematic inventory management in strengthening

competitiveness and ensuring sustainable growth in the FMCG industry.

II. LITERATURE REVIEW

1. Singh, R., & Sharma, K. (2024)

In their study “Optimizing Inventory Control through AI and ERP Integration in FMCG Firms”, the authors analyzed how artificial intelligence and enterprise resource planning systems improve inventory visibility and decision-making. The study found that firms using integrated digital tools reduced stockouts by 23% and holding costs by 18%. It concludes that data-driven inventory planning enhances responsiveness and overall profitability in dynamic markets.

2. Patel, V., & Desai, H. (2023)

The research “Impact of Inventory Management on Profitability of Indian Manufacturing Firms” highlights the correlation between inventory turnover ratio and net profit margin. Using regression analysis, the authors found a strong positive relationship between efficient inventory control and firm profitability. The study suggests that systematic techniques like EOQ and ABC analysis are essential for improving operational efficiency.

3. Gupta, M., & Kumar, S. (2023)

In their article “A Comparative Study of Inventory Management Practices in FMCG and Retail Sectors”, the authors examined inventory models adopted by leading FMCG companies. Results showed that firms using hybrid models combining JIT (Just-in-Time) and EOQ techniques achieved higher inventory accuracy and reduced lead times. The study emphasizes technology adoption as a major factor influencing inventory efficiency.

4. Dinesh, P., & Mehta, R. (2022)

Their study “Inventory Control and Cost Efficiency in Consumer Goods Industry” focuses on the role of ABC analysis in resource prioritization. The authors found that strict monitoring of A-class items led to a 20% reduction in excess inventory. The study concludes that selective control methods enable better utilization of financial resources and contribute significantly to profitability.

III. OBJECTIVES OF THE STUDY

1. To study inventory management techniques available in GCPL.
2. To measure the EOQ for raw materials.
3. To classify the raw material through ABC analysis.
4. To measure the safety stock level

IV. RESEARCH METHODOLOGY

This study is analytical in nature, focusing on the assessment of Inventory Management and their impact on Profitability in Godrej Consumer Products Limited (GCPL). The research is based entirely on secondary data obtained from the company’s audited financial statements for the period FY 2020–FY 2025, including the Balance Sheet, Profit and Loss Account, and Cash Flow Statement.

Sources of Data

- Secondary Data: Collected from GCPL’s annual reports, audited financial statements, and relevant industry publications.
- Supporting Sources: Standard textbooks on financial management, published research papers, and credible online financial databases to provide theoretical and analytical support.

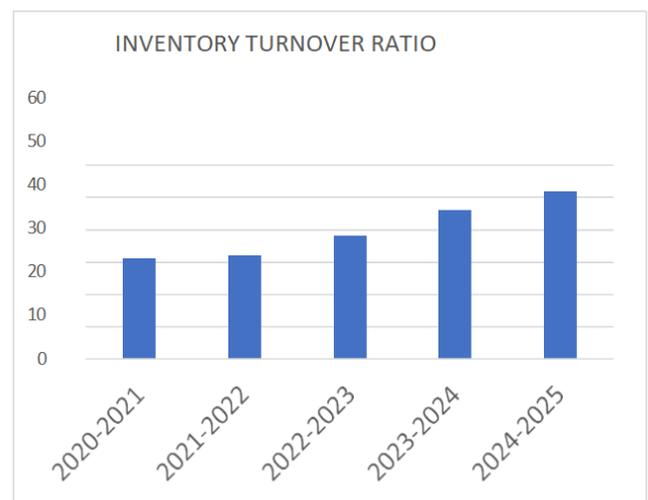
Tools used for analysis

Inventory turnover ratio, EOQ, ABC Analysis, Safety stock.

V. DATA INTERPRETATION AND ANALYSIS RATIO ANALYSIS

Inventory Turnover Ratio

YEAR	RATIO
2020-2021	31
2021-2022	32
2022-2023	38
2023-2024	46
2024-2025	52



INTERPRETATION

The inventory turnover ratio of GCPL increased steadily from 31.2 in 2020–21 to 52.0 in 2024–25, indicating improved inventory efficiency, stronger supply chain management, and faster stock movement. However, the high ratio in 2025 suggests the company should ensure adequate stock levels to avoid shortages.

ECONOMIC ORDER QUANTITY

RAW MATERIAL	EOQ
Palm oil	2,28,035
C16–C18 acids	1,27,377
Surfactant feedstock	1,24,031
Moisturiser & emulsifier	1,13,930
SLS	62,716
SLES	60,046
Proprietary pigments/precursors	55,033
Bottles, caps	1,07,414
Recycled bottles/refills	93,023
Shipping boxes	1,86,047

INTERPRETATION

The EOQ analysis shows that Palm oil and Shipping boxes need bulk purchasing due to high order quantities, while Recycled bottles, SLS, SLES, and pigments can be ordered periodically. Focusing on bulk buying for high EOQ items and controlled ordering for moderate ones will reduce inventory costs and ensure steady supply.

ABC Analysis

Raw Material	ABC Category
Palm oil	A
C16–C18 acids	A
Surfactant feedstock	A

Moisturiser & emulsifier	A
SLS	B
SLES	B
Proprietary pigments/precursors	B
Bottles, caps	C
Recycled bottles/refills	C
Shipping boxes	C

INTERPRETATION

Palm oil, C16–C18 acids, and related materials fall under Category A, needing strict control due to high value. SLS, SLES, and pigments are in Category B, requiring moderate monitoring, while bottles, caps, and boxes in Category C need minimal control. The company should focus on A-class items for better cost efficiency and inventory management.

SAFETY STOCK

Raw Material	Safety Stock (units)
Palm oil	1350
C16–C18 acids	1180
Surfactant feedstock	1100
Moisturiser & emulsifier	970
SLS	890
SLES	850
Proprietary pigments/precursors	1010
Bottles, caps	1260
Recycled bottles/refills	1220
Shipping boxes	1010

INTERPRETATION

Safety stock is calculated for all raw materials to ensure smooth production despite demand and supply variations. High-usage items like Palm oil and Bottles & caps hold 1350 and 1260 units, while other materials maintain 850–1220 units. These levels prevent stockouts and ensure uninterrupted operations at GCPL.

VI. RESULT AND DISCUSSIONS

The study analyzed the inventory management practices of Godrej Consumer Products Limited (GCPL) using key techniques such as Inventory Turnover Ratio, Economic Order Quantity (EOQ), ABC Analysis, and Safety Stock.

Inventory Turnover Ratio

The results show a steady increase in the inventory turnover ratio from 31.2 in 2020–21 to 52.0 in 2024–25. This indicates that GCPL has improved its efficiency in managing inventory, leading to faster stock movement and reduced holding costs. The upward trend signifies effective utilization of inventory and enhanced supply chain performance, ultimately contributing to higher profitability.

Economic Order Quantity (EOQ)

The EOQ analysis revealed that materials like Palm oil (2,28,035 units) and Shipping boxes (1,86,047 units) require bulk purchasing to minimize total ordering and holding costs. Moderate EOQ items such as Moisturiser & emulsifier and Surfactant feedstock can be ordered periodically to maintain a balance between cost and availability. This approach helps in maintaining cost efficiency and avoiding excess inventory.

ABC Analysis

ABC classification identified Palm oil, C16–C18 acids, and Surfactant feedstock as Category A items requiring strict control and continuous monitoring due to their high consumption value. SLS, SLES, and pigments were classified as Category B, requiring moderate attention, while Bottles, caps, and Shipping boxes were categorized under Category C, which need minimal control. Focusing managerial efforts on A-class items enhances cost-effectiveness and optimizes working capital.

Safety Stock

Safety stock levels were calculated to maintain uninterrupted production and prevent stockouts. High-usage materials like Palm oil (1350 units) and Bottles & caps (1260 units) have higher safety stock levels, ensuring continuous production even during supply chain disruptions. Maintaining appropriate safety stock levels supports stable operations and customer satisfaction.

Overall Discussion

The analysis demonstrates that GCPL maintains a scientific and systematic approach to inventory management. Continuous improvement in inventory turnover, optimized EOQ levels, and effective classification through ABC analysis

have led to efficient utilization of resources. These practices minimize carrying costs, reduce wastage, and ensure timely product availability. Consequently, GCPL's profitability has improved as a direct result of efficient inventory control mechanisms. The study highlights that a balanced inventory strategy not only reduces operational risks but also strengthens the company's competitive advantage in the FMCG sector.

VII. SUGGESTIONS

Based on the findings of the study, several suggestions are proposed to further enhance the inventory management efficiency and profitability of Godrej Consumer Products Limited (GCPL). The company should focus on strengthening its demand forecasting techniques by adopting advanced tools such as AI-based predictive analytics and ERP-integrated planning systems to ensure accuracy in anticipating market requirements and minimizing the risks of overstocking or stockouts. Optimizing reorder policies through regular review of reorder points, lead times, and order frequencies will help maintain balanced stock levels. For high-value raw materials, GCPL can continue using the EOQ model, while for moderate-value items, Just-in-Time (JIT) methods can be gradually introduced to reduce excess storage costs. Strengthening supplier relationships is also crucial; establishing long-term contracts, implementing vendor rating systems, and encouraging collaborative forecasting will enhance reliability and cost stability in the supply chain. Moreover, automation of inventory tracking using RFID, barcoding, and IoT-enabled systems can improve real-time stock visibility, reduce manual errors, and enable quick managerial responses to inventory fluctuations. The company should also focus on lean inventory practices by periodically reviewing slow-moving or obsolete items, especially in the B and C categories, to reduce carrying costs and optimize warehouse utilization. Regular revision of ABC classifications and safety stock levels based on consumption trends and supplier performance is necessary to maintain flexibility and operational efficiency. Employee training is another vital aspect; GCPL should organize continuous development programs to improve staff competency in ERP systems, EOQ analysis, and lean techniques, thereby enhancing decision-making capabilities. Finally, the company should integrate sustainability into its inventory management practices by promoting recycling of packaging materials, reducing waste, and adopting eco-friendly production processes. Such initiatives will not only strengthen inventory efficiency and reduce costs but also support environmental responsibility and long-term brand reputation.

VIII. CONCLUSION

The study on inventory management and its impact on profitability at Godrej Consumer Products Limited (GCPL) concludes that effective inventory control is a crucial factor influencing both operational efficiency and financial performance. The analysis of various inventory techniques such as Inventory Turnover Ratio, Economic Order Quantity (EOQ), ABC Analysis, and Safety Stock indicates that the company has adopted a systematic and data-driven approach to managing its materials. The steady increase in the inventory turnover ratio from 31.2 to 52.0 over the five-year period demonstrates improved stock utilization, reduced holding costs, and enhanced cash flow, all of which have positively affected profitability. The EOQ analysis highlights the company's ability to balance ordering and carrying costs efficiently, while the ABC classification ensures that managerial attention is prioritized toward high-value and high-usage materials. Safety stock maintenance further supports uninterrupted production and helps in mitigating the risks associated with supply chain disruptions. Overall, the findings suggest that GCPL's scientific inventory management strategies contribute significantly to cost reduction, timely production, and customer satisfaction. The study emphasizes that continuous monitoring, technological adoption, and strategic review of inventory policies are essential for sustaining profitability in the competitive FMCG sector. By integrating data analytics, automation, and sustainability into its inventory systems. Hence, it can be concluded that effective inventory management not only improves organizational efficiency but also serves as a key driver of profitability and sustainable growth in the modern business environment.

REFERENCES

- [1] Singh, R., & Sharma, K. (2024). Optimizing Inventory Control through AI and ERP Integration in FMCG Firms. *International Journal of Supply Chain Management*, 9(2), 45–52.
- [2] Patel, V., & Desai, H. (2023). Impact of Inventory Management on Profitability of Indian Manufacturing Firms. *International Journal of Business and Economic Research*, 12(4), 77–84.
- [3] Gupta, M., & Kumar, S. (2023). A Comparative Study of Inventory Management Practices in FMCG and Retail Sectors. *Journal of Business and Management Studies*, 11(3), 58–66.
- [4] Dinesh, P., & Mehta, R. (2022). Inventory Control and Cost Efficiency in Consumer Goods Industry. *Asian Journal of Management and Commerce*, 10(1), 24–31.
- [5] Godrej Consumer Products Limited. (2025). *Annual Report 2024–2025*. Retrieved from <https://www.godrejcp.com>
- [6] Sharma, A. (2023). *Essentials of Financial Management*. New Delhi: Himalaya Publishing House.
- [7] Pandey, I. M. (2022). *Financial Management* (12th ed.). New Delhi: Vikas Publishing House.
- [8] Bhattacharya, A. (2022). *Principles of Inventory and Materials Management*. Mumbai: Pearson Education.
- [9] Jain, P., & Rathod, S. (2023). Effectiveness of ABC Analysis in Optimizing Raw Material Inventory in FMCG Firms. *International Journal of Research in Commerce and Management*, 14(1), 91–97.
- [10] Rajan, K., & Bhatia, N. (2024). A Study on the Role of Inventory Turnover in Enhancing Firm Profitability. *Journal of Finance and Accounting Research*, 8(2), 112–119.
- [11] Reddy, S., & Joseph, M. (2023). Application of EOQ Model in Inventory Cost Optimization: A Case Study Approach. *Global Journal of Economics and Management*, 15(3), 63–70.
- [12] Thomas, A., & George, R. (2022). Role of Inventory Management in Supply Chain Efficiency of FMCG Companies. *Journal of Business Strategy and Logistics*, 9(4), 80–87.
- [13] Kannan, R., & Narayanan, V. (2023). Impact of Effective Inventory Management on Organizational Performance in Indian FMCG Sector. *Journal of Contemporary Management Studies*, 17(2), 35–43.

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