



A Study on Inventory Management at Valpra Biotech Private Limited

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Abstract:

The study focuses on the inventory management practices at Valpra Biotech Pvt Ltd, a pharmaceutical company based in Bengaluru, India. Inventory management is crucial for the company's operations, as it involves managing the quantity of products available for purchase and sale and plays a key role in balancing the company's cash flow and profitability. The study evaluates various inventory management techniques, including ABC analysis, EOQ, and stock level monitoring, to optimize inventory levels, reduce costs, and improve efficiency. Through a detailed analysis of financial ratios, such as current ratio, liquid ratio, and inventory turnover ratio, the study identifies challenges in inventory management and suggests strategies to enhance operational efficiency and profitability. The findings emphasize the importance of maintaining adequate inventory levels to avoid production disruptions and the need for continuous improvement in inventory practices to sustain the company's growth.

Keywords: Inventory Management, ABC Analysis, EOQ (Economic Order Quantity), Stock Level Monitoring, Financial Ratios.

Introduction:

The pharmaceutical industry has evolved significantly from its early days of herbal medicine to the modern science-driven field it is today. With advancements in research, drug production, and the use of artificial intelligence, the industry has grown into a complex and vital part of global healthcare. The focus has shifted from broad-spectrum treatments to personalized medicine, with challenges such as high research costs, stringent regulations, and competition from generic drugs constantly shaping the industry landscape.

Valpra Biotech Pvt Ltd, a private pharmaceutical company based in Bengaluru, India—often referred to as the "Biotech capital of India"—operates within this dynamic and challenging environment. Incorporated in 2017, Valpra Biotech is committed to providing quality pharmaceutical products through innovative marketing and distribution strategies. The company offers a range of products including injections, oral liquids, antibiotics, antacids, dietary supplements, and analgesics, which are distributed across India.

Despite its success, Valpra Biotech faces the common challenges of inventory management, which is critical to its operations. Effective inventory management ensures the availability of products for both production and sales, balancing the need for sufficient stock with the financial burden of overstocking. This study examines

the inventory management practices at Valpra Biotech Pvt Ltd, aiming to identify areas for improvement that could lead to enhanced operational efficiency, cost reduction, and increased profitability.

Review of Literature:

PH Nguyen, TVK Dang, PT Nguyen 2009 applies the ABC-VEN analysis method to evaluate pharmaceutical inventory control in a specialized hospital in Vietnam. The study identifies limitations in the data and acknowledges that the findings may not be representative of the entire area or country. It concludes that the hospital contained a large number of medications requiring extensive monitoring and oversight. The study suggests that the ABC-VEN analysis can be used to pinpoint pharmaceuticals needing more stringent control to maximize hospital funds and eliminate stock-outs. The authors express gratitude to the hospital and university for providing access to the data.

MMJ Basha, N VS, S Wani, V Gogi 2020 The study employs inventory audits to enhance pharmaceutical inventory management through selected control procedures. Pharmaceuticals are critical sectors of the medical business; however, because to the current COVID-19 Pandemic, decline in capsule production; several pharmaceutical industries have denied orders due to a shortage of medicinal supplies during lockdown. This study incorporates systematic evaluation, statistical methodologies, fuzzy logic, ABC-VED, EOQ, JIT, and other methods to classify various models for pharmaceutical inventory. This also outlines some of the case studies undertaken based on annual pharmaceutical expenditures using the ABC classification. The fundamental goal is to detect and address inventory management issues by proposing a timely.

Ayad K Ali 2011 discusses the importance of inventory management in pharmacies. It explains that pharmacy inventories hold a lot of value due to the increasing number and cost of medications. By efficiently managing stock, pharmacies can save money and ensure they have the drugs patients and doctors need. The review explores different inventory management methods used in pharmacies, how these methods are assessed, and the influence of information technology. Finally, it highlights the risk of poor inventory management on patient safety and offers recommendations for improvement.

Ilma Nurul Rachmania, Mursyid Hasan Basri 2020 investigates inventory management in an Indonesian public hospital's pharmacy department, emphasizing its impact on the overall supply chain. The authors highlight the need for efficient practices to control healthcare costs. They identify three main problems in the current system: excess stock (overstock), inappropriate forecasting methods, and inadequate information technology (it) support. The study proposes a new inventory policy, the model with continuous review, which could potentially reduce the value of on-hand oncology medication inventory by 50%. Additionally, they suggest using holt's forecasting model as oncology medication stock. Further research is recommended to simulate the process.

5. Ilma According to Nurul Rachmania* Mursyid Hasan Basri (2013), the major goal of the healthcare industry is to deliver the highest quality of care to patients. While healthcare expenses continue to rise, an effective healthcare A supply chain should be set up to save needless expenses. With a focus on how inventory influences hospital supply chain performance, this research will examine inventory management procedures at one of Indonesia's public hospitals in order to solve this problem. Overstock, improper forecasting methods, and a lack of inventory control expertise have been recognized as the three main issues with inventory management practices. IT assistance. The proposed (s,Q) approach, which uses continuous review, has the potential to cut total cancer pharmaceutical inventory value by 50%. Among the forecasting techniques discussed, Holt's model occurs.

According to P. Bolineni's 2016 study, the intrinsically inadequate transportation infrastructure in India causes pharmaceutical businesses to spend one-third of their revenue on supply chain management (SCM) operations. SCM is an essential function for many businesses as it is typically used to reduce costs and boost revenue. India has more SCM expenses than any other country in the world, accounting for 13% of GDP. This study set out to investigate the supply chain management (SCM) tactics employed by Indian company

executives in the pharmaceutical sector to lower the high costs of SCM. This study collected data from three SCM business executives who were employed by Indian pharmaceutical companies and had a track record of successfully lowering costs via the implementation of SCM tactics through semistructured interviews and a single case study research methodology. The conceptual foundation for this study was derived from Goldratt's (1990) theory of constraints, which helped to discover difficulties related to SCM techniques.

Nouçaiba Sbai, Abdelaziz Berrado 2018 highlights the importance of multi-echelon inventory management in pharmaceutical supply chains. It argues that traditional inventory management is insufficient for complex systems and emphasizes the need for an integrated approach considering all levels of the supply chain. This is especially critical for pharmaceuticals due to their high value and impact on patient care.

Research Gap:

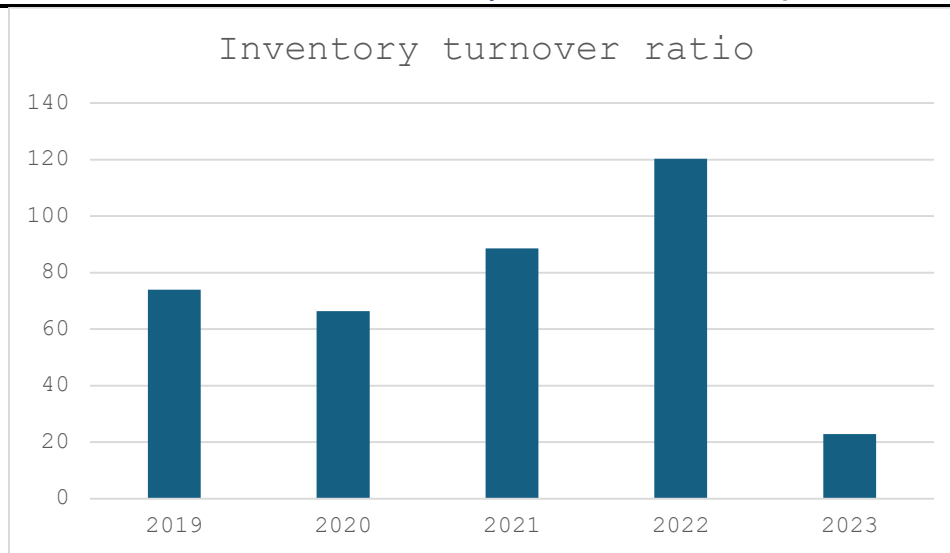
The literature review reveals a gap in research focused on inventory management practices within smaller, privately-owned pharmaceutical companies, particularly in emerging markets like India. While existing studies largely address large-scale operations and traditional techniques, there is a lack of focus on the unique challenges faced by smaller firms and the integration of modern technologies like AI in inventory management. This study seeks to fill this gap by exploring and optimizing inventory management practices at Valpra Biotech Pvt Ltd.

Objectives of the Study:

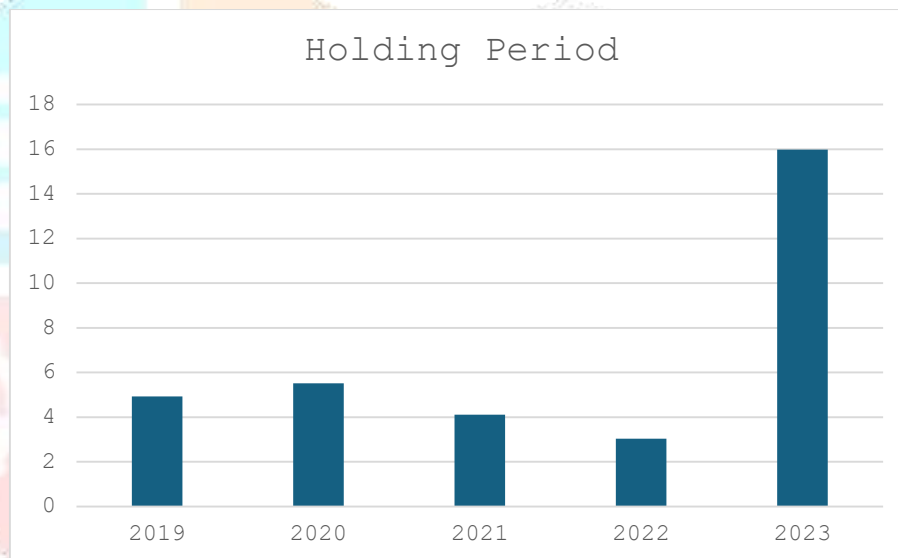
1. **Identify Inventory Management Issues:** To investigate the existing inventory management practices at Valpra Biotech Pvt Ltd and identify the key challenges that impact the company's efficiency and profitability.
2. **Analyze Financial Impact:** To evaluate how inventory management affects the financial performance of the company, particularly in terms of liquidity, profitability, and cost management.
3. **Propose Improvement Strategies:** To develop and suggest effective inventory management strategies, including the use of modern techniques like ABC analysis, EOQ, and technology integration, to optimize stock levels, reduce costs, and enhance operational efficiency.
4. **Ensure Operational Continuity:** To ensure that the company maintains sufficient inventory levels to avoid production disruptions and meet market demands without overstocking.
5. **Boost Profitability:** To explore ways to minimize inventory-related costs while maximizing profitability by maintaining an optimal balance between inventory levels and sales.

Sources of Data:

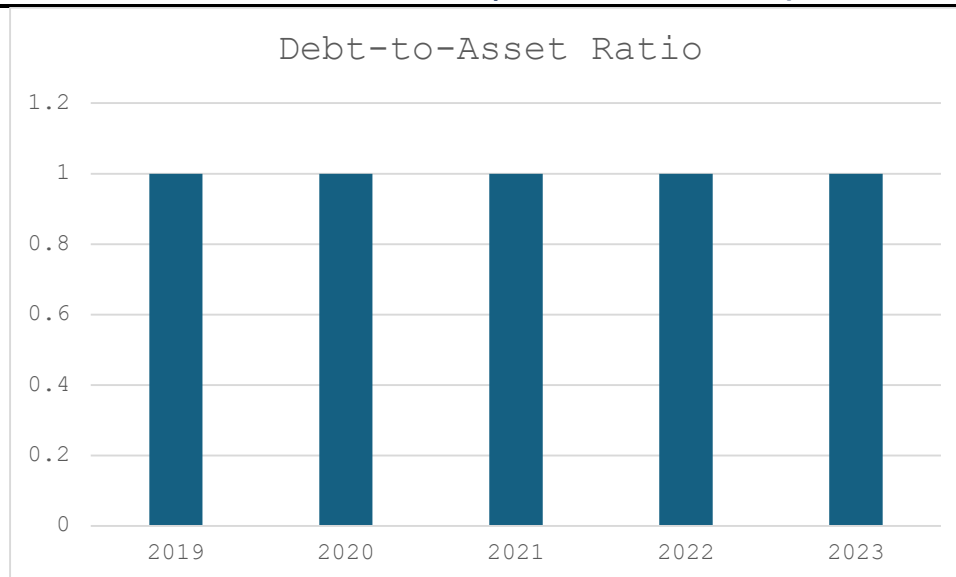
- **Direct Observation:** Observations within the company's inventory management and storage facilities provide firsthand insights into the operational processes and challenges.
- **Interviews:** Interviews with key personnel, such as inventory managers, procurement officers, and financial analysts, are conducted to gain a deeper understanding of the company's inventory practices and their impact on overall performance.



From 2019 to 2023, the company's inventory turnover ratio seems to have gone up. The inventory turnover ratio was around 70 in 2019 and approximately 120 in 2022. This may indicate that the business is managing its inventory more effectively. It could involve storing less inventory, selling more goods, or doing both.



Here appears to be an increase in the number of holding periods over the five years. The number of holding periods was at its lowest in 2019 and reached its highest in 2023. Holding periods can refer to a number of things in finance, including the length of time a company holds onto inventory or an investor holds onto a security.



The company's ROA appears to have fluctuated somewhat over the five years. The highest ROA was in 2019, at 1.2. This means that for every dollar of assets the company owned in 2019, it generated 1.20 in net income. lowest ROA was in 2021, at 0.7. This means that for every asset the company owned in 2019, it generated 0.20 in net income.

Duration of the study:

The study covers for a period of 5 year of data is used i.e. from January 1st, 2019, to December 31st, 2023.

Limitation of the study:

- The Bengaluru area was the sole focus of this investigation.
- The previous financial accounting data serves as its foundation.
- There is a five-year data restriction.
- The research relies largely on secondary data.
- There wasn't enough time for the study.
- Because of approaching conclusion of the fiscal year.

Analysis:

The analysis demonstrated a clear connection between inventory management practices and the company's financial performance. Efficient inventory management was linked to improved liquidity, profitability, and working capital, while inefficiencies led to potential risks such as increased holding costs and liquidity issues.

Findings:

- The firm has a good rapport with its suppliers, distributors, and sales representatives.
- The company's robust product sales during the whole research period indicate a substantial quantity of inventory in the business. The ABC research revealed one of the best inventory management techniques that enables product classification based on purchase price.
- The company ought to manage its inventory efficiently by utilizing cutting-edge techniques.
- The company must take preventative measures to keep sufficient inventory and spare parts on hand to avoid mechanical breakdowns on a frequent basis.

- The company's policy of keeping 0% safety stock results in lost output.
- The company wants to increase sales. The ability of the business to satisfy its current or liquid liabilities on time and vice versa is shown by the connection between its current assets and current liabilities. The liquid ratio of the company is falling year over year.
- There is pressure on the net profit margin trend. This is evident from the profit margin, which has been hovering around average levels for the past year.

Conclusion:

It should go without saying that inventory control works best when stock levels are dropping. Though, inventories have been badly managed rather than successfully controlled if they are decreased without the requisite actions. This suggests that the core objectives of inventory management conflict with one another. The amount and duration of inventories should be adjusted in accordance with sales and manufacturing schedules and demand. Valpra Biotech Pvt Ltd should use a range of inventory management tools, such as ABC analysis and stock level monitoring, to manage stock levels effectively. EOQ, min-level, max-level, and other inventory verification methods, among others.

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