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# Impact of Inventory Management on Operating Profits: Evidence from India

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## **Authors' contributions**

*This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.*

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## **ABSTRACT**

The study has been undertaken to ascertain whether Inventory management influences the Operating Profits of the sample companies or not. In order to achieve this objective, the researchers have taken under study pharmaceutical industry which is represented by four major companies. A reference period of eight years from 2009-2010 to 2016-2017 has been taken into consideration. The researchers employed Regression Analysis and Analysis of Variance to arrive at some dependable conclusion. The results put forth by the study strongly affirm that independent variable (Inventory Turnover Ratio) does not impact the dependable Variable (Operating Profits) statistically in a significant way, thereby, accepting the null hypothesis that there exists statistically no significant impact of inventory turnover ratio on the operating profits. The study corroborates the findings of Roumiantsev and Netessine [1], Suleman Bawa et.al. [2], and Umar [3]. These studies also established that inventory management does not influence the profitability of the firm in any significant way.

**Keywords:** *Inventory management; operating profit; financial performance.*

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## 1. INTRODUCTION

One of the prime objectives of a business entity is to ensure optimum level of inventory investment through proper inventory management system because it is not financially healthy for an entity to have either inadequate or excess investment in inventory. Inventory comprises raw materials, Work-in-process, finished goods, and stores and spares. The investment in inventory should be sufficient and optimum as per the requirements of the entity because excess investment blocks funds that otherwise could have been put to productive activities. On the other hand, inadequate investment in inventory could disrupt production which will lead to shortage of finished goods, thereby, causing a decline in the market share as the customers will shift to competitors. Numaira et. al. [4] The survival of a business depends upon the efficient and effective utilization of available resources. It is against this backdrop that the management of inventory has assumed pivotal position in the determination of financial performance of a business entity. Now-a-days, Business organizations all over the world are implementing supply chain management which resulted in the enhancement of their overall profitability, and inventory management is one of the key elements of supply chain management. Business entities, undertake the management of their inventory through the application of various inventory management techniques. Proper management of inventory ensures efficient utilization of assets by avoiding under-inventory or over-inventor situations, thereby, increasing the return on assets employed. Hence, it is well desired in a business entity to ensure efficient management of inventory for it has been established that both the variable have linear relationship with each other.

A proper inventory management system ensures smooth flow of inventory throughout the business entity which in turn leads to timely and accurate fulfillment of orders. An organized inventory management system also results in cost reduction which in turn brings about better financial performance and make the business entity more competitive which not only enhances its ability to survive rough periods but also make the best of opportunities available Numaira et. al. [4]. Every business entity not only strives for the continuity of existing customers but also strives for potential customers which demand efficiency in the delivery system. Thus, in the existing competitive environment, better inventory

management has become key to the success of every business entity throughout the globe. Therefore, significance of inventory management cannot be overlooked as it is the key to the operational efficiency of the entity.

## 2. REVIEW OF LITERATURE

Onikoyi et.al. [4] examined in their study the effects of inventory management practices on financial performance and the results of the study validated that inventory management practices do have significant relationship with the financial performance of the firms. Sekerolgu and Altan (2014) investigated the effect of inventory management on the profitability of firms operating in select industry. The study established that there is a positive relationship between inventory management and profitability in eatable industry, however, it was found that there is no relationship between inventory management and profitability in the weaving industry and wholesale and retail industry. Roumiantsev and Netessine [1] in their study examined the impact of inventory management on the profitability of the sample firms. The findings of the study confirmed that there exists no association between inventory management and profitability of the sample firms.

Jeans and Patrick [6] undertook a study to examine the effects of inventory management on the financial performance of sample firms. The findings established that cost reduction is necessary for the implementation of inventory management. The study further confirms that inventory management system is a competitive tool in the organisations for realizing their corporate competitive strategy. Vipulesh Shardeo [7] made an investigation to examine whether management of inventory influences operational performance or not. The findings put forth by the study confirms that inventory turnover ratio is correlated with the net profit as an improvement in inventory turnover ratio leads to improved financial performance. Abdikani et.al. [8] undertook a study to examine the effect of inventory management on the financial performance and the results put forth by the study affirmed that there is a positive relationship between inventory management and financial performance.

Adamu Danlami et. al. [9] investigated the relationship between inventory management and financial performance and the results showed that inventory management is significantly

related to the profitability of the company which implies that a better management of inventory cycle will enhance the profitability of the company. Timothy et.al. [10] examined in their paper the impact of inventory management practices on the financial performance of sugar manufacturing firms. The results indicate that there exists a statistically significant positive relationship between inventory management and return on assets and also with return on equity.

Suleman Bawa et.al. [2] undertook a study which aimed at investigating the impact of inventory management on firm performance. The study used a cross sectional secondary data designed to test whether there is any relationship between inventory management and firm's performance. The empirical results provided evidence that the main variable, inventory management have no effect on firm's performance and is not significantly related to firm performance of manufacturing firms in Ghana. Muchaendepi et.al. [11] made a study to investigate the effect of inventory management on small and medium enterprises and the findings of the study established that inventory management strategies had a strong relationship with financial performance. The study confirms a positive relationship between inventory management and financial performance of small and medium enterprises.

Daniel and Assefa [12] undertook a study to investigate inventory management and firms' competitiveness and the findings of the study indicated direct relationship between inventory management practices and organizational performance. Enock Gideon et. al. [13] undertook a study to examine the effects of inventory management on financial performance and the findings affirmed that inventory management possesses the potential of positively influencing financial performance of the sample firms of textile sector. Lukumon and Abraham [14] took a study to find out whether inventory management influences operational performance and the findings that emerged from the study indicated that organisations stand to gain a lot from effective inventory control management system. Syed et.al. [15] made a study to examine relationship between inventory management and company performance and the study proved that there is a significant relationship between return on asset and inventory days. Yakubu et.al. [16] made a study to examine the impact of inventory management on financial performance of selected firms. The study reveals that inventory

turnover ratio showed a positive significant impact on financial performance of selected firms in Nigeria.

Umar [3] made an analysis to find out the impact of Inventory turnover ratio on the financial performance of the firm. The findings of the study concluded that inventory management has no effect on firm's profitability. Elsa George [17] undertook a study to investigate the impact of inventory turnover ratio on the financial performance of sample companies and the study validated that lower inventory conversion period leads to higher levels of profitability.

## 2.1 Objective of the Study

- 1) To ascertain the impact of inventory management on the financial performance of the sample companies.

## 2.2 Hypothesis

**Null hypothesis:** There exists statistically no significant impact of inventory management on the financial performance of sample companies.

**Alternative hypothesis:** There exists statistically significant impact of inventory management on the financial performance of sample companies.

## 2.3 Data-base and Research Methodology

In this study, the researchers have made use of secondary data, comprising of financial statements such as statement of financial position and income statement. These financial statements are obtained from the annual reports available on the official websites of the sample firms. The sample of the study comprises of four firms which belong to the pharmaceuticals sector. The reference period consists of eight years from 2009-2010 to 2016-2017 financial year.

The researchers have employed ratio analysis and the results obtained, thereof, are tested by employing regression model and ANOVA model so as to quantify the impact of inventory management on the operating profits of the sample firms which stand as the representative of Pharmaceuticals sector.

## 2.4 Data Analysis and Interpretation

The analysis of the results put forth in the above table by employing regression analysis, using

**Table 1. Data statistics**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ITR	6.427876	4.377793	1.468291	0.1524
C	9.450486	20.38749	0.463543	0.6463
R-squared	0.067045	Mean dependent var		38.70938
Adjusted R-squared	0.035946	S.D. dependent var		24.81921
S.E. of regression	24.36905	Akaike info criterion		9.284966
Sum squared resid	17815.52	Schwarz criterion		9.376575
Log likelihood	-146.5595	Hannan-Quinn criter.		9.315332
F-statistic	2.155880	Durbin-Watson stat		0.505855
Prob (F-statistic)	0.152433			

**Table 2. ANOVA results**

Anova: Single Factor						
SUMMARY						
Groups	Count	Sum	Average	Variance		
OP	32	1238.7	38.70938	615.9933		
ITR	32	145.66	4.551875	0.999551		
ANOVA						
Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	18667.76	1	18667.76	60.51207	9.57E-11	3.995887
Within Groups	19126.78	62	308.4964			
<b>Total</b>	<b>37794.53</b>	<b>63</b>				

Least Square Method, affirm that Inventory Turnover Ratio does not have any statistically significant impact on the operating profits of the sample companies, thereby, accepting the null hypothesis which states that there exists statistically no significant impact of inventory management on the financial performance of sample companies. This, is quite clear from the above table as the coefficient of Inventory Turnover Ratio stands at 6.427 per cent which implies that if the inventory turnover ratio increases by 1 per cent, the operating profit will increase by 6.427 per cent, however, chances of error in the occurrence of such event is extremely high which can be ascertained from the Probability value that stands at 0.1524 far higher than the significance value of 0.05 percent. Furthermore, the R-squared value which stands at 0.067 signifies that the independent variable is least able to forecast the value of dependent variable.

The findings of the ANOVA test further strengthens the results of the regression Analysis which are given in Table 1. The P – Value put forth in the Table 2 is greater than the level of significance, thereby, accepting the null hypothesis. Thus, both the employed techniques arrive at the same conclusion, confirming the acceptance of null hypothesis that there exists no

impact of Inventory management on the Operating Performance of Sample companies.

### 3. CONCLUSION

The primary purpose of this study was to establish whether Inventory Management influences the operating profit or not. The findings put forward by the analysis affirm that inventory turnover ratio does not statistically influence financial performance of sample companies in any significant way, thereby, accepting the null hypothesis that there exists statistically no significant impact of inventory management on the operating profit. The study corroborates with the findings of Roumiantsev and Netessine [1], Suleman Bawa et.al. [2] and Umar [3]. These studies also established that inventory management does not influence the profitability of the firm in any significant way. Thus, it can be concluded on the basis of above results that Inventory management does not provide any significant impetus to the operating profit of the sample firms [18].

### COMPETING INTERESTS

Authors have declared that no competing interests exist.

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