



## A Study on Minimizing Delays and Reducing Costs in Warehouse Dispatching in Big Basket

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### ABSTRACT

The efficiency of warehouse dispatching plays a critical role in the overall performance of supply chain operations, especially in fast-moving consumer goods (FMCG) e-commerce platform like Big Basket. This study aims to investigate the key factors contributing to delays and high operational costs in warehouse dispatching and to propose effective strategies to address these issues. Conducted at Big Basket's warehouse facility in Coimbatore, the research involves a comprehensive analysis of dispatch processes, including order picking, sorting, packaging, and loading. The outcome of this study is expected to help Big Basket enhance its dispatch operations by reducing turnaround time, lowering costs, and ultimately improving customer satisfaction. This research contributes valuable insights into warehouse management practices applicable to the broader logistics and supply chain sector.

**Keywords** – Fast-moving consumer goods, dispatch processes, order picking, sorting, packaging and loading.

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### INTRODUCTION

Export refers to the process of sending goods or services produced in one country to another country for the purpose of trade or sale. It plays a vital role in the economic development of a nation by increasing foreign exchange earnings, promoting industrial growth, and enhancing global business relationships. In international trade, exporting is a key component that connects domestic producers with global markets, allowing them to expand their reach and tap into new customer bases. India, being one of the largest economies in the world, exports a wide variety of products including agricultural goods, textiles, machinery, pharmaceuticals, and IT services. The government supports exports through various incentives, policies, and the development of infrastructure such as ports, logistics hubs, and warehouses.

In the context of warehouse operations, exports require efficient handling, storage, and dispatching systems to ensure that goods reach their international destinations on time and in good condition. Minimizing delays and reducing costs in warehouse dispatching becomes even more critical when dealing with exports, as delays can lead to missed shipping schedules, penalties, and loss of customer trust.

Thus, understanding the role of exports and aligning warehouse management practices to meet global standards is essential for companies engaged in international trade. Efficient dispatching not only supports smooth domestic operations but also strengthens the overall export supply chain.

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### FUNCTIONS OF A WAREHOUSE

Warehouses play a crucial role in the supply chain by acting as storage and distribution hubs for goods. They serve as a bridge between production and consumption, ensuring products are available when and where they are needed. The key functions of a warehouse include:

- 1. Storage of Goods:** One of the primary functions of a warehouse is to store goods safely until they are needed. This helps in balancing the gap between production and consumption and allows businesses to maintain a buffer stock.
- 2. Inventory Management:** Warehouses help in keeping track of stock levels through inventory management systems. This ensures that there is always adequate stock to meet customer demands without overstocking.
- 3. Order Picking and Packing:** Warehouses are responsible for picking the correct items as per customer orders and packing them efficiently. Accurate picking and proper packaging are essential to ensure timely and damage-free deliveries.
- 4. Dispatching of Goods:** The warehouse coordinates the timely dispatch of goods to customers or retail outlets. This includes preparing shipping labels, documentation, and loading goods onto transport vehicles.

**5. Consolidation and Break-Bulk:** Warehouses often receive products from multiple suppliers, consolidate them, and ship them as a single order. They can also break bulk shipments into smaller quantities to suit the needs of different customers.

**6. Value-Added Services:** Modern warehouses offer additional services such as labeling, barcoding, kitting, quality checks, customization, and repackaging—adding value to the goods before delivery.

**7. Risk Bearing:** Warehouses provide protection against risks like theft, damage, and deterioration by using proper storage methods, security systems, and insurance coverage.

**8. Price Stabilization:** By storing goods when supply is high and releasing them when demand rises, warehouses help stabilize market prices, reducing fluctuations.

### Inventory Control and management

Inventory control and management is a vital function in any organization that deals with the storage and movement of goods. It involves the systematic approach to sourcing, storing, and selling inventory both raw materials and finished goods. Effective inventory control ensures that a business maintains an optimal stock level, reducing the risks of overstocking or understocking. This not only helps in minimizing carrying costs but also ensures that products are available to meet customer demands without delay. Techniques such as Just-in-Time (JIT), Economic Order Quantity (EOQ), ABC analysis, and perpetual inventory systems are commonly used to streamline inventory processes. Proper inventory management leads to increased efficiency in operations, improved cash flow, and better customer satisfaction. In today's competitive environment, the use of technology like barcode systems, warehouse management software (WMS), and RFID tracking plays a crucial role in enhancing inventory accuracy and operational performance.

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## LITERATURE WORKS FROM PREVIOUS STUDIES

In order to find the research gap and to find the insights about the sample size, techniques to be followed, depth reading of previous literature review is required. Here are some of the summaries of the reviews that are collected for the research purpose.

**Vacar Anca, *Logistics and Supply Chain Management: An Overview, Studies in Business and Economics, Vol. 14, Issue 2, Pg. No: 209–215, 2019.*** The purpose of this paper is to identify and explore the content of logistics and supply chain management and to find the connections and differential factors between the two areas. The study is based on a literature review and aims to identify the core subjects and the differences between the two domains in order to achieve a better and more comprehensive understanding of these topics.

**Jie Chang, *Research and Implementation on the Logistics Warehouse Management System, 2nd International Conference on Social Science and Technology Education (ICSSTE), Pg. No: 176-181, 2016.*** In this paper, we conduct research on the modern logistics warehouse management system. Enterprise supplies all activities were around to ensure that production and other tasks planned to finish the fundamental goal, therefore, on the one hand to accounting supplies must dosage, on the other hand to organize the material resource, including the enterprise internal resources and purchased from external resources.

**Mohd Fathi Mohamad, Zulkifli M. Udin, Kamal Imran Sharif, *Inventory, Warehousing and Transportation Management Impacts Towards Logistics Performance in Supply Chain Management, International Journal of Supply Chain Management, Vol. 7, Issue: 6, Pg. No: 296-299, 2018.*** The purpose of this article is to propose a framework related to the factors that impact logistics performance due to a lack of consensus on the factors affecting logistics performance. The factors proposed in this article include inventory management, warehouse management, and transportation management.

**Mehdi Keshavarz Ghorabae, *Assessment of distribution centre locations using a multi-expert subjective–objective decision-making approach, Vol. 11, September 2021.*** Distribution is a strategic function of logistics in different companies. Establishing distribution centre (DCs) in appropriate locations helps companies to reach long-term goals and have better relations with their customers. The assessment process is performed using the subjective and objective criteria weights determined based on multiple experts' judgments.

**Bhanuteja Sainathuni, Pratik J. Parikh, Xinhui Zhang, Nan Kong, *The Warehouse-Inventory-Transportation Problem for Supply Chains, European Journal of Operational Research, Vol. 237, Issue: 2, Pg. No: 690-700, 2014.*** Warehouses play a vital role in mitigating variations in supply and demand and in providing value-added services in a supply chain. However, observations of supply chain practices reveal that warehousing decisions are often not included when developing a distribution plan for the supply chain.

**James K. Higginson and James H. Bookbinder, *Distribution Centres in Supply Chain Operations, Logistics Systems: Design and Optimization, Springer, Chapter 3, Pg. No: 67–91, 2005.*** A supply chain consists of all flows and transformations from simple raw materials to the purchase of end-items by consumers. Various network nodes perform component fabrication, product assembly, or sales. These activities, however, require logistical support, such as the storage of intermediate or finished goods, consolidation of orders, and transportation.

**Sunil Chopra [Econ](#), *Designing the Distribution Network in a Supply Chain, Transportation Research Part E: Logistics Transportation Review [Econ Papers Research Gate](#), Vol. 39, Issue: 2, Pg. No: 123 – 140, 2003.*** This paper presents a framework for designing distribution networks within supply chains, discussing factors influencing network choices and evaluating various distribution strategies based on customer and product characteristics.

**David Luther, *Distribution Centres Explained, Digital Content Strategist, April 28, 2022.*** Distribution centres are logistics facilities that store finished goods before they're picked and packed to full fill customer orders. In a sense, they can be thought of as specialized, strategically located warehouses.

Distribution centres play a key role in the supply chain, particularly with regard to helping full fill customer orders more quickly and accurately while keeping associated costs down.

*Higginson, J.K., Bookbinder, J.H., Distribution Centres in Supply Chain Operations. Logistics Systems: Design and Optimization. Springer, Boston, MA. Pg. No: 67–91, 2005.* A supply chain consists of all flows and transformations from simple raw materials to purchase of end-items by consumers. Various network nodes perform component fabrication, product assembly or sales. These activities, however, require logistical support, e.g., storage of intermediate or finished goods; consolidation of orders; and transportation.

*Sushant Siddharth Wanjari, Measuring the Turnaround in Business Performance due to WMS and MES Implementation in a Process Manufacturing Client, European Journal of Business and Management Research Vol. 5, No. 5, October 2020.* The Warehouse Management System (WMS) and the Manufacturing Execution Systems (MES) have proven to be of massive help in increasing the organization's productivity and its ability to execute key logistic functions with great efficiency and effectiveness. The process manufacturing industry has a unique setup and requires good collaboration between the different elements of the supply chain to operate at the highest efficiency.

*Jessup, Eric, Pike, Quentin, Casavant, Ken, Empirical Estimation of Attributes Influencing Warehouse/Distribution Centre Operations: Washington State Warehouse Industry, 2006.* An estimated 21.6 million truck trips are made each year on Washington state highways. An estimated 45% of that transported freight originated from or is destined for a warehouse or distribution centre within the state. The growing amount of congestion within the state of Washington has prompted concern over the state's ability to anticipate and provide for current and future freight transportation infrastructure needs.

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## RESEARCH METHODOLOGY

The descriptive research design is used in this study. The population of the study is 125. The census method is adopted in this study. Data is collected through questionnaires. The respondents are employees in the organization. By collecting data from the organization it is very easy to analysis the impact of order processing time and dispatch delays. The **Chi – square test** is used in this research.

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## RESEARCH OBJECTIVES

To identify and analyze the key factors affecting delays and increasing operational costs in the warehouse dispatching system.

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## DATA ANALYSIS AND INTERPRETATION

To test the significant association between order processing time and dispatch delays experienced by the respondents.

**H<sub>0</sub>:** Order processing time does not significantly impacts dispatch delays in the Big Basket warehouse.

**H<sub>1</sub>:** Order processing time does significantly impacts dispatch delays in the Big Basket warehouse.

**VARIABLES:** Order processing time and Dispatch delays.

Chi-Square Tests			
Pearson Chi- Square	Value	Df	Asymptotic Significance (2-sided)
	19.256	16	0.256

**SOURCE:** Collected through questionnaire (Primary Data).

**TABLE VALUE @ 5% = 26.296**

**Degrees of Freedom (df) = 16**

**$\chi^2$  (Chi- Square value) = 19.256**

### INTERPRETATION:

The critical value of the chi-square with 16 degrees of freedom at 5 per cent level of significance equals 26.296. Since the sample **value of  $\chi^2$  (19.256)** is less than the critical value, there is enough evidence to accept the null hypothesis. Therefore, the null hypothesis is accepted and therefore, Order processing time has no significant influence on dispatch delays in an organization.

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## CONCLUSION

The study found that warehouse dispatch delays are mainly caused by a lack of proper tracking, poor demand forecasting, and workforce shortages. Implementing automation, improving inventory management, and optimizing warehouse layouts can significantly reduce costs and improve efficiency.

Safety, co-employee support, and training also play a crucial role in overall warehouse performance. By addressing these key areas, Big Basket can enhance its dispatching process, reduce delays, and minimize operational costs effectively. Additionally, warehouse dispatching was found to have no direct impact on cost reduction, but exploring alternative models like cross-docking, automation, and predictive analytics may improve efficiency and cost savings. The findings from Garrett's ranking emphasize that employee safety and engagement are top priorities, reinforcing the importance of workplace ergonomics, incentives, and training programs to enhance productivity. Implementing technology-driven solutions such as Warehouse Management Systems (WMS), barcode scanning, and AI-based dispatching can help streamline operations, reduce errors, and improve accuracy.

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## LIMITATIONS AND FUTURE RESEARCH DIRECTIONS

Since the study is conducted on the limited population, increase the sample size may reduce the flaws of the research.

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