

A STUDY ON EFFECTIVENESS OF WAREHOUSE MANAGEMENT

Submitted in partial fulfilment of the requirements for the award of

MASTER OF BUSINESS ADMINISTRATION

by

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DEPARTMENT OF BUSINESS ADMINISTRATION

SCHOOL OF MANAGEMENT STUDIES

SATHYABAMA

INSTITUTE OF SCIENCE AND TECHNOLOGY

(DEEMED TO BE UNIVERSITY)

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BONAFIDE CERTIFICATE

This is to certify that this Project Report is the bonafide work of **RUKESH T 42410189** who carried out the project entitled “**A STUDY ON EFFECTIVENESS OF WAREHOUSE MANAGEMENT**” under my supervision from October 2023 to December 2023.

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DECLARATION

I **Rukesh T (42410189)** hereby declare that the Project Report entitled “**A STUDY ON EFFECTIVENESS OF WAREHOUSE MANAGEMENT**” done by me under the guidance of **Dr. Yamuna D** is submitted in partial fulfilment of the requirements for the award of Master of Business Administration degree.

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ABSTRACT

In management, modern warehousing firms and distribution centres are overwhelmed with information related to the flows and storage of goods and services. The efficient and effective utilization of logistics-related information can enhance firms' ability to reduce costs while simultaneously improving customer satisfaction. Warehouse management systems (WMS) are frequently implemented and used with these goals in mind.

The current research examines resource-based empirical justification for the pursuit and implementation of WMS. In addition, a research agenda is offered to guide future research efforts related to WMS and the broader area of logistics information systems (LIS). At a same time Inventory management is a science primarily about specifying the shape and placement of stocked goods.

It is required at different locations within a facility or within many locations of a supply network to precede the regular and planned course of production and stock of materials. The effective and efficient management of any organization requires that all its constituent elements operate effectively and efficiently as individual SBUs / facilities and together as an integrated whole corporate. In today's competitive market environment companies are continuously forced to improve their warehousing operations.

Many companies have also customized their value proposition to increase their customer service levels, which has led to changes in the role of warehouses. This paper highlights the findings of the study to evaluate performance levels and enhance productivity of the warehouses by developing a WMS various distribution and to analyse the impact of effective and efficiency Warehousing on competitive strength, enhanced preservation & control and overall cost reduction and also to find out various factors affecting efficiency and effectiveness of warehouse system.

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CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION:

A warehouse is a facility in the supply chain to consolidate products to reduce transportation cost, achieve economies of scale in manufacturing or in purchasing or provide value added processes and shorten response time. Warehousing has also been recognized as one of the main operations where companies can provide tailored services for their customers and gain competitive advantage. There are various types of warehouses: they can be classified into production warehouses and distribution centre and by their roles in the supply chain they can be classified as raw materials warehouses, work-in-process warehouses, finished good warehouses, distribution warehouses, fulfilment warehouses, local warehouses direct to customer demand, and value-added service warehouses.

Typical warehouse functions as mentioned above the heterogeneous warehouses has different operations. However, most of them share some general pattern of material flow, and typical warehouse operations include: receiving, put away, internal replenishment, order picking, accumulating and sorting, packing, cross docking, and shipping.

Warehouses have been going through various challenges such as – supply chains are becoming more integrated and shorter, globalized operation, customers are more demanding and technology changes are occurring rapidly. In order to cope up with these challenges organizations are adopting innovative approaches such as warehouse management system. A warehouse management system or WMS primarily aims to control the movement and storage of materials within a warehouse and process the associated transactions, including shipping, receiving, put-away and picking.

A warehouse management system (WMS) is a database driven computer application, to improve the efficiency of the warehouse by directing put away and to maintain accurate inventory by recording warehouse transactions. The systems also direct and optimize stock based on real-time information about the status of bin utilization. it often utilises Auto ID Data Capture (AIDC) technology, such as barcode scanners, mobile computers, wireless LANs (Local Area Network) and potentially Radio-frequency identification (RFID) to efficiently monitor the flow of products. Once data has been collected, there is either batch synchronization with, or a

wireless transmission to a central database. The database can then provide useful reports about the status of goods in the warehouse.

The primary function of a warehouse control system is to receive information from the upper-level host system, most often being the warehouse management system, and translate it for the daily operations. A common goal is to ensure a situation where warehouse employees never have to retype information because it already lies in one system or is collected automatically. Warehouse control system is usually the interface that is used to manage processes, people and equipment on the operational level. Based on warehouse control system, literature distinguishes three types of warehouse management systems.

TYPES OF WAREHOUSEING:

DISTRIBUTION CENTER

Distribution centres are built around the premise of taking large quantities of inventory in for the purpose of moving it out to retailers and merchants relatively quickly. Products move within a distribution centre much more than a typical warehouse. Distribution centres are different from fulfilment centres, as fulfilment centres are typically used by third-party logistic companies rather than businesses or companies. Products stored in a distribution centre are moved around quickly within a supply chain. Distribution centres are paramount to the connection between suppliers and customers and are not simply for inventory storage but rather distribution, order fulfilment, and shipment preparation.

- Generally affordable to utilize for companies selling to wholesalers
- Designed to increase overall efficiency for inventory management
- Less money is wasted on long-term storage of product

PRODUCTION WAREHOUSES

The role of a production (or manufacturing) warehouse is to store the goods required for manufacturing operations. These installations serve to house and supply raw materials, production parts, components, and semi-finished products.

Likewise, these facilities feed company production lines, ensuring uninterrupted manufacturing. Hence, these supply facilities are usually set up near the production

centres. Often, they are connected to the plants themselves, in such a way that pallet conveyer can automatically move the goods to the production lines.

PUBLIC WAREHOUSES

A public warehouse is a warehouse owned by governmental entities that are available to private sector companies. These types of warehouses can be rented out for business or personal use. Public warehouses are an especially attractive option for business owners that might need to only store inventory for a short amount of time as other warehouse options might be more expensive. Public warehouses are commonly used by new or growing businesses, such as e-commerce companies and startups, due to their affordability versus a private warehouse. Note, public warehouses tend to be fairly bare-bones in terms of their setting, they won't have the technological capabilities of other warehouse types.

- Accessible to the public
- An affordable option for new businesses
- Great for seasonal businesses
- Ideal for short-term storage

PRIVATE WAREHOUSES

Another popular warehouse option is a private warehouse, oftentimes referred to as proprietary warehousing. While a public warehouse is owned by a government body or a third-party, private warehouses are owned by a company division. If a business is interested in a private warehouse, they will need to make a large upfront investment to secure the building, facilities management, and general maintenance and upkeep. Private warehouses are a popular option for wholesalers, distributors, and manufacturers. While a private warehouse is a more expensive option than a public warehouse, they offer business owners more overall control of their inventory management.

- Increased control over building facilities
- Great for companies that need a significant long-term presence in a specific region
- Provide a more exclusive location for business operations

SMART WAREHOUSES

An increasingly popular warehouse option is a smart warehouse, which is a warehouse where the storage and fulfilment processes are automated with AI, such as robots and drones. The AI is responsible for packing, weighing, transporting, and storing raw materials, with many incoming orders being automated to be fulfilled immediately. Smart warehouses have been a go-to option for large e-commerce companies such as Amazon that seek to make their order fulfilment and inventory management a more accurate and expedited process.

- Inventory management is more accurate
- Automated functions decrease human error and save on labour
- Increase safety and security within the facility
- Provide insight into overall business efficiency

GOVERNMENT WAREHOUSES

A government warehouse is owned by the government that is available for either public or private businesses to use. Government warehouses are often seen as a more ideal option than public warehouses as they tend to have increased security, which might be a necessity for certain products or goods. While the increased security of the facility is an appealing option, government warehouses tend to involve an intense application and extensive paperwork to store products in those facilities. Another drawback of government warehouses occurs in the case of a business failing to pay their rent, as the government can easily dispose of inventory to recover that rent.

- Increased security for sensitive goods and products
- Affordable rates and accessible warehousing

BONDED WAREHOUSES

A bonded warehouse is a type of warehouse that stores imported goods before customs duties are completed and paid for the products. Customs clearance can be an extensive process, and bonded warehouses provide a safe space for these goods in the meantime. Government bodies provide businesses a bond to rent the

space to ensure the business doesn't suffer from any loss of profits once products are ordered. These features of bonded warehouses can be attractive for importers that might need short-term or long-term storage for items that would usually be restricted.

- Companies do not need to pay duties until items are released from storage for delivery
- Facilities tend to be versatile to accommodate a large variety of products
- Ideal for companies or businesses that deal with cross-border trading

HISTORY OF WAREHOUSE

While basic warehousing and history of the evolution of inventory management had been around for thousands of years, with the advent of railroads and the telegraph, these systems began to improve at a remarkable rate. Suddenly, long-distance trades increased to incredible volumes and materials/goods could be shipped from one side of the country to the other in a matter of weeks instead of months. With more materials coming in, production/innovation time decreased, and efficiency increased. In order for businesses to stay on top, processes needed to cut down wait time as much as possible. So, when materials and goods started to run low, warehouses would send telegraphs out to factories, mines, refineries, etc. to send more product to the depot station to keep the flow of input coming without any slowdown in output.

Fast forward to 1925. Pallet racks developed and allowed for vertical storing of goods. Management of the warehouse history moved to optimize the cubic footage of a warehouse and build upwards. This allowed total warehouse storage to increase significantly. The following year, the idea of the forklift was developed to help move all these pallets. Suddenly large volumes of product could be moved with ease, increasing efficiency once more.

In 1967, IBM made the first computerized information system for warehouse management. This was used by aerospace companies and NASA to handle complex, high-volume transactions, such as order entry, warehouse inventory management, and other transaction-oriented applications.

A few short years later in 1971, Walmart opened its first distribution centre. This broadened the thinking of the whole supply chain. Storing goods in locations where they could be more quickly accessed to reach the end location and user cut down on time for shipping and restocking and was able to flexibly move product to certain locations based on the needs of said location.

Moving along to 1974, the first UPC barcode was used in Troy, OH, for Wrigley's Chewing Gum. Storing information about the product coded, UPC barcodes changed the way inventory in a given warehouse was counted, tracked, and known by every employee. No longer did every worker need to memorize attributes of a given product or use a reference sheet. Suddenly all the relevant information was stored within the barcode.

The following year in 1975, J.C. Penney created the first real-time WMS. This was a game-changer. With warehouse stock software that updates stock inventory in real-time, J.C. Penney reduced time spent looking for a product that wasn't there and focused efforts on other areas to grow their business.

In 1988, Walmart created the first cross-docking system. Adding another notch to the list of Walmart accomplishments, cross-docking allowed for the reduction of time spent on the put away, storage, and selection warehouse operations, as to significantly reduce distribution costs.

Then in the 1990s, the logistics boom was fuelled further by the emergence of Enterprise Resource Planning (ERP) systems. The result of this emergence was a tremendous improvement in data availability and accuracy. The new ERP software dramatically increased and shined a spotlight on the need for better planning and integration among logistics components. The result was a new generation of "Advanced Planning and Scheduling (APS)" software.

All this has led us into the 21st century and the days of cloud-based paperless warehouses.

PROCESS OF WAREHOUSE



RECEIVING

During the initial receiving process, the warehouse must verify it has received the correct product from the suppliers (including quantity and condition). If an item is not up to the agreed-upon quality standards, the warehouse should report discrepancies and detail any missing products.

This step is often considered the most crucial, as failing to report errors will have an impact on all subsequent warehouse processes.

PUTAWAY

After the warehouse completes the receiving process, the putaway staff controls the movement of goods from the receiving dock to the appropriate warehouse storage location.

It is important that the products are quickly put away in the proper location, while ensuring that the products are not damaged. If done properly, products are easier and faster to find, track, and receive which maximizes the warehouse storage and increases labour efficiency.

PICKING

During the picking process, the warehouse fulfillment team finds and collects products to fulfil customer orders. Though this part of the process can account for an estimated 55% of total operating expenses, there are ways to streamline this process to achieve higher accuracy and reduce costs.

Though each case may require a different strategy, some ways to increase warehouse efficiency include:

- Introducing technologies such as mobile and wearables to allow pickers to interact with the warehouse in real-time.
- Utilizing barcode scanners to improve picking accuracy.
- Assessing the warehouse layout to ensure inventory is stored in an organized manner. For example, this may include storing the highest volume inventory toward the front of the warehouse.

PACKING

After picking is complete, the fulfillment team consolidates the picked items in a sales order and prepares shipment to the customer. The primary goal of packing is to handle the items with care, ensuring there are minimal damages prior to the items leaving the warehouse.

SHIPPING

After the items are carefully packed and appropriately labeled, the goods are ready to leave the warehouse and be dispatched to the correct customer address. It is the fulfillment team's job to check that the order has been sorted, loaded, and shipped to the correct address in order to avoid customer complaints (which can become costly mistakes). Additionally, if the products have been scheduled to be delivered at a specific time, the fulfillment team should manage the dispatch accordingly.

The shipping process is not deemed successful unless the products have gone through transit and safely found their way to the customer in a timely manner. The completion of processes 1-4 are critical to the success of the shipping process. The efficiency of the previous steps plays a huge factor in the dispatching of products.

FUTURE TRENDS IN WAREHOUSE MANAGEMENT

Nearly everything we've covered until now is outdated. Sure, hardware like forklifts, pallets, and racks are all still used today, but the systems on which warehouses and inventory are managed are lightning-fast by comparison-and significantly more efficient. Today's warehouse management system (WMS) is a hub of integrations, connecting warehouse inventory to all areas of the supply chain, and is accessed online and often from the cloud. One thing to note, Extensive (formerly 3PL Central) built 3PL Warehouse Manager, the very first cloud-based WMS back in 2006, and has been a leader in the online WMS space ever since. By reducing manual paper processes and keeping warehouse information stored in a centralized location where multiple people can access it at different terminals (i.e., online and through the cloud), the time lag for recording every single interaction with and within a warehouse decreases ten-fold, thus saving warehouses thousands of labour hours each year.

The most important features of the modern WMS are that they integrate, they're fast, and they provide accurate information.

An integrated WMS will allow access to multiple software programs, all from within a single platform (AKA single sign-on). No more needing to remember scores of login credentials to accomplish seemingly simple, yet crucial tasks, like sharing inventory with shopping carts, pulling carrier tracking numbers for shipping labels, and more.

A fast WMS has no lag time and accomplishes tasks instantaneously. Need to run an inventory report for a customer? Compute in seconds. Need to set up the shipping labels to deliver the product to the end destination? One button click away. Need to calculate the total billable hours for warehouse work completed? Automate monthly recurring charges for customer billing. These things used to be done

individually, based on the requests of a customer, or one at a time by humans, which was a slower, error-prone, and arduous process.

Above all else, a warehouse inventory must be accurate. Customers demand speed, but they also demand that their order is correct. No leniency is given to businesses or warehouses that mess up their order. With Smart scan, third-party logistics (3PL) warehouses can reach 100% order picking accuracy, ensuring that customers stay happy with the orders they receive.

While no one has a perfect crystal ball to know exactly what the future has in the first store system, we can share some educated insights based on industry knowledge and trends we've seen over the years.

While warehouse management systems already do a great job of reducing the manual tasks that cost a warehouse many labour hours, there are still areas for improvement and more parts of the supply chain that can eventually connect to a WMS.

Examples of areas that can be automated by a WMS include using robots, drones, and other hardware to not only pick, pack, and put away products, but also even run cycle counts. As image recognition software improves, robots will be able to run cycle counts to physically double-check the inventory tracking that's been traditionally a tedious job done by individuals.

Now, this isn't to say that we want to replace warehouse workers entirely-just reduce their burden of monotonous tasks when their labour and thinking power can be better spent accomplishing other tasks on behalf of the warehouse process. Tasks like taking care of customers and finding efficiencies. Areas that require imagination, interpretation, and aren't easily automated by software, should be left to your employees.

1.2 INDUSTRY PROFILE

KONE as a global leader in the elevator and escalator industry, KONE provides elevators, escalators and automatic building doors, as well as solution for modernization and maintenance to add value to buildings throughout their life cycle.

Our versatile product portfolio features a wide range of innovative products including elevators, escalators, auto walks, automatic building doors, monitoring, access and destination control systems.

1.3 COMPANY PROFILE

KONE Presence in India dates back to 1984, when it formed a joint venture called Beacon KONE with Best and Crompton engineering Ltd., a large and diversified company based in Chennai, Tamil Nadu. Beacon KONE opened a factory in 1987 near Chennai.

In 1992 KONE Purchased Best and Crompton's interest in Beacon KONE, and KONE India became a 100% subsidiary of KONE Corporation.

Headquartered in Chennai, KONE India has 4300+ employees with regional offices in four major cities and 40 branches across India & Nepal.

KONE India also caters to the markets of Bangladesh, Sri Lanka and Bhutan through authorized distributor models.

1.4 STATEMENT OF THE PROBLEM

The issue of pickers taking "too many steps" is a very common one in warehouse operations, especially in facilities that effectively managed the warehouse. It usually becomes most apparent when pickers are constantly zig-zagging the warehouse floor to reach the designated inventory, are consistently having trouble hitting their goals, or are finding themselves getting distracted throughout the day. Improper cooperation of one department to another department. Inadequate storage space and inefficient use of available storage are common problems in warehouses. The problem is to improve the effectiveness of warehouse management. Specifically, this involves optimizing the processes and system used to receive, quality, store and dispatch goods in the way that maximizes efficiency, key issues to be addressed may include, inventory management, order fulfilment, seasonal influence, express shipment, safety precautions. The goal is to ensure that the warehouse operates smoothly and effectively, supporting the overall process of warehouse.

1.5 OBJECTIVE OF THE STUDY

- To understand the overall process of warehouse management.
- To identify the quality measures and issues in day-to-day work.
- To identify the storage facility, Easy accessibility of inventory, movement of goods.
- To identify the employee satisfaction towards process following our company.
- To know the dispatching process and consequences in day-to-day work.
- To identify the safety precaution following in working place.

1.6 NEED FOR THE STUDY

The need for this study arises from the overall process that strengthen the warehouse, A well effective warehouse process can help to achieving the industry objective. The effective warehouse management can help the improve operational flow, quality measures and issues in day-to-day work, storage facility, easy accessibility of the inventory, movement of goods, dispatching process and consequences in day-to-day work, also the safety precaution to smoothening the operation flow and also the study help has to improve the cooperation and coordination between the other departments.to comply with regulations: there may be regulatory requirements around inventory tracking, storage conditions, and shipping practices that must be followed.

1.7 SCOPE OF THE STUDY

The scope of the study is to help for the management to identify the various process of the warehouse management and to take decision to eliminate and implements.

- This study will not only help me as a student but it also assists the company to improve the process as well as increase operational flow to delivering the jobs.
- This will be a great step for the further improvement toward warehouse well as output that will enhance the management to apply the study in the company.
- This study may be taken as reference for the future studie

CHAPTER 2

REVIEW OF LITERATURE

2.1 REVIEW OF LITERATURE

A.Gunasekeran,H.B. Marri, F.Menci(1999): The warehouse is the interface area for production lines, market, customers and suppliers, and the business environment in general. Goods inwards (GI), constituting part of the warehouse activities, is the department responsible for booking-in the incoming parts from external suppliers. After the production process is improved, the resources in the warehouse are balanced to link the internal/ external transfer of physical items. With a broader view of the GI activities, and a look into its future, the actual problems may become clear, understandable, and hence easy to solve. The aim of this paper is to study the problem areas in GI and provide solutions to increase the performance of warehousing operations. First, a conceptual framework has been developed to improve the effectiveness of warehousing operations. Second, a case study has been conducted with the help of the model to minimize the through-put time in warehousing operations. Finally, a summary of findings and recommendations are presented.

De Koster et al. (2007): There is a significant body of literature that examines the effectiveness of warehouse management projects. Several studies have highlighted the positive impact of warehouse management systems (WMS) on warehouse performance. For instance, a study by De Koster et al. (2007) found that the implementation of a WMS resulted in significant improvements in warehouse productivity, inventory accuracy, and order processing time.

Tan et al. (2010): In addition to WMS, other warehouse management projects such as cross-docking, automated storage and retrieval systems (AS/RS), and pick-to-light systems have also been found to improve warehouse performance. For instance, a study by Tan et al. (2010) found that the implementation of a pick-to-light system resulted in significant improvements in order picking accuracy and productivity.

Senior lecturer (Operations management) Harish Kumar (2009-2011): Inside the walls of the warehouse, the utilization of every component—space, people, inventory and equipment—will impact the bottom line in profound ways over time. Warehouse Management enables us to analyse these components continually, so we can conserve

effort, fill orders faster and more accurately, save space and reduce inventory.

M.Toboada rodriguez (2015): as the supply chains get more complex, the variety of indicators and tools to measure warehouse performance has also increased. Furthermore, the metrics that are used for performance evaluation are assessed in different manners and hence there is not clear definition for some of these metrics. To address these issues, this literature review focuses on operational warehouse performance measurement, for which the warehouse managers need to carry out periodic analysis. Using the content analysis method, performance indicators are acquired from selected papers and are classified according to time, cost, quality and productivity dimensions.

Bhavin Shah and Vivek Khanzode(2015): This paper comprehensively discusses the existing state-of-the-art warehousing literature and highlights concerned research issues as per the proposed taxonomy. All previous reviews broadly focus on warehouse design and operational issues ignoring performance measures affecting each function of warehousing and overall productivity. Therefore, this paper tries to identify the specific performance measures and methods, and explore their impact on the overall logistics system. Each individual section has been concluded with important findings and these are summarised along with converged research guidelines in the last section. The proposed gaps would provide a future road map for research in existing and other unexplored directions in warehouse operations and management.

Dr.J.P.Saxena(2011): Inside the walls of the warehouse, the utilization of every component—space, people, inventory and equipment—will impact the bottom line in profound ways over time. Warehouse Management enables us to analyse these components continually, so we can conserve effort, fill orders faster and more accurately, save space and reduce inventory.

K.N.Subramanya R V C E Dept. of Industrial Engineering and Management, RVCE, Bangalore(2015): In a supply chain, warehousing function is very critical as it acts as a node in linking the material flows between the supplier and customer. In today's competitive market environment companies are continuously forced to improve their warehousing operations. Many companies have also customized their value proposition to increase their customer service levels, which has led to changes in the role of warehouses. This paper highlights the findings of the study carried out to evaluate performance levels and enhance productivity of the manual warehouses by developing a WMS framework and cost benefit analysis.

Eric M. Burke and Danny L. Ewing (2013): Explore the potential value of combining automatic identification and robotics technology in order to improve asset visibility within a warehouse environment. The defence Logistics Agency (DLA) experiences high costs associated with inventory inaccuracies and annual inventory audits. Our project examines technologies that could be used to improve the DLA's asset visibility. This study examines current industry applications of viable technologies in the marketplace and whether implementing these technologies would provide a sound economic solution. A cost- benefit analysis is included to determine the affordability of efficiencies that RFID and barcoding bring to warehouse operations. This analysis encompasses costs for systems purchase, implementation, and integration. Benefits are measured by cost savings in manpower requirements, increased efficiencies in order and restocking times, and improved accuracy in inventory management.

ScottB.KellerandBrianC.Keller(2014):This chapter explores warehousing's expanded role in customer operations and supply chain management. You learn about historical and current examples of warehouse support to manufacturing, purchasing, and various economies of operations. This chapter discusses competitive supply chain strategies, providing examples of value-added services that warehouses can now provide. With the expansion from a one-dimensional storage repository to a main element

of customer supply chains, the warehouse is now expected to contribute to the overall client business objectives and contribute to cost reductions.

Kah-Shien Tan, M. Daud Ahmed (2010): Sustainable warehouse is about integrating, balancing and managing the economic, environmental and social inputs and outputs of the warehouse operations. Sustainability is a core value to many businesses but they find it hard to implement in their current business setting especially when they use third party logistics management system like warehousing and distribution in their supply chain business network. This paper explores the application of sustainability principles in the context of warehouse storage and distribution management and introduces a sustainability model for setting up of a warehouse or transformation of an existing warehouse that provides the storage services. The model incorporates the usage of third-party transportation systems for supply and distribution services.

Ul-Ain et al (2017): proposed comprehensive knowledge about what has found in the domain of the B.I. system adoption, utilization and the Process of the success. A total of 111 peer-reviewed studies, covering mainly three categories which are adoption, utilization and success, which were selected. The findings will present the research methods, underpinning theories and key factors employed to study B.I. system adoption, utilization and success. Besides, the review identified the key issues related to B.I. adoption, utilization and success and highlighted the areas that have attracted more or less attention. This study also suggests future directions for researchers and practitioners in terms of unexplored themes that may help organizations to obtain value from B.I. systems.

Peter,Tamas,Peter,Dobos,Bela,Ille(2017): In real-time situations, operating warehouse management system(WMS)-which can be purchased for enterprise resource planning system(ERP)-are not able to satisfy companies' needs in all cases. In many cases, numerous improvement possibilities remain unused (e.g: optimized material handling, system-evaluation functions, etc). the subject of this paper are possible directions for

WMS improvements and possible ways of their implementation. One frequently applied improvement method is the development of supplementary application. These implementation methods and process are also discussed and an exemplary solution for a specific company problem is provide.

Furkan Yener, Harun Resit Yazgan (2019): This paper investigates the effectiveness of designing warehouses to determine average order picking time and travelled distance using a data mining technique. Order picking is a warehouse operation that is repeated for each order. Therefore, it can have a significant impact on system efficiency. Based on this framework, three issues are examined in this study, the effectiveness of warehouse design, an assignment problem is solved with using a new proposed mathematical model and a Multidimensional Scaling Algorithm (MDS), and order picking process. The proposed mixed integer quadratic model consists of associations rules related to a customer's consumption pattern, capacity of the items, and stores both the distance among items and staging area. The routes from a large number of randomly selected picking requests are sorted by integer linear mathematical model which bases on the Vehicle Routing Problem (VRP). The effectiveness of the warehouse design, alternative assignments and different order picking policies are evaluated by using a simulation method on a real-life problem. This study may cause to minimization of fork lift numbers, worker numbers, overtime payments and congestions of forklift drivers. Moreover, system throughputs and customer satisfaction is increased. Results of the study shows that the proposed approach using the mathematical model produce much more favourable results for the warehouse management.

St.Mary's University(2018): The purpose of this research is to assess the existing warehousing Effectiveness of Finfinnee Furniture Factory plc (3F). The researcher prefers to use a descriptive research type, which helps to use both qualitative and quantitative data analysis. The target population is 59 employees and they were taken using census sampling methods. Questionnaires, as well as observation were used to collect primary data.

The researcher validated the research by pilot testing of the questionnaires through distributing the questionnaires for some staff members of the company who involved in warehousing effectiveness. Then, the collected data were analysed by using IBM SPSS statistics 20, such as percentages, frequencies, mean and standard deviation and the analysed data were presented in tables. The findings showed that, in its current form, the warehousing effectiveness of the case company can be divided according to the five warehousing activity which is: Receiving, unloading, Storage, Order processing, and delivery. Moreover, results of the study revealed that even though respondents rating as a moderate or a little bit above the company overall warehousing effectiveness, there are also so many various challenges in performing those warehousing activity: lack of adequate warehousing facility, lack of information technology infrastructures, lack of training, lack of manpower (labour) and warehousing personnel. Despite the limitation, the study is believed to create awareness about the concept, principle and Effectiveness of warehouse management in the case company. It is thus recommended that the company should have effective warehouse management training and try to improve the listed five ware housing activities of the company.

JamesC.Chan(2013): This research presents the integration of lean production and radiofrequency identification (RFID) technology to improve the efficiency and effectiveness of warehouse management. More than ten million parts belonging to around 10,000 types in a distribution centre were involved in this study. There are more than 10,000 storage and retrieval operations for hundreds of part types on a daily basis. Value stream mapping was used to draw current state mapping and future state mapping (with lean management and RFID) with material flow, information flow, and time flow. Preliminary experiments showed that the average reading rate of electric forklift and hydraulic cart are 99.3 and 99.1 % by fixed ultra-high frequency RFID readers with antenna installed at the receiving/shipping dock and passive tags mounted on box/pallet. The processing time of data transmitting to warehouse management system at receiving and shipping docks was reduced by 99 and 89 %, respectively. The total operation time from current

stage to future stage with only lean can be saved by 79 %. With further integration of RFID to lean, the total operation time can be saved by 87 %. Moreover, performance on saving total operation time can be enhanced to 91 % with cross-docking. The benefit of using RFID in the warehouse management is realized.

Nadezda klabusayova(2013):The aim of the article is to analyse and to provide a detail determination of some aspects that influence the effective functioning of the stock processes in the modern retail chains. The article deals with the monitoring of the Key Performance Indicators (KPI) and of the efficiency of the stock processes. Other areas described in the article are some aspects of the modern stock management by using the Warehouse Management System (WMS) with orientation on the reception of goods and picking of goods processes. In the area of the reception of goods, the article deals with the utilization of the Electronic Data Interchange for the Despatch Advice (EDI DESADV) in combination with the exploitation of the Serial Shipping Container Code (SSCC) during the goods reception. The picking of goods process is supported by the voice technology for picking of goods.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 RESEARCH METHODOLOGY

Research design is the base on which researcher proceed toward the study of the problem after formulating hypothesis. It refers to the methodology used to conduct the research investigation. It is a process of making decisions before the situation arises in which the decision has to carried out. It is the blueprint of the detailed procedure of testing the hypothesis and analysis of the obtained data.

A research design in simple words is a plan of action, a plan for collecting and analysing data in warehouse, efficient and relevant manner. The purpose of preparing research design could be either to test the hypothesis or to give a cause effect relationship to the given situation. A research design is the arrangement of conditions for collection and analysis data in a manner that aims to combine relevance to the research purpose with warehouse purpose

Research methodology is a way to systematically solve the research problem. It may be understood as a source of studying. Now research is done systematically. In that various steps, those are generally adopted by a researcher in studying his problem along with the logic behind the methods.

The primary aim of this paper is to investigate the process of warehouse management. This is achieved by developing a similar empirical framework first used. The study focuses exclusively on the research. As a part of a study designed to analyse the warehouse process. The methodology is the primary part of the research work. This area could concentrate on the sources, which are available to collect data and how the collected data are arranged, and what kind of statistical tools and techniques have been used to analyse and interpret the collected data and compared the results with the actually developed hypothesis.

3.2 RESEARCH DESIGN:

- A research design is the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with warehouse management. The research design followed to study the warehouse management in KONE Distribution centre India private limited.
- For this research study, descriptive research design was used. The importance and need for Warehouse Management as a whole, in a service

sector to promote and develop the Process of Warehousing was studied and are described in detail.

3.3 SAMPLE DESIGN:

I have concerned the one those who aware about company's Warehouse management, Quality measures, inventory, put away process, picking process barcode scanning, dispatching, safety measures, stock cycle etc.

The sources of data are collected through questionnaire, company work progress sheet and other flow chart information.

3.4. DATA COLLECTION:

Data collection plays an important role in research work. Without proper data available for analysis, you cannot do the research work accurately.

- Primary data collection

The information is collected through the primary sources likes:

- Talking with the employees of the department.
- Getting information by observations in Warehousing processes.
- Discussion with the head of the departments of Quality, Inventory, Dispatch, and Safety.
- Questionnaire survey.

The primary data is that data which is collected fresh or first hand, and for first time which is original in nature. Primary data can collect through personal interview to support the secondary data. In this research project, the researcher has not collected any primary information with regarding to this research project.

3.5 TOOLS FOR ANALYSIS:

- Percentage analysis: percentage analysis tool is used for hypothesis testing
- Descriptive analysis: descriptive hypothesis testing is used for hypothesis testing
- Chi-square: chi-square tool for testing hypothesis
- Correlation: correlation tool for hypothesis testing

3.6 STRUCTURE OF QUESTIONNAIRE:

Questionnaire was divided into two sections. First part was designed to know the general information about employees and the second part contained each department of the KONE DISTRIBUTION CENTER-ORAGADAM.

3.7 PERIOD OF STUDY:

The study was conducted from a period of 3 months from January 2023 to March 2023.

3.8 TARGETED PEOPLE OF STUDY:

For research, the target persons are the employees on KONE DISTRIBUTION CENTER-ORAGADAM.

3.9 HYPOTHESIS:

The reason for undertaking research is to observe a specific phenomenon. A hypothesis, therefore, lays out what the said phenomenon is. And it does so through two variables, an independent and dependent variable.

3.10 STATISTICAL TOOLS:

- Chi square: The chi-square test is a statistical method commonly used in data analysis to determine if there is a significant association between two categorical variables
- Correlation analysis: Correlation analysis is statistical method that is used to discover if there is relationship between two variables/datasets, and how strong that relationship to identify the relationship in rating of transport contractor and express shipment.

CHAPTER 4

DATA ANALYSIS AND INTERPRETATION

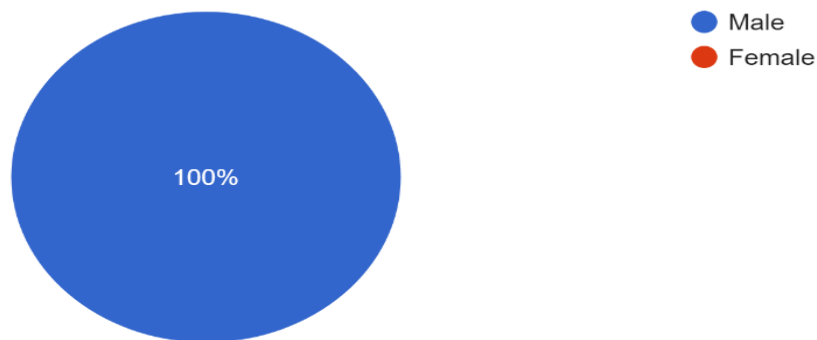
DATA ANALYSIS AND INTERPERTATION

4.1 Percentage Analysis

Table 4.1.1 Gender of the respondent.

Particular	No. of Respondent	Percentage of Respondent
Male	110	100
Female	0	0
Total	110	100

Chart 4.1.1: Gender of the respondent



INTERPRETATION:

From the above table, it is interpreted that 100% of respondents belong to Male category, 0% of respondents belongs to Female category.

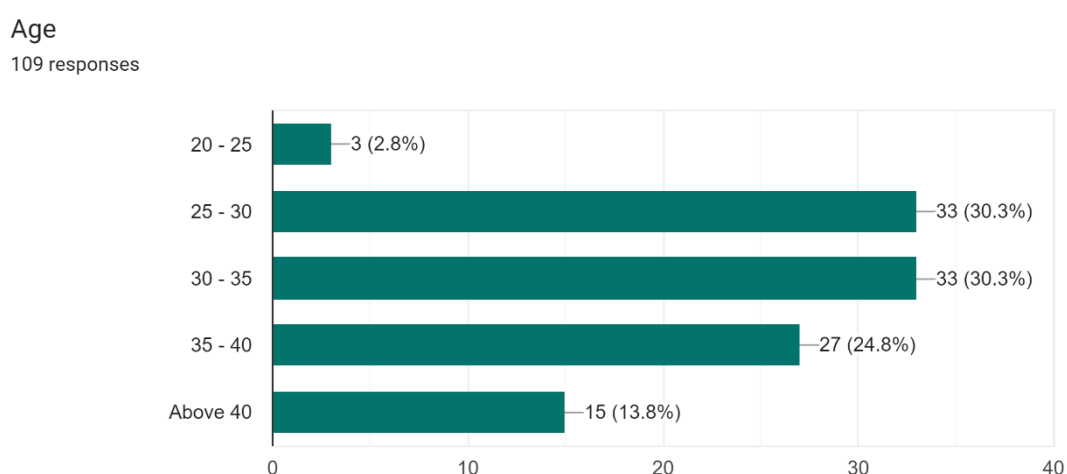
INFERENCE:

Majority (100%) of the respondents are Male.

Table 4.1.2: Age of the respondent.

Particular	No. of Respondent	Percentage of Respondent
20-25	3	2.8
25-30	33	30.3
30-35	33	30.3
35-40	27	24.8
Above 40	14	13.8
Total	110	100

Chart 4.1.2: Age of the respondents



INTERPRETATION:

From the above table it is interpreted that the number of respondents 20- 25 age of respondents is 2.8%, between 20- 25 age of respondents 30.3%, between 30 - 35 age of respondents is 30.3%, between 35-40 age of respondents 24.8%, Above 40 ages of respondents are 13.8%.

INFERENCE:

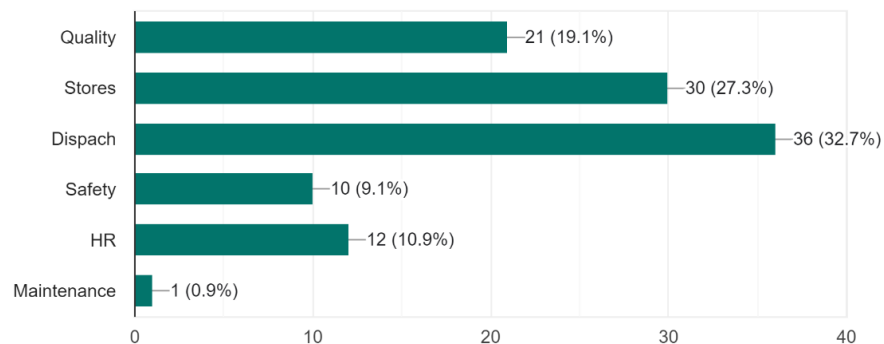
Majority (33.3%) of the respondents are age between 25-30 and 35-40 years.

Table 4.1.3: Department of the respondent

Particular	No. of Respondent	Percentage of Respondent
Quality	21	19.1
Stores	30	27.3
Dispatch	36	32.7
Safety	10	9.1
HR	12	10.9
Maintenance	1	0.9
Total	110	100

Chart 4.1.3: Department of the respondent

Which department do you belong
110 responses



INTERPRETATION:

From the above table it is interpreted that the number of respondents 19.1% belongs to Quality department, 27.3% are belongs to stores department, 32.7% are belongs to dispatch department, 9.1% are belongs to safety department, 10.9% are belongs to HR department, 0.9% are belongs maintenance.

INFERENCE:

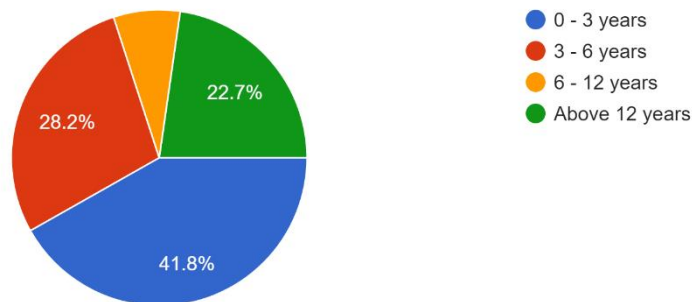
Majority (32.7%) of the respondents from dispatch department.

Table 4.1.4: working experience of the respondents

Particulars	No. of respondent	Percentage of respondents
0-3 years	46	41.8
3-6 years	31	28.2
6-12 years	8	7.3
Above 12 years	25	22.7
Total	110	100

Chart 4.1.4: working experience of the respondents

How long have been working in the company?
110 responses



INTERPRETATION:

From the above table it is interpreted that the number of respondents 41.8% are 0-3 years experienced, 28.2% are 3-6 years experienced, 7.3% are 6-12 years experienced, 22.7% are above 12 years experienced.

INFERENCE:

Majority (41.8%) of the respondents are 0-3 years experienced

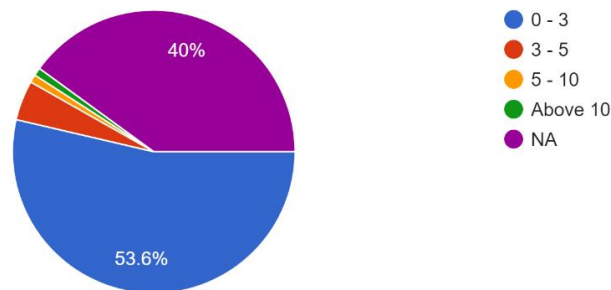
Table 4.1.5: Defects inspected in day-to-day work of the respondents

Particulars	No. of Respondent	Percentage of Respondent
0-3	59	53.6
3-5	5	4.5
5-10	1	0.9
Above 10	1	0.9
NA	44	40
Total	110	100

Chart 4.1.5: Defects inspected in day-to-day work of the respondents.

How many defects have you inspected in day to day work?

110 responses



INTERPRETATION:

From the above table it is interpreted that the number of respondents 53.6% of the respondents are respond 0-3, 4.3% of the respondents are respond 3-5, 0.9% of the respondents are respond 5-10, 0.9% of the respondents are respond above 10, 40% of the respondents are respond NA.

INFERENCE:

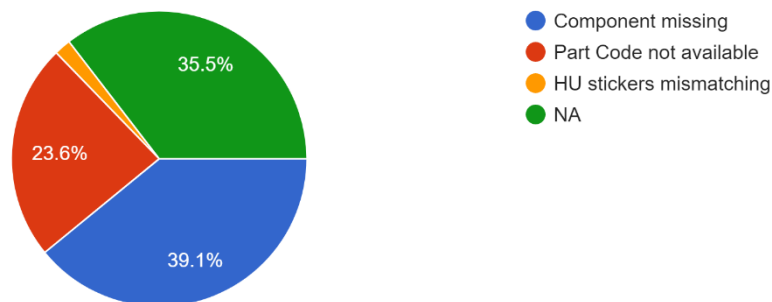
Majority (53.6%) of the respondents are 0-3 defects are inspected in day-to-day work.

Table 4.1.6: Difficult task faced by quality management of the respondents

Particulars	No. of Respondents	Percentage of Respondents
Component missing	43	39.1
Part code not available	26	23.6
HU stickers mismatching	2	1.8
NA	39	35.5
Total	110	100

Chart 4.1.6: Difficult task faced by quality management of the respondents

what are the difficult task faced in quality management?
110 responses



INTERPRETATION:

From the above table it is interpreted that the number of respondents 39.1% of the respondents are respond component missing,23.6% of the respondents are respond part code not available,0.9% of the respondents are respond HU stickers mismatching,35.5% of the respondents are respond NA.

INFERENCE:

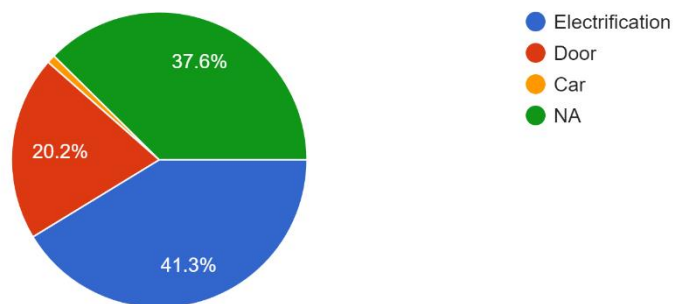
Majority (39.1%) of the respondents are component missing is the difficult task faced in quality management.

Table 4.1.7 Category of materials have major defects in a regular manner of the respondents

Particulars	No. of Respondents	Percentage of Respondents
Electrification	45	41.3
Door	22	20.2
Car	1	0.9
NA	41	37.6
Total	110	100

Chart 4.1.7 Category of materials have major defects in a regular manner respondents.

What category of materials have major defects in a regular manner?
109 responses



INTERPRETATION:

From the above table it is interpreted that the number of respondents 41.3% of the respondents are respond electrification, 20.2% of the respondents are respond door, 0.9% of the respondents are respond car, 37.6% of the respondents are respond NA.

INFERENCE: Majority (41.3%) of the respondents are respond electrification is major defects in regular manner.

Table 4.1.8 company clearly communicated the quality policy/values of the respondents.

Particulars	No. of Respondents	Percentage of Respondents
Not clearly communicated and visible	0	0
It's displayed with poster in some department	4	3.6
It displayed with poster in each department	41	37.3
It is frequently communicated in innovative ways	65	59.1
Total	110	100

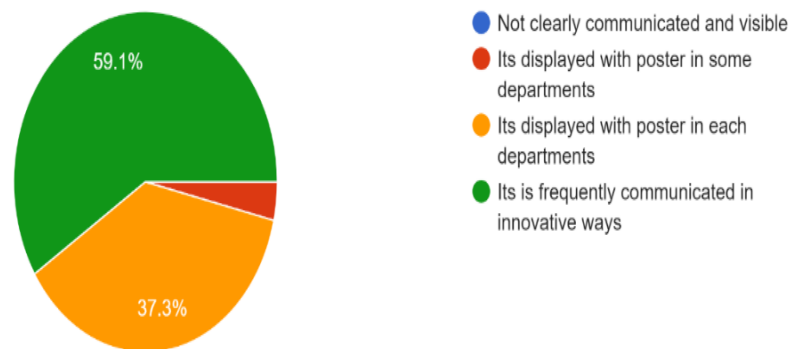
INTERPRETATION:

From the above table it is interpreted that the number of respondents 0% respondents are respond policy /value not clearly communicated and visible,3.6% of the respondents are respond policy /values are displayed in some departments,37.3% respondents are responding policy/values displayed with poster in each department,59.1% of the respondents are respond it is frequently communicated in innovative ways

Chart4.1.8: company clearly communicated the quality policy/values of respondents

Does your company clearly communicated the quality policy /values to employees?

110 responses



INFERENCE:

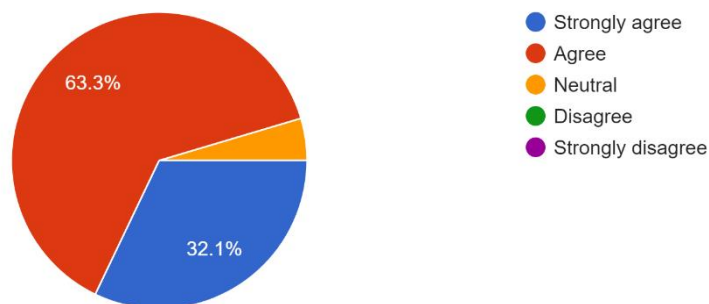
Majority (59.1%) of the respondents are respond policy/values are frequently communicated in innovative ways.

Table 4.1.9: Storage space can improve in our company of the respondents.

Particular	No. of Respondents	Percentage of Respondents
Strongly agree	35	32.1
Agree	69	63.3
Neutral	5	4.6
Disagree	0	0
Strongly disagree	0	0
Total	109	100

Chart 4.1.9: Storage space can improve in our company of the respondents

Are you agree with storage space can improve in our company?
109 responses



INTERPRETATION:

From the above table it is interpreted that the number of respondents 32% of the respondents are strongly are the statement, 63.3% of the respondents are Agree the statement, 4.6% of the respondents are respondent neutral.

INFERENCE:

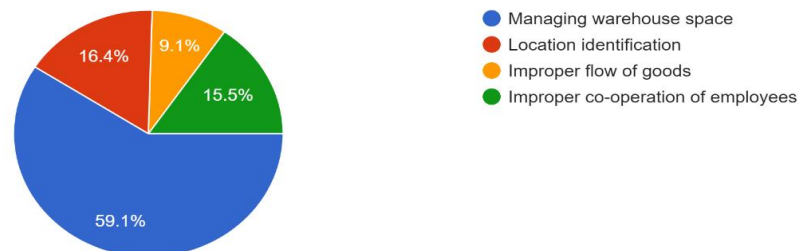
Majority (63.3%) agree with storage space can improve in our company

Table 4.1.10: Major problem occurred in inventory area of the respondents

Particulars	No. of Respondents	Percentage of Respondents
Manage warehouse space	65	59.1
Location identification	18	16.4
Improper flow of goods	10	9.1
Improper cooperation of employee	17	15.5
Total	110	100

Chart 4.1.10: Major problem occurred in inventory area of the respondents

What are the major problem occurred in inventory area?
110 responses



INTERPRETATION:

From the above table it is interpreted that the number of respondents 59.1% of the respondents are respondent manage warehouse space, 16.4% of the respondents are respond location identification, 9.1% of the respondents are respond improper flow of goods, 15.5% of the respondents are improper co-operation of employees.

INFERENCE:

Majority (58.1%) of the responds managing warehouse space is the problem occurred in inventory area.

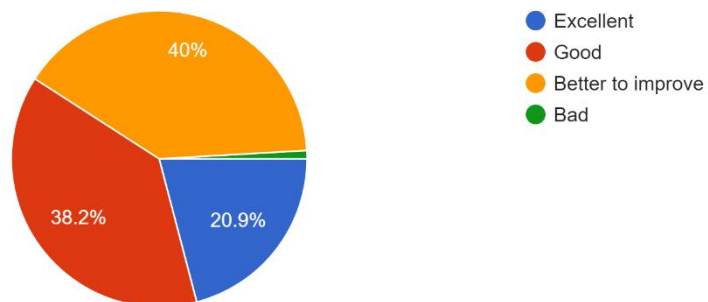
Table 4.1.11: Views about the present inventory control system of the respondents

Particulars	No. of Respondents	Percentage of Respondents
Excellent	22	20.9
Good	42	38.2
Better to improve	44	40
Bad	1	0.9
Total	110	100

Chart 4.1.11: Views about the present inventory control system of the respondents

What is your views about the present inventory control system?

110 responses



INTERPRETATION:

From the above table it is interpreted that the number of respondents 20.9% of the respondent excellent, 38.2% of the respondent good, 40% of the respondent better to improve, 0.9% of the respondent bad.

INFERENCE:

Majority (40%) of the responds are better to improve the present inventory control system.

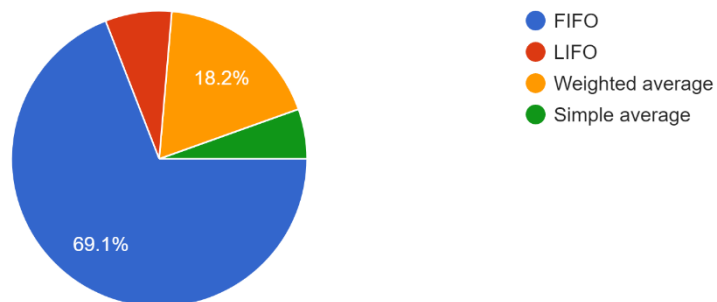
Table 4.1.12: Inventory control techniques followed in our company of the respondents

Particulars	No. of Respondents	Percentage of Respondents
FIFO	76	69.1
LIFO	8	7.3
Weighted average	20	18.2
Sample average	6	5.5
Total	110	100

Chart 4.1.12: Inventory control techniques followed in our company of the respondents

which inventory control techniques followed in our company?

110 responses



INTERPRETATION:

From the above table it is interpreted that the number of respondents 69.1% of the respondents followed FIFO techniques, 7.3% of the respondent are followed LIFO techniques, 18.2% of the respondents are followed weighted average techniques, 5.5% are respondent is followed simple average techniques.

INFERENCE:

Majority (69.1%) of the responds are followed FIFO techniques

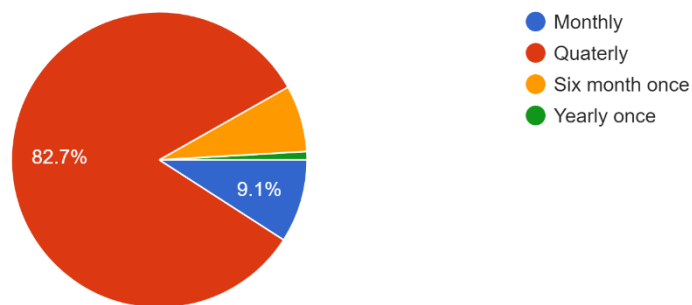
Table 4.1.13: Inventory counted and reconciled of the respondents

Particulars	No. of Respondents	Percentage of Respondents
Monthly	10	9.1
Quarterly	91	82.7
Six months once	8	7.3
Yearly once	1	0.9
Total	110	100

Chart 4.1.13: Inventory counted and reconciled of the respondents

How often is inventory counted and reconciled?

110 responses



INTERPRETATION:

From the above table it is interpreted that the number of respondents 9.1% of respondents are respond monthly, 82.7% of the respondent are respond quarterly, 7.3% of the respondents are respond six months once, 0.9% of the respondents are respond yearly once.

INFERENCE:

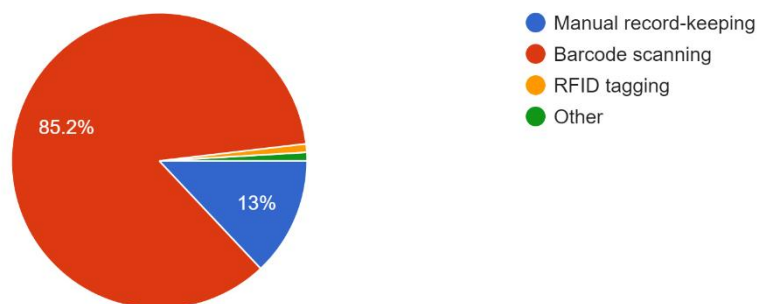
Majority (82.7%) of the respondents are respond inventory counted and reconciles quarterly.

Table 4.1.14: Track inventory levels in your warehouse of the respondents.

Particulars	No. of Respondents	Percentage of Respondents
Manual record keeping	14	13
Barcode scanning	92	85.2
RFID tagging	1	0.9
Other	1	0.9
Total	110	100

Chart 4.1.14: Track inventory levels in your warehouse of the respondents.

How do you track inventory levels in your warehouse?
108 responses



INTERPRETATION:

From the above table it is interpreted that the number of respondents 13% of the respondents are respond manual record-keeping,85.2% of the respondents are respond Barcode scanning,0.9% of the respondents are respond RFID tagging,0.9 of the respondents are respond others.

INFERENCE:

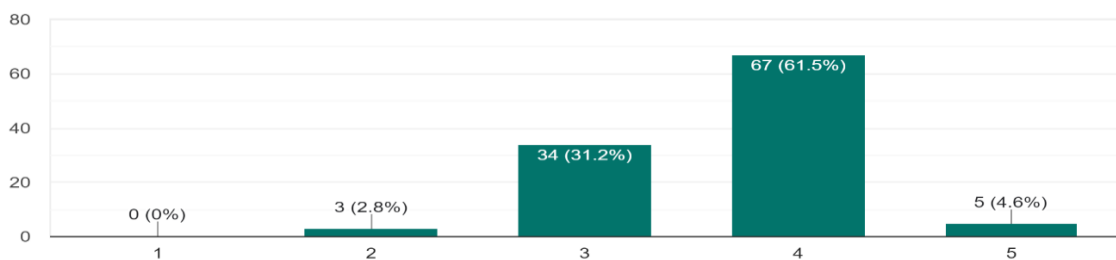
Majority (85.2%) of the respondents are track inventory in Barcode scanning.

Table 4.1.15: Rate the speed and accuracy of order fulfilment of the respondents.

Particulars	No. of Respondents	Percentage of Respondents
1	0	0
2	3	2.8
3	34	31.2
4	67	61.5
5	5	4.6
Total	109	100

Chart 4.1.15: Rate the speed and accuracy of order fulfilment of the respondents.

How would you rate the speed and accuracy of order fulfillment?
109 responses



INTERPRETATION:

From the above table it is interpreted that the number of respondents 2.8% of the respondents are rated 2, 31.2% of the respondent are rated 3, 61.5% of the respondents are rated 4, and 4.6% of the respondents are rated 5.

INFERENCE:

Majority (61.5%) of the respondents are rated speed and accuracy of order fulfilment as 4.

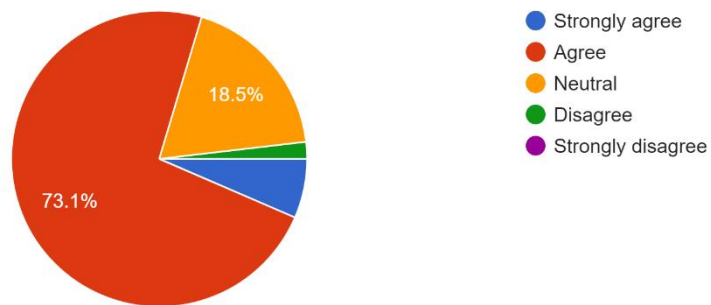
Table 4.1.16: Seasonal influence in order pattern of the respondents.

Particulars	No. of Respondents	Percentage of Respondents
Strongly agree	7	6.5
Agree	79	73.1
Neutral	20	18.5
Disagree	2	1.9
Strongly Disagree	0	0
Total	108	100

Chart 4.1.16: Seasonal influence in order pattern of the respondents.

Are you agree with any seasonal influence in order pattern?

108 responses



INTERPRETATION:

From the above table it is interpreted that the number of respondents 6.5% of the respondents are strongly agree, 73.1% of the respondents are agree, 18.5% of the respondent are neutral, 1.9 of the respondents are disagree.

INFERENCE:

Majority (73.1%) of the respondents are agree the seasonal influence in order pattern

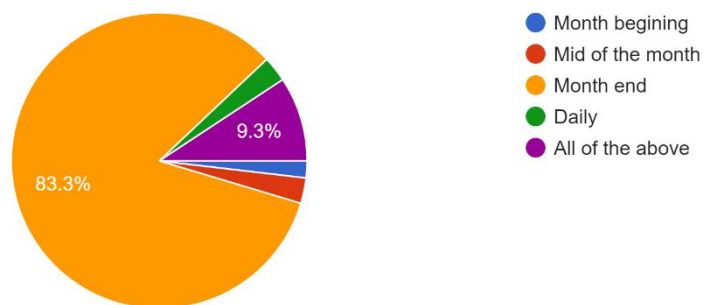
Table 4.1.17: Shipment get critical in a month of the respondents.

Particulars	No. of Respondents	Percentage of Respondent
Month beginning	2	1.9
Mid of the month	3	2.8
Month end	90	83.3
Daily	3	2.8
All of the above	10	9.3
Total	108	100

Chart 4.1.17: Shipment get critical in a month of the respondents.

How often the shipment get critical in a month?

108 responses



INTERPRETATION:

From the above table it is interpreted that the number of respondents 1.9% of the respondents are respond month beginning, 2.8% of the respondents are respond mid of the month, 83.3% of the respondents are respond month end, 2.8% of the respondents are respond, 9.3% of the respondents are respond all of the above.

INFERENCE:

Majority (83.3%) of the respondents are month end is critical to shipment

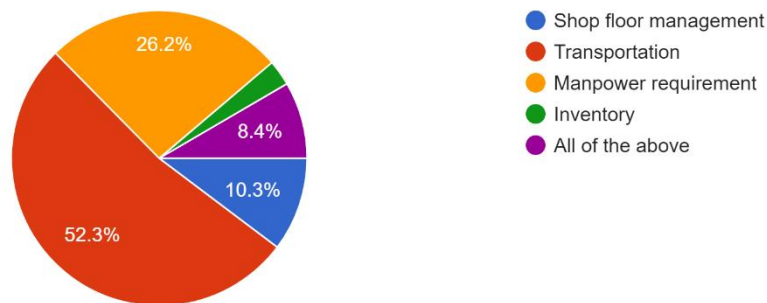
Table 4.1.18: Major problem facing during dispatching of the respondents.

Particular	No. of Respondents	Percentage of Respondent
Shop floor management	11	10.3
Transportation	56	52.3
Manpower requirement	28	26.2
Inventory	3	2.8
All of the above	9	8.4
Total	107	100

Chart 4.1.18: Major problem facing during dispatching of respondents

What are the major problem facing during dispatching?

107 responses



INTERPRETATION:

From the above table it is interpreted that the number of respondents 10.3% of the respondents are respond shopfloor management, 52.3% of the respondents are respond transportation, 26.2% of the respondents are respond manpower requirement, 2.8% of the respondents are respond inventory, 8.4% of the respondents are respond all of the above.

INFERENCE:

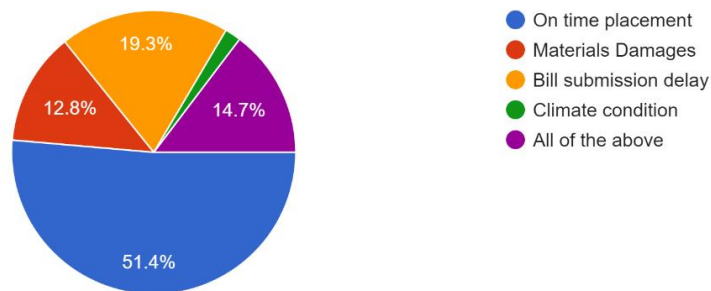
Majority (52.3%) of the respondents are respond transportation

Table 4.1.19: Major issues facing in transportation of respondents.

Particulars	No. of Respondents	Percentage of Respondents
On time placement	56	51.4
Materials Damages	14	12.8
Bill submission delay	21	19.3
Climate condition	2	1.8
All the above	16	14.7
Total	109	100

Chart 4.1.19: Major issues facing in transportation of the respondents.

What are the major issues facing in transportation?
109 responses



INTERPRETATION:

From the above table it is interpreted that the number of respondents 51.4% of the respondents are respond on time placement,12.8% of the respondents are respond materials damages,19.3% of the respondents are respond bill submission delay,1.8% of the respondents are respond climate condition,14.7% of the respondents are respond all the above.

INFERENCE:

Majority (51.4%) of the respondents are respond on time placement are major issues facing in transportation.

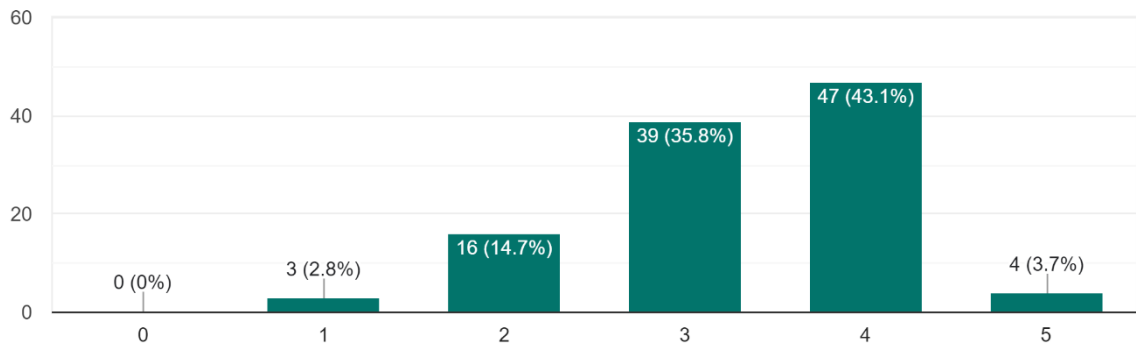
Table 4.1.20: Performance of transport service provider of the respondents

Particulars	No. of Respondents	Percentage of Respondents
0	0	0
1	3	2.8
2	16	14.7
3	39	35.8
4	47	43.1
5	4	3.7
Total	109	100

Chart 4.1.20: Performance of transport service provider respondents

Rate the performance of transport service provider?

109 responses



INTERPRETATION:

From the above table it is interpreted that the number of respondents 2.8% of the respondents are rate 1, 14.7% of the respondents are rate 2, 35.8% of the respondents are rate 3, 43.1% of the respondents are rate 4, 3.7% of the respondents are rate 5.

INFERENCE:

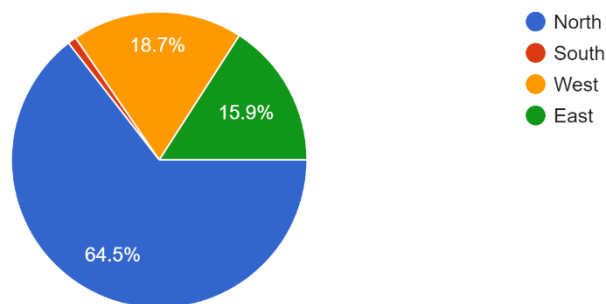
Majority (43.1%) of the respondents are rate 4 to performance of the transport service provider.

Table 4.1.21 Geographical location have been critical to delivering the job of the respondents

Particulars	No. of Respondents	Percentage of Respondents
North	69	64.5
South	1	0.9
West	20	18.7
East	17	15.9
Total	107	100

Chart 4.1.21: Geographical location have been critical to delivering the job of the respondents.

Which geographical location have been critical to delivering the job?
107 responses



INTERPRETATION:

From the above table it is interpreted that the number of respondents 64.5% of the respondents are respond north,0.9% of the respondents are respond south,18.7% of the respondents are respond west,15.9% of the respondents are respond east location.

INFERENCE:

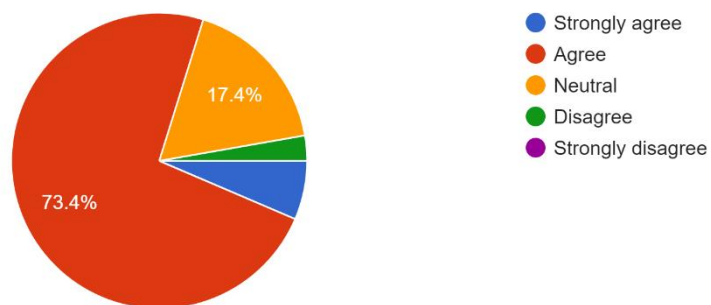
Majority (64.5%) of the respondents are north location is the critical to delivery the jobs

Table 4.1.22: Express shipment of the respondents

Particulars	No. of Respondents	Percentage of Respondents
Strongly agree	7	6.4
Agree	80	73.4
Neutral	19	17.4
Disagree	3	2.8
Strongly disagree	0	0
Total	109	100

Chart 4.1.22: Express shipment of the respondents

Are you agree with express shipment?
109 responses



INTERPRETATION:

From the above table it is interpreted that the number of respondents 6.4% of the respondents are strongly agree, 73.4% of the respondents are agree, 17.4% of the respondents are neutral, 2.8% of the respondents are disagree.

INFERENCE:

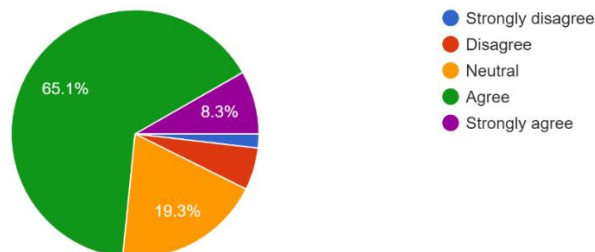
Majority (73.4%) of the respondents are agree with express shipment.

Table 4.1.23: Company offer adequate opportunities and carrier development of the respondents.

Particulars	No. of Respondents	Percentage of Respondents
Strongly disagree	2	1.8
Disagree	6	5.5
Neutral	21	19.3
Agree	71	65.1
Strongly agree	9	8.3
Total	109	100

Chart 4.1.23: Company offer adequate opportunities and carrier development of the respondents

Are you agree with our company offer adequate opportunities and carrier development?
109 responses



INTERPRETATION:

From the above table it is interpreted that the number of respondents 1.8% of the respondents are strongly disagree, 5.5% of the respondents are disagree, 19.3% of the respondents are neutral, 65.1% of the respondents are agree, 8.3% of the respondents are strongly agree.

INFERENCE:

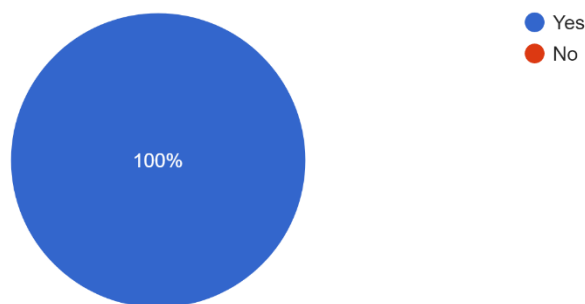
Majority (65.1%) of the respondents are agree with our company offer adequate opportunities and carrier development.

Table 4.1.24: company provide safety training to employees of the respondents.

Particulars	No. of Respondents	Percentage of Respondents
Yes	107	100
No	0	0
Total	107	100

Chart 4.1.24: company provide safety training to employee's respondents

Does our company provide safety training to employees?
107 responses



INTERPRETATION:

From the above table it is interpreted that the number of respondents 100% of the respondents are respond yes.

INFERENCE:

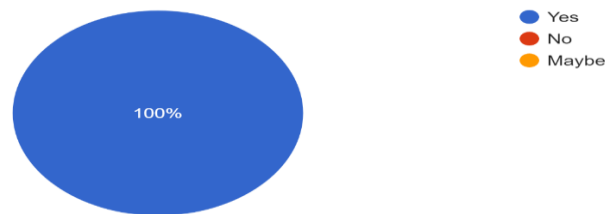
Majority (100%) of the respondents are respond company provide safety training to employees.

Table 4.1.25: Ensure your company providing PPE of the respondents.

Particulars	No. of Respondents	Percentage of Respondents
Yes	109	100
No	0	0
Maybe	0	0
Total	109	100

Chart 4.1.25: ensure your company providing PPE of the respondents.

Do you ensure your company providing PPE (Personal protective equipment) kit to employee (Eg.: safety shoes, hand gloves, helmet)
109 responses



INTERPRETATION:

From the above table it is interpreted that the number of respondents 100% are ensure your company providing PPE (Personal protective equipment) kit to employee (Eg: safety shoes, hand gloves, helmet)

INFERENCE:

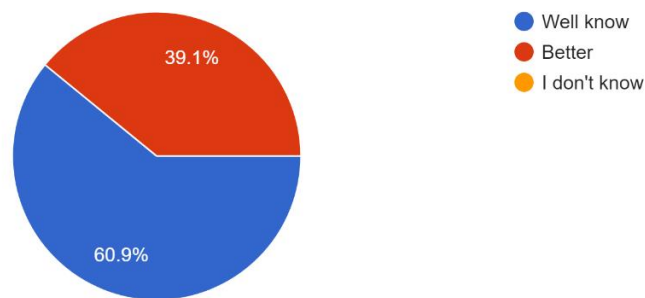
Majority (100%) of the respondents are ensure your company providing PPE (Personal protective equipment) kit to employee (Eg: safety shoes, hand gloves, helmet).

Table 4.1.26: Clear about health and safety regulations at work place respondents.

Particulars	No. of Respondents	Percentage of Respondents
Well know	67	60.9
Better	43	39.1
I don't know	0	0
Total	110	100

Chart 4.1.26: Clear about health and safety regulations at work place of the respondents

Do you clear about health and safety regulations at work place?
110 responses



INTERPRETATION:

From the above table it is interpreted that the number of respondents 60.9% of the respondents are well known, 39.1% of the respondents are respond better.

INFERENCE:

Majority (60.9%) of the respondents are well known clear about health and safety regulations at work place.

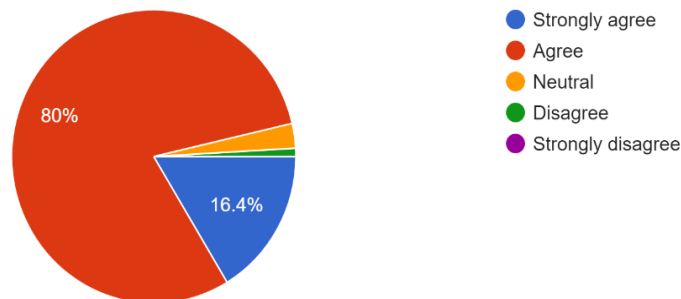
Table 4.1.27: Materials is placed under emergency equipment of the respondents.

Particulars	No. of Respondents	Percentage of Respondents
Strongly agree	18	16.4
Agree	88	80
Neutral	3	2.7
Disagree	1	0.9
Strongly disagree	0	0
Total	110	100

Chart 4.1.27: No Materials is placed under emergency equipment of the respondents.

Are you agree with no materials is placed under emergency equipment (Example: Fire Extinguisher, First Aid Kit)

110 responses



INTERPRETATION:

From the above table it is interpreted that the number of respondents 16.4% of the respondents are strongly agree, 80% of the respondents are agree, 2.7% of the respondents are respondents neutral, 0.9% of the respondents are disagree.

INFERENCE:

Majority (80%) of the respondents are agree with No Materials is placed under emergency equipment (Example: Fire Extinguisher, First Aid Kit).

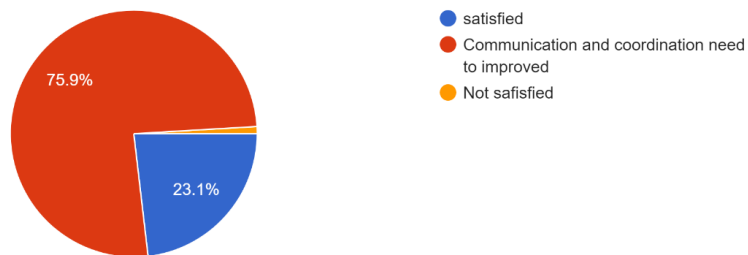
Table 4.1.28: satisfied with the communication and coordination between warehouse operations and other departments of the respondents.

Particulars	No. of Respondents	Percentage of Respondents
Satisfied	25	23.1
Communication and coordination need to improve	82	75.9
Not satisfied	1	0.9
Total	108	100

Chart 4.1.28: satisfied with the communication and coordination between warehouse operations and other departments of the respondents.

How satisfied are you with the communication and coordination between warehouse operations and other departments?

108 responses



INTERPRETATION:

From the above table it is interpreted that the number of respondents 23.1% of the respondents are satisfise,75.9% of the respondents are respond communication and coordination need to improved,0.9% of the respondents are not satisfied.

INFERENCE:

Majority (75.9%) of the respondents are respond communication and coordination need to improved.

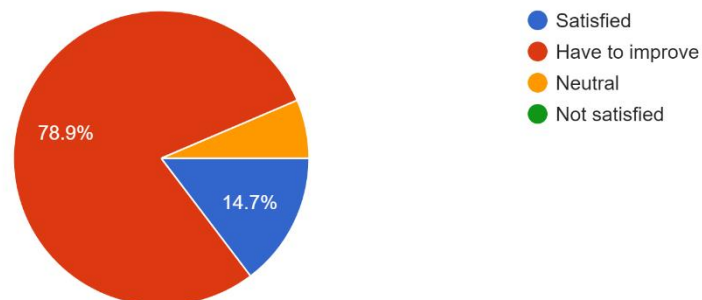
Table 4.1.29: Overall effectiveness of your warehouse operations of the respondents.

Particulars	No. of Respondents	Percentage of Respondents
Satisfied	16	14.7
Have to improve	86	78.9
Neutral	7	6.4
Not satisfied	0	0
Total	109	100

Chart 4.1.29: Overall effectiveness of your warehouse operations of the respondents.

How do you rate the overall effectiveness of your warehouse operations?

109 responses



INTERPRETATION:

From the above table it is interpreted that the number of respondents 14.7% of the respondents are satisfied, 78.9% of the respondents are respond have to improve, 6.4% of the respondents are respond neutral.

INFERENCE:

Majority (78.9%) of the respondents are respond overall effectiveness of your warehouse operations have to improve

4.2. STATISTICAL ANALYSIS:

Hypothesis: 1

H0(Null hypothesis): There is no significant difference between age and cooperation and coordination between warehouse management with another department.

H1(Alternate hypothesis): There is significant difference between Age and cooperation and coordination between warehouse management with another department.

Chi Square Test:

Cross Table

Age* How satisfied are you with the communication and coordination between warehouse operations and other departments? Crosstabulation

Count					
How satisfied are you with the communication and coordination between warehouse operations and other departments?					
		Communication and coordination need to improved	Not Satisfied	Satisfied	Total
Age	1	0	0	3	3
	2	25	0	9	34
	3	28	0	4	32
	4	19	0	8	27
	5	11	1	2	14
Total		83	1	26	110

Crosstabs						
Case Processing Summary						
	Valid		Cases Missing		Total	
Age* How satisfied are you with the communication and coordination between warehouse operations and other departments?	N	Precent	N	Percent	N	Percent
	110	100.0%	0	0.0%	110	100.0%

Chi- Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Squares	19.987*	8	.010
Likelihood Ratio	16.562	8	.035
N of Valid Cases	110		

a. 8 cells (53.3%) have expected count less than 5. The minimum expected count is .03.

Inference:

Since p value is (.010) we reject null hypothesis and accepted alternative hypothesis there is difference between in age and cooperation and coordination between warehouse management with another department.

4.3 Correlation

H0(Null hypothesis): There is no significant difference between Major problem occurred in inventory area and Major problem facing during dispatching

H1(Alternate hypothesis): There is significant difference between Major problem occurred in inventory area and Major problem facing during dispatching

		What are the major problem occurred in inventory area?	What are the major problem facing during dispatching?
What are the major problem occurred in inventory area?	Pearson Correlation	1	.067
	Sig. (2-tailed)		.487
	N	110	110
What are the major problem facing during dispatching?	Pearson Correlation	.067	1
	Sig. (2-tailed)	.487	
	N	110	110

Inference:

Since p value is (.067) we reject null hypothesis and accepted alternative hypothesis there is difference Major problem occurred in inventory area and Major problem facing during dispatch

CHAPTER- V
FINDINGS, SUGGESTIONS AND CONCLUSION

5.1 FINDINGS OF THE STUDY

- Majority (100%) of the respondents are Male.
- Majority (32.7%) of the respondents from dispatch department.
- Majority (41.8%) of the respondents are 0-3 years experienced
- Majority (53.6%) of the respondents are 0-3 defects are inspected in day-to-day work.
- Majority (39.1%) of the respondents are component missing is the difficult task faced in quality management.
- Majority (41.3%) of the respondents are electrification is major defects in regular manner
- Majority (59.1%) of the respondents are respond policy/values are frequently communicated in innovative ways
- Majority (63.3%) agree this statement.
- Majority (58.1%) of the responds managing warehouse space is the problem occurred in inventory area.
- Majority (40%) of the responds are better to improve the present inventory control system.
- Majority (69.1%) of the responds are followed FIFO techniques
- Majority (82.7%) of the respondents are respond inventory counted and reconciles quarterly.
- Majority (85.2%) of the respondents are track inventory in Barcode scanning.
- Majority (61.5%) of the respondents are rated speed and accuracy of order fulfilment as 4
- Majority (73.1%) of the respondents are agree the seasonal influence in order pattern
- Majority (83.3%) of the respondents are month end is critical to shipment
- Majority (52.3%) of the respondents are respond transportation
- Majority (51.4%) of the respondents are respond on time placement are major issues facing in transportation.
- Majority (43.1%) of the respondents are rate 4 to performance of the transport service provider.

- Majority (64.5%) of the respondents are respond north are critical to delivering the jobs
- Majority (73.4%) of the respondents are agree with express shipment
- Majority (65.1%) of the respondents are agree with our company offer adequate opportunities and carrier development
- Majority (100%) of the respondents are respond company provide safety training to employees.
- Majority (100%) of the respondents are ensure your company providing PPE (Personal protective equipment) kit to employee (Eg: safety shoes, hand glows, helmet)
- Majority (60.9%) of the respondents are well known clear about health and safety regulations at work place.
- Majority (80%) of the respondents are agree with No Materials is placed under emergency equipment (Example: Fire Extinguisher, First Aid Kit)
- Majority (75.9%) of the respondents are respond communication and coordination need to improved
- Majority (78.9%) of the respondents are respond overall effectiveness of your warehouse operations have to improve.

5.2. SUGESSTIONS:

- Need to improve operational efficiency and storage.
- Maintain location area properly on regular manner to avoid materials searching it will reduce timing and improve the operational speed
Improve groping job on advance for available vehicles.
- Reduce the storage and manpower issues it will increase the output process and continuous improvement
- Regular maintenance: Keep equipment and machinery well-maintained to reduce downtime and prevent breakdowns.
- Utilize Lean principles: Adopt Lean principles to identify and eliminate waste, streamline processes, and increase efficiency.
- Implement a continuous improvements program: Regularly review your warehouse management processes, identify areas for improvements, and implement changes to improve efficiency, and productivity.

- Improve communication and coordination with other departments is key to effective warehouse management.
- Monitor the warehouse metrics: Tracking key performance indicators (KPIs) such as inventory accuracy, order fulfilment rate, and cycle time can help to identify areas for improvement and measures progress over time.
- Optimizing space utilization, you can improve product flow, reduce travel time, and increase storage capacity.

5.3. LIMITATION OF THE STUDY:

The numbers of respondent's are restricted to 110 only.

- In order to achieve the objectives of the study and answer the questions posed, the study had to overcome a series of difficulties and obstacles related to the subject of the study, therefore the respondents are collected from the machine operators of the company.
- In addition, believe that any information related to their company inside is confidential and should not be shared with others, the dates collected for the study is fully on primary data given by the respondents.
- In the case of primary data, there is a chance of personal bias. So, the accuracy may not be true.

5.4. CONCLUSION:

It is hoped that this project will provide the management inside the premises of KONE DISTRIBUTION CENTER-ORAGADAM within the suitable tools and techniques of effectiveness of warehouse management, such as, quality, inventory, dispatching, safety.

The effectiveness of warehouse management can have a significant impact on a company's overall success. A well-managed warehouse can improve inventory accuracy, order fulfilment, increase efficiency, and enhance customer satisfaction. Effective warehouse management involves implementing best practices in receiving, put-away, picking, dispatching. It also requires having the right technology, equipment, and workforce in place to support the operation. To conclude, effective warehouse management is critical for companies to meet their supply chain goals and stay competitive in today's fast-paced business environment. It can help to improve customer satisfaction, and streamline their operations, ultimately leading to increased operational growth towards delivery the jobs.

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ANNEXURE
QUESTIONNAIRE:

DEMOGRAPHY:

1. Gender
 - a) Male
 - b) Female

2. Age
 - a) 20-25
 - b) 25-30
 - c) 30-35
 - d) 35-40
 - e) Above 40

3. Which department you belong to?
 - a) Quality
 - b) Stores
 - c) Dispatch
 - d) Safety
 - e) Others

4. How long have been working in the company?
 - a) 0-3 years
 - b) 3-6 years
 - c) 6-12 years
 - d) Above 12 years

5. How many defects have you inspected in day-to-day work?
 - a) 0-3
 - b) 3-5
 - c) 5-10
 - d) Above 10

6. What are all the major difficulty task faced in quality management?
 - a) Component missing
 - b) Hu stickers mismatching
 - c) Part code not available
 - d) NA

7. What category of materials have major defects in a regular manner?
 - a) Electrification
 - b) Door
 - c) Car
 - d) NA

8. In my company the corporate vision/policy on quality ...
- a) It not clearly communicated and visible
 - b) Its displayed with poster in some departments
 - c) It clearly communicated through poster in each department
 - d) It clearly understood by each employee
 - e) It is frequently communicated in innovative ways
9. Do you agree with storage space can improve in our company?
- a) Strongly agree
 - b) Agree
 - c) Neutral
 - d) Disagree
 - e) Strongly disagree
10. What is the major problem occurred in inventory area?
- a) Location identification
 - b) Improper flow of goods
 - c) Improper co-operation of employees
 - d) Space utilization
11. What are your views about the present inventory control system?
- a) Excellent
 - b) Good
 - c) Better to improve
 - d) Bad
12. Do you recalculate safety stock levels on a regular basis to ensure they are up to date?
- a) Daily
 - b) Weekly
 - c) Monthly
13. Are you able to break down your operating inventory into the three major categories when reporting levels—safety, and excess or obsolete stock?
- a) Strongly agree
 - b) Agree
 - c) Neutral
 - d) Disagree
 - e) Strongly agree
14. Which inventory control techniques followed in our company?
- a) FIFO
 - b) LIFO
 - c) Weighted average
 - d) Simple average

15. Do you agree with any seasonal influence in order pattern?
- a) Strongly agree
 - b) Agree
 - c) Neutral
 - d) Disagree
 - e) Strongly disagree
16. How often the shipment gets critical in a month?
- a) Month beginning
 - b) Mid of the month
 - c) Month end
 - d) Daily
17. What is the major problem facing during dispatching?
- a) Shop floor management
 - b) Transport
 - c) Man power requirement
 - d) Inventory
 - e) All of the above
18. What are the major issues facing in transportation?
- a) On time place
 - b) Materials damages
 - c) Bill submission delay
 - d) Climate condition
 - e) All the ab
19. Which geographical location have been critical to delivering the jobs?
- a) North
 - b) South
 - c) West
 - d) East
20. Do you agree with express shipment?
- a) Strongly agree
 - b) Agree
 - c) Neutral
 - d) Disagree
 - e) Strongly disagree
21. What rating would you give for your transport contractor?
- a) 1
 - b) 2
 - c) 3
 - d) 4
 - e) 5

22. What is your present view about working process followed in our company?
- a) Excellent
 - b) Better to modified
 - c) Bad
23. Do you agree with our company offer adequate opportunities career development?
- a) Strongly agree
 - b) Agree
 - c) Neutral
 - d) Disagree
 - e) Strongly disagree
24. Does our company provide safety training to employees?
- a) Yes
 - b) No
25. Do you ensure your company providing PPE (Personal protective equipment) kit to employee (eg: safety shoes, hand gloves, helmet)
- a) Yes
 - b) No
26. Do you clear about health and safety regulations at work place?
- a) well know
 - b) Better
 - c) I don't know
27. Do you agree with No item is placed under emergency equipment (example fire extinguisher, first aid kit)
- a) Strongly agree
 - b) Agree
 - c) Neutral
 - d) Disagree
 - e) Strongly disagree
28. Describe your suggestion to improve our working process improvement?