



## CARGO HANDLING AND PRACTICING CORRECT SOP AT SOP-ORIENTED WAREHOUSE, AND ITS IMPACT ON BUSINESS

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### ABSTRACT

Cargo Handling Refers to the Overall Transportation Activities in Standard Operating Procedure (SOP) oriented warehouses and Logistics Centers. SOP guidelines may include specifications regarding the opening and closing time of the SOP oriented warehouse, routine security check, the movement of goods to and from the SOP oriented warehouse, inventory management, proper handling of goods, and timely shipment along with staff hygiene protocols. The purpose of a SOP oriented warehouse operations management is to help ensure that goods and materials move through SOP oriented warehouses in the most efficient and cost-effective way. Through this study, the researcher tries to identify the key areas to be enhanced to improve the Standard Operating Procedure (SOP) oriented warehouse operations of logistics companies by engaging suppliers of logistics companies in evaluating it. This will help the management of logistics companies to improve the efficiency of SOP oriented warehouse operations management and increase their business efficiency. Primary objective is to study the cargo handling and practicing correct SOP at SOP oriented warehouse and its impact at logistics companies. Secondary objectives are to study the overall SOP practice at SOP oriented warehouse in logistics companies and to find out the problems which the SOP oriented warehouse is facing in its inbound & outbound SOP process. A sampling method has been used in the research work. Multiple choice questions have been chosen to collect the responses from 120 peoples. The data collected has been analyzed through various statistical tools like Karl Pearson's Correlation, Chi-square test and One-way Anova test. Numerous new findings has been derived from this research has helped to provide few suggestions to improve the cargo handling and practicing correct SOP at SOP oriented warehouse and its impact of logistics business.

**Keywords:** SOP, Transportation, warehouse, cargo handling

### INTRODUCTION

Port is a place where facilities are provided for the ships and other Sea going Crafts to take shelter, the port has facilities for unloading and loading, for fuelling, and for taking fresh waters and such facilities as may be required by them. Various types of Export & Import cargos are handled at each Port for International Trade as the Port and or to the country. The Import Cargos are the various types of Export & Import well as Coastal Trade. The Export Cargos are those cargos which are loaded in a ship and go out of cargos are handled at each Port for International Trade as well as Coastal Trade. The Import Cargos are those cargos which are loaded incoming cargo from outside the country and are generally unloaded at the Port. For the handling of a wide range of cargoes, transportation to and from ports and/or maritime operations. Equipment required to support services to be provided to port users. To understand the details of the management system, it is necessary to know the types of cargo handled by the port, the equipment required to ensure the operation of the port, and the entry and departure of ships. at the port. Ships at the port boundary. Cargo is goods or products transported by ship, airplane, train, van or truck, usually for commercial gain. Today, containers are used for most intermodal long-distance freight transport.

## DEFINING 3 KEY PARTS OF WAREHOUSING LOGISTICS

Warehousing logistics is at the core of any business that sells physical goods. A few of the most important elements of warehousing include SOP oriented warehouse management, warehousing services, operations, and SOP oriented warehouse management systems.

### 1. SOP ORIENTED WAREHOUSE MANAGEMENT

SOP oriented warehouse management is the strategic day-to-day running of operations in a SOP oriented warehouse to promote, improve, and ensure operational excellence. Managing a SOP oriented warehouse means overseeing all staff, training, inventory, equipment, safety and security, relationships with shipping carriers, and other moving pieces. Responsibilities include:

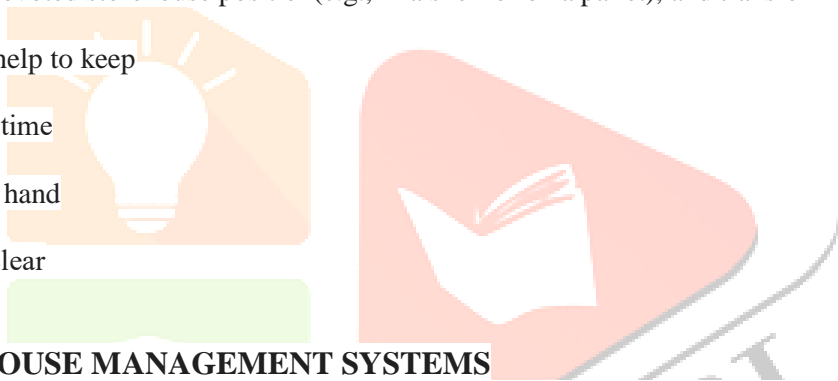
- Forecasting and managing projected volume and labor
- Ensuring the proper safety gear is used and best safety practices are followed at all times
- Obtaining the proper licenses and certifications for anyone operating equipment
- Maintaining compliance and requirements for regulatory agencies
- Continuously planning and managing operations as the business grows and becomes more complex
- Keeping goods secure and accessible and performing SOP oriented warehouse audits as needed
- Providing clear instructions on how to receive, unpack, retrieve, pack, and ship inventory
- Setting up bins and other storage spots in optimal places to minimize the effort required to move between destinations
- Recording all inbound and outbound shipments and collecting the proper documentation

### 2. SOP ORIENTED WAREHOUSE OPERATIONS

Warehousing operations refers to the processes that take place in a SOP acquainted warehouse revolving around the movement of goods and tracking force. Principles of warehousing include functions similar as entering force, also placing each SKU into a separate devoted storehouse position (e.g., in a shelf or on a pallet), and transferring product to its coming destination.

Effective warehousing operations help to keep

- Costs low
- Inventory entered and packed on time
- Staff productive
- Sufficient amounts of product on hand
- Space below capacity
- storehouse optimized and aisles clear
- outfit used effectively
- guests happy



### 3. SOP ORIENTED WAREHOUSE MANAGEMENT SYSTEMS

A SOP ORIENTED WAREHOUSE operation system (WMS) is a type of software that provides the tools necessary to manage SOP acquainted warehouse operations and force movement to save time and exclude homemade processes. These types of warehousing results give you unknown visibility and real-time sapience into every action that's passing in the SOP acquainted warehouse. A good SOP acquainted warehouse operation system will indeed help induce electronic selecting lists grounded on orders that have force stored near to one another to drop inefficiencies.

The SOP cover all the processes for SOP acquainted warehouse and force operation up to the point where the force particulars are released from the SOP acquainted warehouse for distribution. significance of SOP acquainted warehouse The development and use of SOP are an integral part of a successful quality system. It provides information to perform a job duly and constantly to achieve pre-determined specifications and a quality end- result.

- Saves Time Standard operating procedures, as the name countries, are a number of guidelines and procedures to be followed for the smooth and standardized functioning of the SOP acquainted warehouse. When certain guidelines have been stated for the labor force to follow, it ensures timely completion of tasks with minimum diversions. SOP also give a resource that can dock the literacy wind associated with performing a new part and gathering information related to a new job.
- Safety measures In times like the present, with the rush of COVID-19, e-commerce is at an each-time high, making it extremely important for bribe acquainted storages to follow health monitoring and exemplary protocols seriously. SOP give workers with all the safety, health, environmental and functional information necessary to perform a job duly and safely.
- effectiveness and thickness With a standard operating procedure in place for working on specific tasks, SOP acquainted warehouse processes follow outlined way for completion. They support workers with the information necessary to perform their jobs and helps guarantee thickness in the quality of performance.
- Responsibility When there are a set of easily specified rules and procedures to be followed by different workers, a divagation in the process becomes easier to discover. bribes empower the employer to know where the divagation took place and who's responsible for the same.
- Inflexibility Opposed to the general misconception that SOPs produce severity in an association, bribes allow associations to save time and trouble by furnishing them with certain routine procedures that need to be followed and allows them to invest their time and trouble in creating innovative results in other areas.

## 1.2 INDUSTRY PROFILE

Logistics is regarded as the backbone of the economy, furnishing effective and cost effective flow of goods on which other marketable sectors depend. Logistic industry in India is evolving fleetly, it's the interplay of infrastructure, technology, and new types of service providers, which defines whether the logistic industry is suitable to help its guests reduce their costs in logistic sector and give effective services.

Despite of the weak profitable sentiments, the logistics assiduity continues to witness growth due to the growth in retail, e-commerce, and manufacturing sectors. The Global Logistics sector was anticipated to grow 10- 15 in the period 2021- 22. Logistics assiduity is anticipated to reach over USD 2 billion by 2025. With a pledge of growth and advancements, the service acquainted logistics industry is ready to expand beyond the horizons in the ultimate half of this decade.

### Recent scenario

The recent Indian logistics sector comprises of inbound and outbound parts of the manufacturing and service supply chains. Of late, The part of managing this structure, to effectively compete has been slightly under- emphasized. Inadequate logistics infrastructure has an effect of creating backups in the growth of an economy. The logistics operation authority has the capability of overcoming the disadvantages of the infrastructure in the short run while furnishing cutting edge competitiveness in the long term. There live several challenges and openings for logistics sector in the Indian economy.

### Challenges faced by the recent logistics assiduity in India.

The most essential challenge faced by the industry moment is insufficient integration of transport networks, information technology and warehousing & distribution facilities. Regulations live at several different categories, is assessed by public, indigenous and original authorities. still, the regulations differ from city to city, hindering the creation of public networks. Trained Manpower is essential both for the third party logistics sector as well as the manufacturing and merchandising sectors, which is veritably weak at a practical position, i.e., IT, driving and SOP oriented warehouse as well as at a advanced strategic position. The disorganized nature of the logistics sector in India, its perception as a manpower-heavy industry and lack of acceptable training institutions has led to a shortfall in professed operation and customer service labor force.

### NEED FOR THE STUDY

Technology has driven material and weight running to a high position. numerous lifting outfit are used in handling weight now a days made easier running of weight. The development and use of SOPs are an important part for a successful system. It provides information to perform a job duly and constantly to achieve pre-determined specifications and a quality end- result. Warehousing allows for timely delivery and optimized distribution, leading to increased labor productivity and lesser client satisfaction. It also helps to reduce the errors and damage in the order fulfillment process. And also it prevents your goods from getting lost or stolen during the handling. The purpose of a SOP oriented warehouse operations management is to help insure that goods and materials move through SOP oriented warehouses in the most effective and cost-effective way. A WMS handles numerous functions that enable these movements, including inventory tracking, picking, receiving.

Through this study, the experimenter tries to identify the crucial areas to be enhanced to improve the cargo handling and SOP practice at SOP oriented warehouse operations of logistics companies by engaging suppliers of logistics companies in evaluating it. This will help the operation of logistics companies to improve the effectiveness of cargo handling and rehearsing correct SOP at SOP oriented warehouse and its impact operation and increase their business efficiency.

## REVIEW OF LITERATURE

### David Sinriech

The effectiveness of a cargo handling system depends on several factors, among them a well- thought- out flow- path design. The flow path has a significant effect on the travel time, the operating charges, and the installation costs of the system. also, the flow- path configuration has a significant impact on the complexity of the system's control software. The literature review presented in this paper describes several approaches to the design of material flow networks, including conventional type systems and more recent developments like the single- hoop, tandem configuration.

### J.TALLENT 2010 Cargo handling and packing field.

Cargo Handling/ Packaging Field Research Assignment Packaging and handling are important to businesses. Packaging is used to promote a product, protects he product and consumer, and informs the prospective consumer and handlers throughout the supply chain. In addition, with backing from technology advancements, a well designed and constructed package aids in product handling throughout the supply chain.

### S. HARIT 1995 FRAMEWORK FOR HANDLING SYSTEMS

Automated cargo handling systems have come an integral part of handling and storehouse operations in numerous manufacturing and logistics sectors. The purported benefits of cost effectiveness and effective operation have redounded in wide acceptance of this equipment in industry. A tremendous amount of exploration during the last decade has concentrated on studying the design and control problems associated with automated cargo handling systems. The

research focus has been on problems of "manageable" size and complexity, while a large number of operations live in which simulation is the only system for diving the design and control issues.

## DAVID J CLOSS

Logistical cargo handling occurs throughout the supply chain. A fundamental difference exists in the handling of the bulk materials and the cartons. The handling systems can be classified as simply mechanized, semi-automated, automated, and information- directed.

## ALEKSANDRA MARCIKIC; BORIS RADOVANOV( 2019)

In the Journal " Perspectives Of Innovations, Economics And Business " says- " In this paper SOP oriented warehouse management is analyzed as an organic part of the supply chain managing process. In today's competitive economic environment traditional SOP oriented warehouse policies should be improved. Simulation models enable a priori managing and analyzing variety of possible results and implication of selected SOP oriented warehouse policies. The model presented in this paper uses the Monte Carlo simulation system and variables taken as arbitrary, in order to depict a adjustment and integration of dynamic quantitative analysis and theoretical, qualitative concepts of SOP oriented warehouse management ".

## RESEARCH METHODOLOGY

Fundamental to the success of any formal marketing research project is a sound research design. A good research design has the characteristics of problem definition, specific methods of data collection and analysis, time required for research project and estimate of expenses to be incurred. The function of a research design is to ensure that the require data which is collected should be accurately and economically. A research design is purely and simply the framework or plan for an analysis of data. It is a blue print that is followed in completing a study.

### RESEARCH DESIGN

Descriptive research design is also called explanatory design. It shows the researcher work on that project or a design.

### DATA SOURCES

After identifying and defining the research problem and determining specific information required to solve the problem, the researcher's task is to look the type and sources of data which may yield the desired results. Basically there are two types of data sources are there through which the data is collected.

Data sources may be classified as

1. Primary data
2. Secondary data

### PRIMARY DATA

Primary data is the original data collected by the researcher. It is collected for the first time through field survey . These are those that are gathered specifically, for the problem at hand. The various sources for collecting primary data are questionnaire, observations, interviews etc. The primary source used for the study is questionnaire.

### SECONDARY DATA

Secondary data is the information which is already available in published or unpublished form. When the needed information is collected from the census of population available in a library means then it is a secondary data. It is also used for collecting historical data. The various sources of secondary data are books, periodicals, journals, directories, magazines, statistical data sources etc. The secondary source used for this study is company profile, scope, need, review of literature.

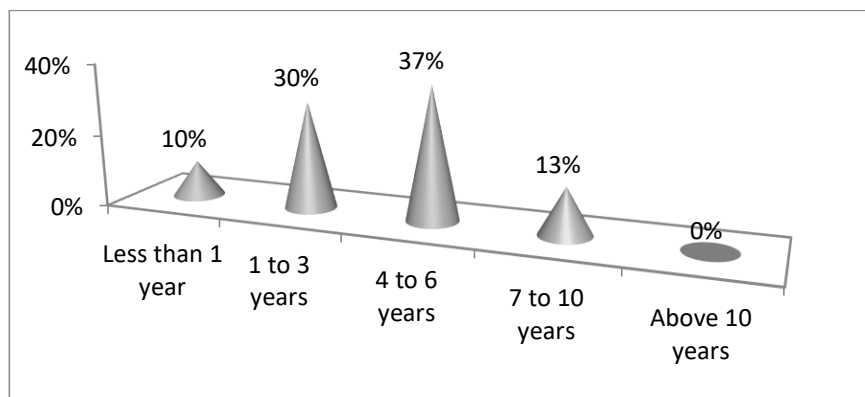
### SAMPLING

Collecting data about each and every unit of the population is called census method. The approach, where only a few units of population under study are considered for analysis is called sampling method.

1. **SAMPLE FRAME:** A Sample frame may be defined as the listing of the general components of the individual units that comprise the defined population.
2. **SAMPLE DESIGN:** Random sampling design
3. **SAMPLE SIZE:** The sample size chosen for the survey is 120.
4. **Tools used in the report rate:**
  - pie chart
  - Bar graph
  - Questionnaire

**DATA ANALYSIS AND INTERPRETATION****TABLE 1: EXPERIENCE IN YOUR ORGANIZATION (IN YEARS)**

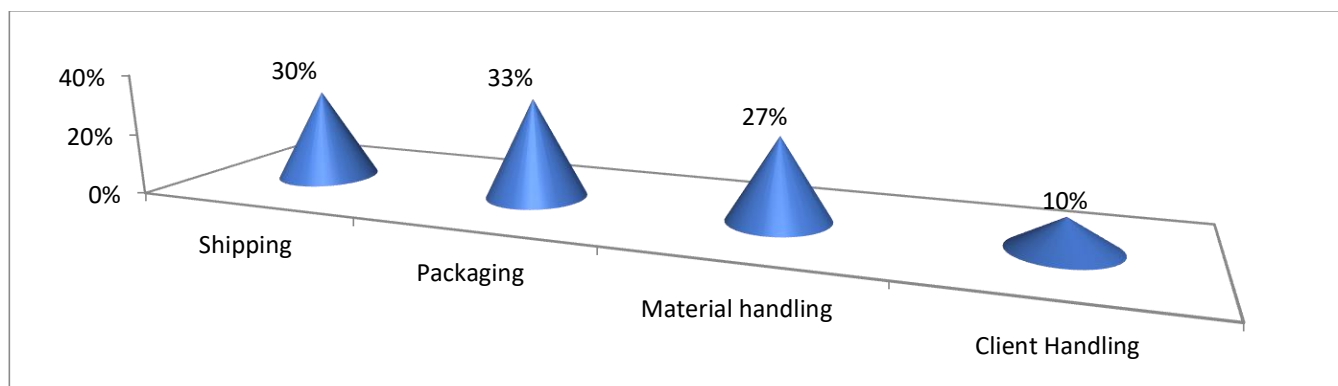
PARTICULARS	FREQUENCY	PERCENTAGE
Less than 1 year	15	13
1 to 3 years	40	33
4 to 6 years	47	39
7 to 10 years	18	15
Above 10 years	0	0
<b>TOTAL</b>	120	100

**CHART 1: EXPERIENCE IN YOUR ORGANIZATION (IN YEARS)****INFERENCE:**

From the above table, it can be inferred that 37% of the respondents are working for 4 to 6 years in this organization and 30% of the respondent's organization are working for 1 to 3 years in this organization. Therefore most of the respondents are working for 4 to 6 years in this organization

**TABLE 2: WORKING SEGMENT**

PARTICULARS	FREQUENCY	PERCENTAGE
Shipping	36	30
Packaging	40	33
Cargo handling	32	27
Client Handling	12	10
<b>TOTAL</b>	120	100

**CHART 2: WORKING SEGMENT**

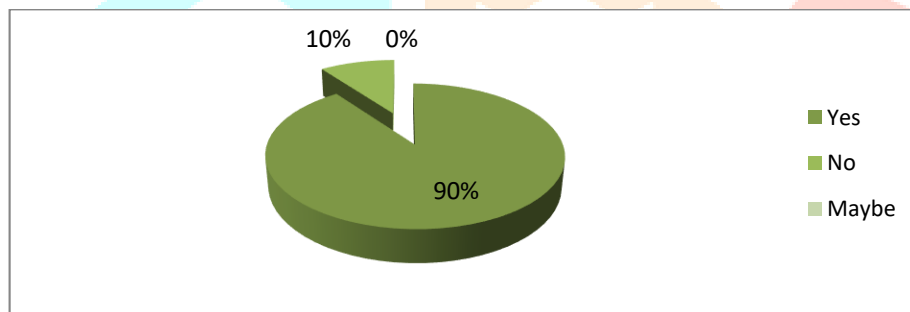
## INFERENCE

From the above table, it can be inferred that 33% of the respondents belong to Packaging segment and 30% of the respondents belong to Shipping segment. Therefore most of the respondents belong to Packaging segment

**TABLE 3: COMPLETE PHYSICAL INVENTORY (BY COUNT) AT LEAST ANNUALLY**

PARTICULARS	FREQUENCY	PERCENTAGE
Yes	108	90
No	12	10
Maybe	0	0
<b>TOTAL</b>	120	100

**CHART 3: COMPLETE PHYSICAL INVENTORY (BY COUNT) AT LEAST ANNUALLY**



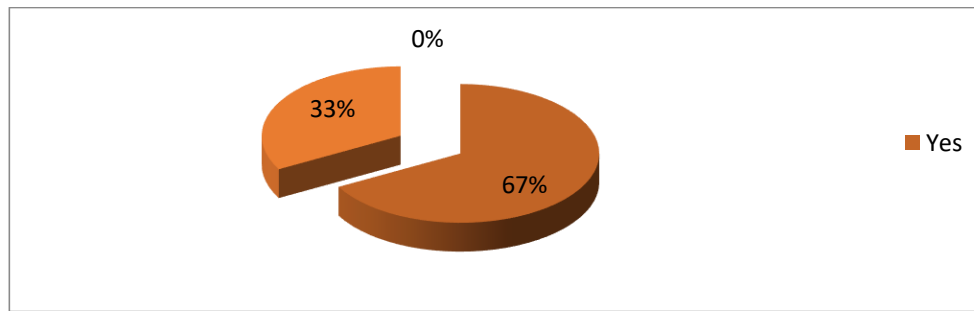
## INFERENCE

From the above table, it can be inferred that 90% of the respondents say that their company takes complete physical inventory (by count) at least annually and 10% of the respondents say that their company does not take complete physical inventory (by count) at least annually. Therefore most of the respondents say that their company takes complete physical inventory (by count) at least annually.

**TABLE 4: FIRM USE ITS OWN TRUCKS TO TRANSPORT GOODS TO AND FROM THE SOP ORIENTED WAREHOUSE**

PARTICULARS	FREQUENCY	PERCENTAGE
Yes	80	67
No	40	33
Maybe	0	0
<b>TOTAL</b>	120	100

#### CHART 4: FIRM USE ITS OWN TRUCKS TO TRANSPORT GOODS TO AND FROM THE SOP ORIENTED WAREHOUSE



#### INFERENCE

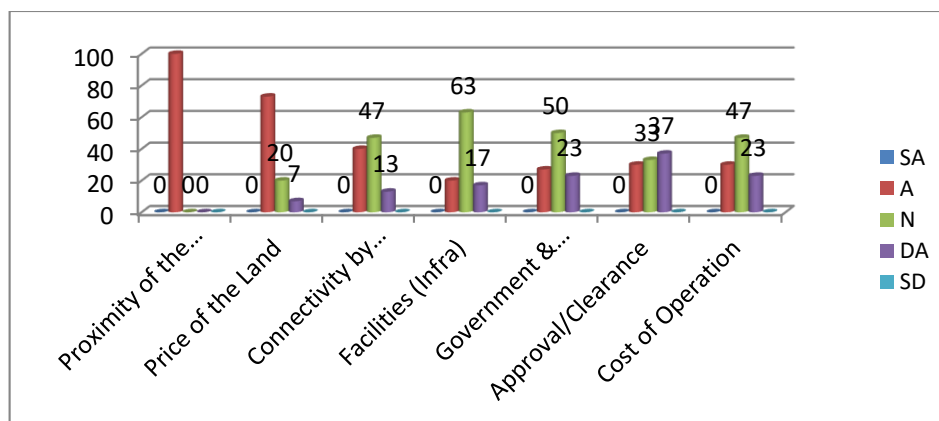
From the above table, it can be inferred that 67% of the respondents say that their firm uses its own trucks to transport goods to and from the SOP oriented warehouse and 33% of the respondents say that their firm does not use its own trucks to transport goods to and from the SOP oriented warehouse. Therefore most of the respondents say that their firm uses its own trucks to transport goods to and from the SOP oriented warehouse.

**TABLE 5: RATE THE LOCATION SELECTION FACTOR**

S. No.	PARTICULARS	SA	%	A	%	N	%	DA	%	SD	%	TOTAL
1	Proximity of the Market	0	0	120	100	0	0	0	0	0	0	120
2	Price of the Land	0	0	88	73	24	20	8	7	0	0	120
3	Connectivity by Road, Rail & Air	0	0	48	40	56	47	16	13	0	0	120
4	Facilities (Infra)	0	0	24	20	76	63	20	17	0	0	120
5	Government & Statutory	0	0	32	27	60	50	28	23	0	0	120
6	Approval/Clearance	0	0	36	30	40	33	44	37	0	0	120
7	Cost of Operation	0	0	36	30	56	47	28	23	0	0	120

Discrimination :

- SA – Strongly agree
- A – Agree
- N – Neutral
- DA – Disagree
- SD – Strongly disagree

**CHART 5: RATE THE LOCATION SELECTION FACTOR****INFERENCE**

From the above table, it can be inferred that

- 100% of the respondents agree that proximity of the market as the major location selection factor.
- 73% of the respondents agree that price of the land as the major location selection factor.
- 47% of the respondents neither agree nor disagree that Connectivity by Road, Rail & Air as the major location selection factor.
- 63% of the respondents neither agree nor disagree that Facilities (Infra) as the major location selection factor.
- 50% of the respondents neither agree nor disagree that Government & Statutory as the major location selection factor.
- 37% of the respondents disagree that Approval/Clearance as the major location selection factor.
- 47% of the respondents neither agree nor disagree that Cost of Operation as the major location selection factor.

**TABLE 6: RATE THE BASIC EQUIPMENT REQUIRED IN DESIGNING THE CARGO HANDLING EQUIPMENT**

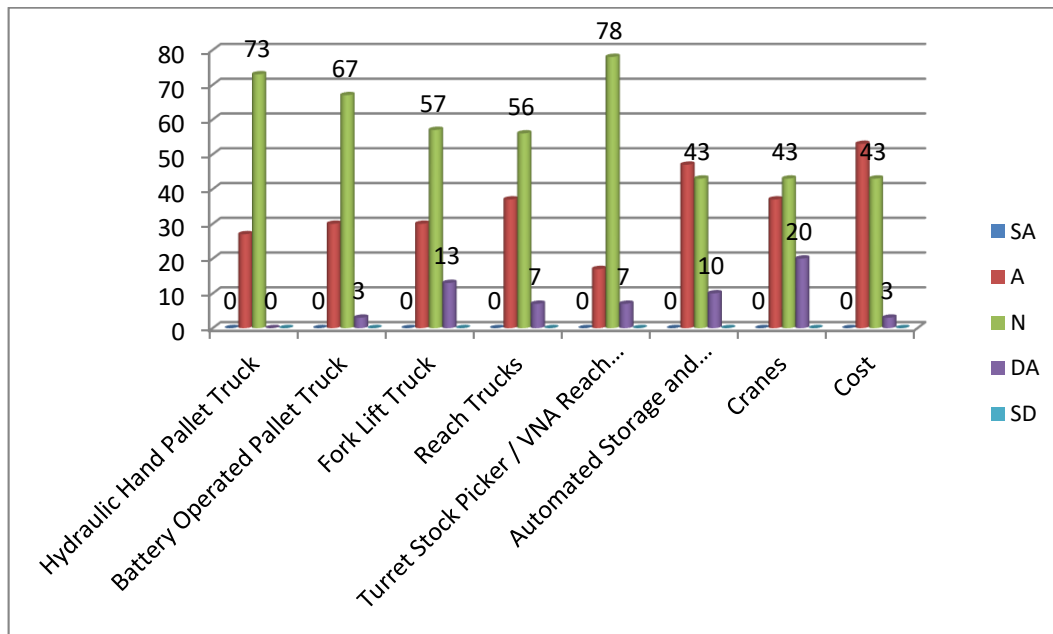
S. No.	PARTICULARS	SA	%	A	%	N	%	DA	%	SD	%	TOTAL
1	Hydraulic Hand Pallet Truck	0	0	32	27	88	73	0	0	0	0	120
2	Battery Operated Pallet Truck	0	0	36	30	80	67	4	3	0	0	120
3	Fork Lift Truck	0	0	36	30	68	57	16	13	0	0	120
4	Reach Trucks	0	0	44	37	68	56	8	7	0	0	120
5	Turret Stock Picker / VNA Reach Truck	0	0	20	17	92	78	8	7	0	0	120
6	Automated Storage and Retrieval System	0	0	56	47	52	43	12	10	0	0	120
7	Cranes	0	0	44	37	52	43	24	20	0	0	120
8	Cost	0	0	64	53	52	43	4	3	0	0	120



Discrimination :

- SA – Strongly agree
- A – Agree
- N – Neutral
- DA – Disagree
- SD – Strongly disagree

**CHART 6: RATE THE BASIC EQUIPMENT REQUIRED IN DESIGNING THE CARGO HANDLING EQUIPMENT**



## INFERENCE

From the above table, it can be inferred that

- 73% of the respondents neither agree nor disagree that Hydraulic Hand Pallet Truck as the basic equipment required in designing the cargo handling equipment.
- 67% of the respondents neither agree nor disagree that Battery Operated Pallet Truck as the basic equipment required in designing the cargo handling equipment.
- 57 % of the respondents neither agree nor disagree that Fork Lift Truck as the basic equipment required in designing the cargo handling equipment.
- 56% of the respondents neither agree nor disagree that Reach Trucks as the basic equipment required in designing the cargo handling equipment.
- 78% of the respondents neither agree nor disagree that Turret Stock Picker / VNA Reach Truck as the basic equipment required in designing the cargo handling equipment.
- 47% of the respondents agree that Automated Storage and Retrieval System as the basic equipment required in designing the cargo handling equipment.
- 43% of the respondents neither agree nor disagree that Cranes as the basic equipment required in designing the cargo handling equipment.
- 53% of the respondents agree that Cost as the basic equipment required in designing the cargo handling equipment.

## CONCLUSION

In general, the SOP oriented warehouse activity consists of receiving, put away, storage, packing and shipping. Receiving is an operation that involves the assignment of trucks to dock and the scheduling and execution of unloading Activities. Typical SOP oriented warehouse activities include putting items away, moving items inside or between SOP oriented warehouses, and picking items for assembly, production, or shipment. Assembling items for sale or inventory may also be considered SOP oriented warehouse activities, but these are covered elsewhere.

This study has been undertaken to understand the overall effectiveness of SOP oriented warehouse operations (inbound & outbound) at logistics companies. For this purpose, responses from the employees have been collected and analyzed. Based upon the findings out of the research, few valuable suggestions have been given to improve the cargo handling and practicing correct SOP at SOP oriented warehouse and its impact of logistics business.

## SUGGESTIONS

1. The signalman should be employed at all the necessary places for safer movement of cargo.
2. Effective lifting equipment should be used properly.
3. The package of the cargo should be made appropriately.
4. Special care should be taken on dangerous goods.
5. Develop vendor compliance policies, including purchasing terms and conditions, on-time delivery, quality and item specifications, routing guides and importing guides, product packaging and labeling and drop ship vendor standards. This reduces labor for rework of mistakes.
6. Implement lean SOP oriented warehouse operations as it opens up a range of areas ripe for significant, long-term and sustainable savings. From reduced handling time and reductions in loading/unloading times of trucks and containers to increased reliability and sharing of information and greater flexibility to adapt to changing market conditions of customer specifications, lean brings about a sea change in the SOP oriented warehouse mindset.
7. Conduct thorough employee training. Implement new technologies for SOP oriented warehouse operations thorough training programs that focus on technology and how employees should utilize the tools provided.
8. Review effectiveness of SOP oriented warehouse operations on a periodical basis.
9. Properly labeling must be there on cartons so that it will easy to handle it.
10. Mention the details of handling the goods on the box.

## BIBLIOGRAPHY

### BOOKS/REFERENCES

- Jain Khushpat .S - Export Import Procedure And Documentations, Mumbai, Himalaya Publishing House, Third Editions 2020.
- PramodRao – Logistics Management Concept And Cases, Hyderabad, The Icfai University, First Edition 2022.
- RaghuramAnd N. Rangaraj – Logistics And Supply Chain Management, Mac Millan India Limited, 2021 Delhi.
- Martin christo-pher – Logistics And Supply Chain Management, , New Delhi.
- Cr.Kothari – Research Methodology, International (P) Ltd New Edition 2018, Second Edition 2004, New Delhi.
- KrishnaveniMuthaih – Logistics Management Mumbai, Himalaya Publishing House, 2019.

### JOURNALS

- Sebastian,” Problems of Logistics Industry”, Journal of business logistics, Apr15, 2021
- Davis, Beth R,” Logistics service driven loyalty: an exploratory study”, Journal of business logistics, 2019