Investigation on Warehouse Management System and its impact on Business Performance in Textile Industry

S. Dhamodharan and *PA.* Padmaavathy*

Department of Management, Karpagam Academy of Higher Education, 641021 Coimbatore, Tamil Nadu, India

Abstract. Companies in manufacturing industries manufacture or transform raw resources into finished goods. To meet the demands of production, raw materials purchased from suppliers will be stockpiled. A warehouse that keeps products needs correct data for every product transaction that takes place. Processing data has gotten easier because to the advancement of information technology, notably for manufacturing warehouses and warehousing management. For warehousing management to process information reliably and promptly while utilising a system, existing transaction data is required. A warehouse management system is increasingly necessary since it can improve accuracy and efficiency while providing solutions to problems that occur there.

1 Introduction

Businesses in the manufacturing sector produce completed things from raw materials or turn them into them. Raw materials obtained from suppliers will be stocked up to satisfy production needs. Accurate data must exist for every item transaction that occurs in a warehouse. Items are concentrated in a warehouse, according to Bartholdi and Hackman (2019), to save transportation costs, provide economies of scale in manufacturing or purchasing, provide value-added operations, and accelerate response times. Receiving, storing, internal replenishment, order picking, gathering and sorting, packaging, cross-docking, and shipping are a few examples of typical warehouse activities. The characteristics of typical warehouses include a broad material flow pattern and a variety of operations or transactions.

The development of information technology has made it simpler to process existing data, especially for manufacturing warehouses and warehousing management. A warehouse management system, or WMS, is primarily used to regulate the flow of merchandise through a warehouse and the handling of related duties including shipping, receiving, putting away, and picking. By managing cutaways and monitoring warehouse activity, a database-driven computer programme known as a warehouse management system (WMS)

* Corresponding author: padmaavathypa@gmail.com

is utilised to increase warehouse productivity. Based on real-time information on the status of bin utilisation, the systems also regulate and optimise stock (Ramaa et al., 2012).

1.1 Review of literature

One of the key components of corporate operations is inventory, whose availability cannot be avoided. Because these things can't be acquired right away but require a grace time, inventories develop. Asynchronous demand and supply, as well as the time required to process raw materials, can also contribute to excess inventories. With the inventory, the business may promptly satisfy customer demand [1].

Businesses will find it simpler to fulfil operational activities and maintain a smooth operating cycle with effective inventory system control (Singh & Singh, 2015) [2]. Inventory needs to be structured to prevent labour from being wasted and to preserve regularity. Because inventory management will have an impact on both the production process and the company's financial statements, a system of control and recording for supplies is necessary [3]. It has a tracking and management system for inventory that is connected to the type, quantity, and location of inventory.

Systems for recording and controlling inventory are a component of warehousing management. The process of controlling the warehouse's receiving and putting away of items is the application of this management. According to Kusuma et al. (2017), this procedure is carried out in a warehouse with specific administrative documentation [4].

The purpose of warehouse management is to process warehousing activities that have an impact on the entire manufacturing process. The effectiveness of stock control or stock handling in the warehouse can be increased by well-managed warehousing management [5]. The processing of products and supplies in warehouses will be quicker and more useful when technological advancements are combined [6].

The use of a computerised warehousing system, which is believed to have effective workmanship and accuracy in processing data, has simplified access to and regulation of warehouse activities. Adopting a computerised warehousing system can enhance inventory tracking and storage, increase data accuracy, enhance data processing, and enhance the efficiency of warehouse staff members' responsibilities [7].

1.2 Statement of the problem

In this era of globalisation, businesses are looking for ways to get a competitive edge in their industries. Businesses can regulate their inventory levels, enhance accuracy, track their inventory, reduce personnel costs, and ensure sufficient maintenance and storage of stock by implementing a well-managed warehouse system. When it comes to preserving inventory, this kind of warehouse management may ensure that the suppliers and distributors have access to comfort and ease. Numerous studies have shown that warehouse management can be very beneficial in the storage and upkeep of inventory since an efficient warehouse management system is vital to an organization's operational efficiency.

1.3 Objectives of the study

1. To research GVG Paper Mills Private Limited's warehouse management system.
2. To understand how efficiently materials are issued for processing and stored.
3. To investigate employee awareness of the warehouse management system.

1.4 Hypotheses of the study

There is no significant association between demographic factors among respondents and level of awareness towards solar-powered products.

2 Research methodology

As a sample method, "Simple Random sampling" was used in this investigation. Of all the current probability sampling techniques, this one is the easiest to understand and requires the least amount of prior population knowledge .Using simple random sampling, a kind of probability sampling, the researcher randomly selects a group of individuals from a population. The sample size is appropriate for the type of data being collected. Based on the core data, which serves as the foundation for data collection, 150 employees are selected as the sample for this study. Numerous studies have shown that warehouse management can be very beneficial in the storage and maintenance of inventory.

3 Analysis and intrepretations

The following charts discloses the satisfaction level of warehousing facilities available in the company.

Fig. 1. Satisfaction level of warehouse packaging

Table 1. Satisfaction level of warehouse packaging

Packaging	No. of respondents	Percentage
Highly satisfied	47	31.3
Satisfied	49	32.7
Dissatisfied	31	20.7
Highly dissatisfied	23	15.3
Total	**150**	**100**

Source: Primary data

From the above table it is inferred that,31.3% of respondents are Highly Satisfied the warehouse packaging, 32.7% of the respondents are Satisfied, 20.7% of the respondents are Dissatisfied and remaining 15.3% of the respondents areHighly dissatisfied. It is found that the majority of respondents are Highly Satisfied the warehouse packaging.

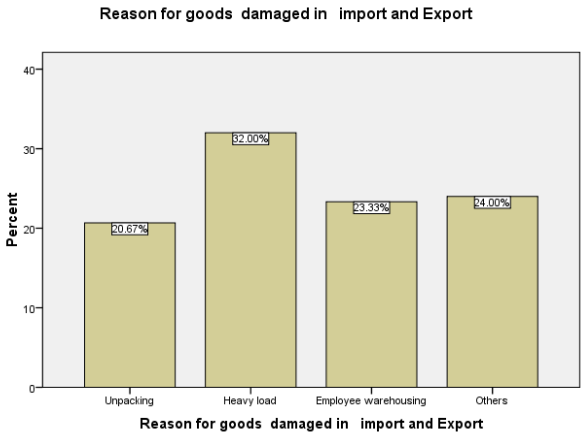

Fig. 2. Reason for goods damaged in imports and exports

Table 2. Reason for goods damaged in imports and exports

Damaged reason	No. of respondents	Percentage
Unpacking	31	20.7
Heavy load	48	32.0
Employee warehousing	35	23.3
Others	36	24.0
Total	**150**	**100**

Source: Primary data

It is evident that 32% of the respondents are Heavy load reason for goods damaged in import and export, 24% of the respondents are other reasons, 23.3% of the respondents are Employee warehousing and remaining 20.7% of the respondents are Unpacking. It is found that majority of the respondents are Heavy load reason for goods damaged in import and export**.**

Chi square test

H_O: There is no meaningful association between Organisational Position and Warehouse Service Types.
H_1: There is meaningful association between Organisational Position and Warehouse Service Types.

Table 3. Chi- Square Test

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Best describe our organization position * Types of warehouse service	150	100.0%	0	0.0%	150	100.0%

Table 3. Chi- Square Test

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Best describe our organization position * Types of warehouse service	150	100.0%	0	0.0%	150	100.0%

Table 4. Chi-Square Test

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	3.109E2[a]	9	0.000
Likelihood Ratio	306.882	9	0.000
N of Valid Cases	150		

0 cells (.0%) have expected count less than 5. The minimum expected count is 7.23. There is no significant relationship between the Organization position and Types of warehouse service.

Table 5. Correlation. Correlation analysis between Income and Experience

			Income	Experience
Kendall's tau_b	Income	Correlation Coefficient	1.000	0.927**
		Sig. (2-tailed)	.	0.000
		N	150	150
	Experience	Correlation Coefficient	0.927**	1.000

		Sig. (2-tailed)	0.000	.
		N	150	150
Spearman's rho	Income	Correlation Coefficient	1.000	0.955**
		Sig. (2-tailed)	0	0.000
		N	150	150
	Experience	Correlation Coefficient	0.955**	1.000
		Sig. (2-tailed)	0.000	0
		N	150	150

**. Correlation is significant at the 0.01 level (2-tailed).

Table 6. Correlation Analysis

		Income	Experience
Income	Pearson Correlation	1	0.945**
	Sig. (2-tailed)		0.000
	N	150	150
Experience	Pearson Correlation	0.945**	1
	Sig. (2-tailed)	0.000	
	N	150	150
**. Correlation is significant at the 0.01 level (2-tailed).			

This is a positive correlation. There is a significant relationship between Income and Experience of the employees.

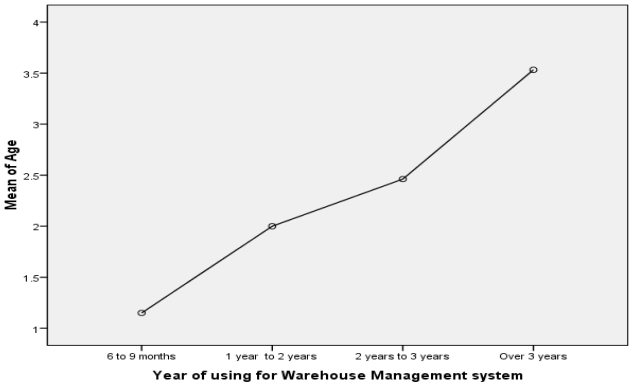

Fig. 3. Years of using Warehouse Management System

Table 7. ANOVA Test

Education						
	Year of using for Warehouse Management system	N	Subset for alpha = 0.05			
			1	2	3	4
Tukey B[a]	6 to 9 months	20	1.15			
	1 year to 2 years	44		2.00		
	2 years to 3 years	39			2.46	
	Over 3 years	47				3.53
Duncan[a]	6 to 9 months	20	1.15			
	1 year to 2 years	44		2.00		
	2 years to 3 years	39			2.46	
	Over 3 years	47				3.53
	Sig.		1.000	1.000	1.000	1.000
Means for groups in homogeneous subsets are displayed.						
[a]Uses Harmonic Mean Sample Size = 33.432.						

As the calculated value of the F-value is a positive value, so H1 accept. Since the P value less than < 0.05 regarding there is a significant relationship between Educational Qualification and feel about the level of preference to new products. The results are significant at 4 % level.

4 Findings

This study proves that the Organisational position and the types of warehouse service have no meaningful link. The income and experience of the employees are significantly correlated. Education level and feelings of level of desire for new products have a substantial relationship. At a 4% level, the results are significant.

5 Suggestions

The suggested idea of implementing a transport system can undoubtedly advance management and employee relations, increase internal and external communication, and ultimately lower employee turnover. A proper production approach, particularly for tyre manufacturing companies, can be used to reduce costs as they rise. The pull system, one of the transport department's most effective methods, might be suggested for implementation to meet consumer expectations. The providers might become Just-in-Time providers to control varying demand.

The success of the manufacturing businesses is aided and guaranteed by effective warehouse management. Inventory management will dramatically benefit the overall company if it is implemented well. Modern warehouse management methods make use of new, more sophisticated approaches that enable dynamic inventory optimisation in order to maximise customer service while reducing inventory and costs. The goal of effective warehouse management is progress rather than perfection. These developments should be viewed as continuing efforts rather than one-time projects.

6 Conclusion

The current effort will be of great use to paint manufacturers who want to increase their profit. It is appropriate to adopt the executive framework in their association as well as to educate all of their upstream providers on the fundamental concepts and philosophy covered in this examination and help them understand the benefits while receiving it. Customers' needs are consistently satisfied in order to maintain competitiveness, which is accomplished, among other things, by enabling more flexible processes through the use of radio-frequency technology, improving delivery scope through the availability of same-day delivery services, reducing delivery lead times, particularly for airfreight mode, increasing customer satisfaction with fewer complaints, and increasing warehouse visibility.

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