

Implementation of Fishbone Analysis in Managing Warehousing Problems at PT Sari Warna Asli V Kudus

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ABSTRACT

Background. Warehouse management is crucial for manufacturing companies to ensure production runs smoothly and demand is met efficiently. Poor warehouse management can lead to several issues, such as dirty and dusty conditions, inconsistent goods recording, and suboptimal spare parts layouts. These problems can hinder operational efficiency and disrupt production.

Purpose. This research aims to address inefficiencies in the spare parts warehouse management at PT Sari Warna Asli V Kudus. Specifically, the study seeks to identify the root causes of these issues using fishbone analysis and propose practical solutions to improve the warehouse's operational efficiency.

Method. The study was conducted as part of a student internship from February to April 2024 at PT Sari Warna Asli V Kudus. It involved a preliminary review, problem identification, data collection from primary and secondary sources, and the application of fishbone analysis. The process included gathering data, creating a causal factor diagram, identifying the root causes, and recommending solutions.

Results. The research found that the main problems in the warehouse included the lack of a Standard Operating Procedure (SOP) for managing warehouse activities such as receiving and sending goods, cleanliness, regular inspections, and stock management. These gaps contributed to the inefficiencies in the warehouse operations.

Conclusion. To improve warehouse management at PT Sari Warna Asli V Kudus, the study recommends the implementation of consistent SOPs, regular inspections, and monthly stocktaking. Additionally, warehouse staff should receive training to enhance their skills and knowledge. These measures are expected to significantly improve warehouse conditions and overall operational efficiency.

KEYWORDS

Fishbone Analysis, PT Sari Warna Asli V Kudus, Warehousing Management.

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INTRODUCTION

The warehouse is a very important part of ensuring the continuity of production and meeting demand needs for manufacturing companies. Apart from that, to maintain its existence, every company needs to manage its warehouse management well in order to maximize the company's effectiveness and efficiency (Gemari:2021). The warehouse works as place storage goods before distribution started (Juliana:2016).



The use of a warehouse management system can reduce the difference between goods recording documents and physical items (Tanisri:2022). By carrying out good warehouse management, you can prevent loss and damage to products (Tarjo:2019), control the movement and storage of goods to determine the amount of stock (Aresti:2021), placement of goods in the warehouse can pay attention to differences in the characteristics of goods (Shobah:2021) so that you can optimize the role of the warehouse (Irfan:2023) is to shorten time, maximize use of space and use of human resources (Aulia:2023)

Warehouse management at PT Sari Warna Asli V Kudus is divided into three parts, including the raw materials warehouse which is used to store fabrics, the spare parts warehouse which is used as a place to store spare parts for production machines, and the finished goods warehouse which is used to store finished products for distribution. The activities occurring at Gudang Sari Warna Asli V Kudus are still not optimal. So the problem of warehouse management has not been managed optimally, cases encountered at several warehouse points still look very dirty and dusty, the recording of incoming and outgoing goods is inconsistent, and the layout of spare parts is not considered according to the goods category. Conditions like this will have an impact on warehouse use that is not optimal (Aulia:2023), disrupted movement mobility in the warehouse (Hidayat:2022), and distance for picking up goods that is not optimal (Aji:2023).

RESEARCH METHODOLOGY

This research activity was developed from the implementation of a student internship at PT Sari Warna Asli V Kudus which was carried out from February to April 2024.

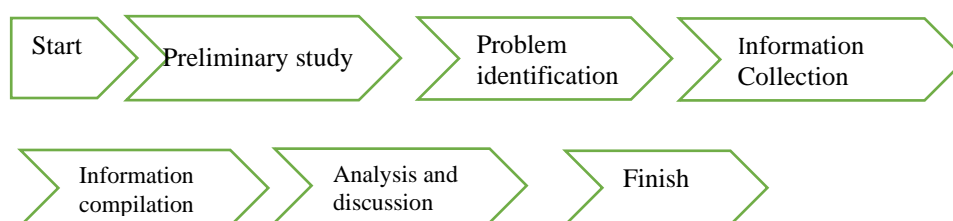


Figure 1. Flow of Stages Study

Start : Stages First study starting in February 2024 at PT Sari Warna Asli V Kudus

Preliminary study: Collecting all information related to research through literature studies and field studies.

Problem identification : Identifying problems at PT Sari Warna Asli V Kudus continues by preparing a problem formulation.

Information collection: The data used in this research uses primary data and secondary data. Where primary data was obtained from PT Sari Warna Asli V Kudus through direct visits, while secondary data came from previous research literature studies.

Information compilation: Processing data using fishbone analysis to conclude the problems that are occurring in more detail, Fishbone diagram is a technique to see the cause of a problem of an event, where the fishbone diagram is applied to identify, explore and analyze the problems that arise. Fishbone analysis is a structured approach to analyzing in more detail (Gasper, 2002) in Else (2022).

Analysis and discussion: From the results of compiling the information, a more detailed analysis and discussion was carried out regarding the problems.

Finish: Stage end study This be marked with publication in journals scientific .

RESULT AND DISCUSSION

Based on observations at the spare parts warehouse of PT Sari Warna Asli V Kudus, it can be concluded that warehouse management has not been optimized. This has led to several issues. Through the design of a fishbone analysis diagram, the root causes of these problems can be identified.

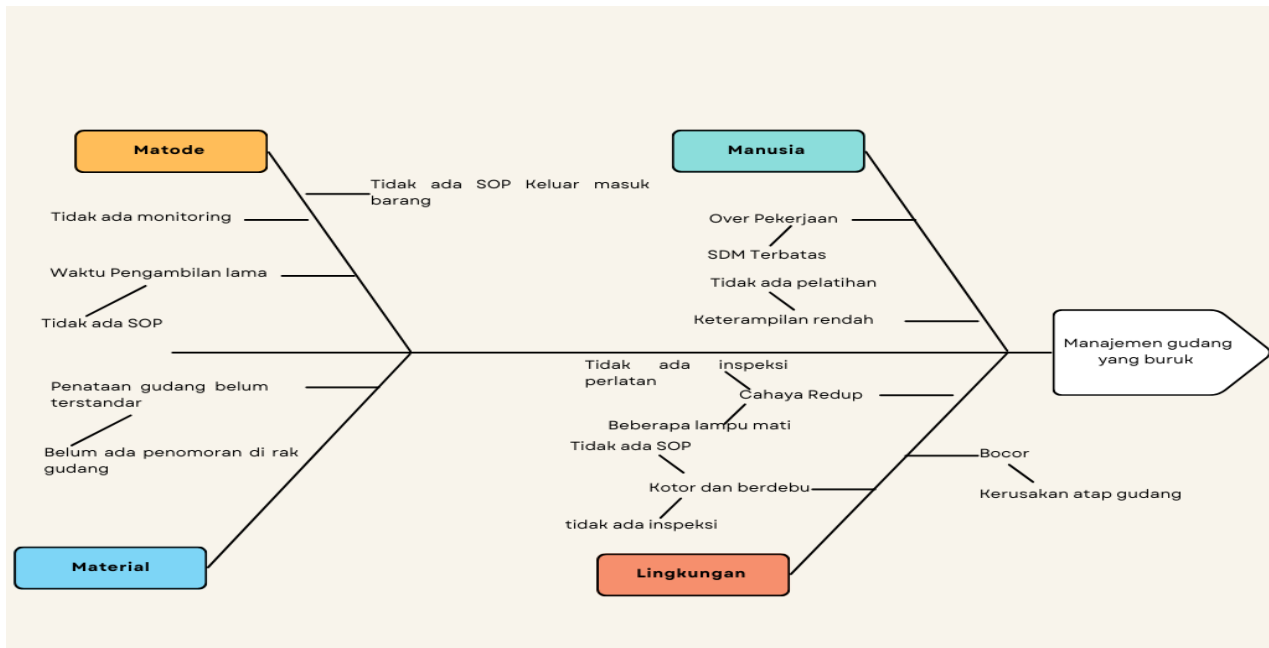


Figure 2. Fishbone diagram

Factor	Cause	Consequence	Recomendation
Man	Limited warehouse staff	Overburdening of work	adds human resources to the warehousing department
	Human resource still lack training	warehouse management not optimum	Providing certified training to warehouse human resources
Method	There is no monitoring	Warehouse management becomes uncontrolled	Carrying out audits / inspections to management warehousing
	Long retrieval times	Wasting time on goods collection	Carry out classification and numbering of shelves in the warehouse
	There is no clear SOP of goods entry and exit	Retrieval process becomes lengthy	Create SOPs about standard warehousing
Material	Unstandardized warehouse layout	There isn't any numbering on the shelves warehouse	Make standard or SOP regarding arrangement warehouse / <i>relay out</i>
	Dirty and dusty	Equipment becomes dirty and damaged	Create SOPs regarding warehouse cleanliness
Environment	Several points in the	Some equipment	Do checking in a way

Factor	Cause	Consequence	Recomendation
	warehouse leaks	becomes easily damaged	periodically about a number of damaged warehouse roof point.


Table 1. Factor, Cause, Consequence, Recomendation

Source : data processing 2024

The fishbone analysis conducted at the spare parts warehouse of PT Sari Warna Asli V Kudus revealed several factors that hinder effective warehouse management. These factors were categorized into four main groups: Human Resources, Methods, Materials, and Environment. Each category contains specific issues that contribute to the suboptimal operation of the warehouse.

In the Human Resources category, it was found that the limited number of warehouse staff led to workload accumulation and delays in operational processes. Additionally, the lack of skills and knowledge among staff regarding warehouse management exacerbated the situation. Therefore, increasing the number of staff and providing certified training to enhance their competencies are necessary solutions.

The Methods used in warehouse management also contributed to the problems. The absence of consistent monitoring resulted in a lack of control and oversight over warehouse processes. The long time required for item retrieval and the lack of clear Standard Operating Procedures (SOPs) for receiving and dispatching goods added to the complexity of the issues. Kirim (2016) in Andre Irfan (2023) explains that warehouse management is an activity in handling and controlling materials in the warehouse including storage of goods, management of dagerouse goods, processing orders for goods and incoming materials, taking stock, checking and refilling. In addition, several activities carried out in the warehouse include inbound (receiving goods), handling (handling materials), outbound (issuing materials). The solutions include conducting regular audits, classifying and numbering racks in the warehouse, and developing clear SOPs for each operational stage.

PT SARI WARNA ASLI V KUDUS	No Dok	
	Tgl Berlaku	
	Revisi	
STANDARD OPERATING PROCEDURE RECEIVING	Tgl Revisi	
	Jumlah Hal	
Tujuan: Sebagai pedoman aktivitas penerimaan barang di gudang untuk memastikan jika barang yang diterima telah sesuai dan berjalan dengan baik.		
Bahan & Alat Dok. Surat Jalan No Purchase Order No Received Tumpukan Hand Clip No Slip Lock		
Tanggung Jawab Menerima barang serta memastikan kondisi barang tersebut baik, jenis barang, jumlah koli barang sesuai dengan dokumen surat jalan Memeriksa kesesuaian barang yang diterima dengan surat order pembelian Memeriksa kesesuaian antara dokumen surat jalan dengan jumlah Quantity Melakukan input barang ke dalam sistem perusahaan		
PT SARI WARNA ASLI V KUDUS	No Dok	
	Tgl Berlaku	
	Revisi	
STANDARD OPERATING PROCEDURE RECEIVING (PENERIMAAN BARANG)	Tgl Revisi	
	Jumlah Hal	
Aktivitas	Dokumen	Keterangan
		


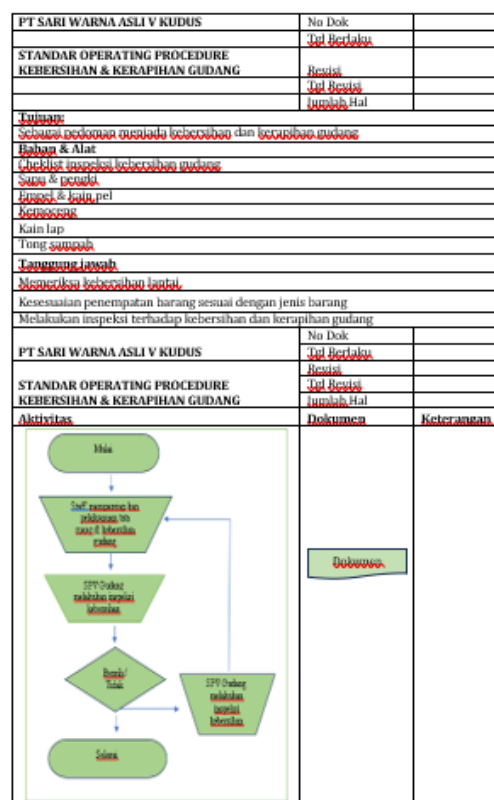
PT SARI WARNA ASLI V KUDUS	No Dok	
	Tgl Berlaku	
	Revisi	
STANDARD OPERATING PROCEDURE PENGIRIMAN BARANG	Tgl Revisi	
	Jumlah Hal	
Tujuan: Sebagai pedoman aktivitas dalam pengiriman barang yang digunakan untuk memastikan jika barang yang diterima telah sesuai dengan pesanan.		
Bahan & Alat Dok. Sales Order Nomor Sales Order Tumpukan Hand Clip No slip Lock No Transfer out		
Tanggung Jawab Menerima order permintaan barang Melakukan persiapan pengiriman barang Melakukan input barang keluar Melakukan pengecekan kesesuaian barang dengan dokumen Melakukan pengiriman		
PT SARI WARNA ASLI V KUDUS	No Dok	
	Tgl Berlaku	
	Revisi	
STANDARD OPERATING PROCEDURE PENGIRIMAN BARANG	Tgl Revisi	
	Jumlah Hal	
Aktivitas	Dokumen	Keterangan
		

Figure 3. SOP Receiving & Delivering.

The Materials category highlighted issues such as non-standard warehouse arrangement, with unclear rack numbering, and dirty and dusty warehouse conditions. This led to equipment becoming easily damaged and inefficiencies in item retrieval. Standardizing warehouse arrangements and implementing SOPs for cleanliness are crucial to ensure better warehouse conditions. An disorganized workplace is one that lacks structure, order, and efficiency in its design and operations. This can lead to a cluttered and chaotic environment, which can reduce productivity, safety, and general efficiency. Clutter in the workplace is the collection of unneeded or disorganized goods, resources, and equipment that can disrupt productivity and create a hazardous or unpleasant working environment. An unclean work area is one that is dirty, unsanitary, and has not been thoroughly cleaned. This can cause a number of issues, including health and safety risks. These conditions can cause a slip and trip danger (Mirza:2023). Heizer & Rander (2015) explained that the layout of goods storage in a warehouse is a description that aims to achieve a balance between space and handling, utilizing labor and space, reducing material handling (Moegin.2015). In a spare part warehouse, the layout design includes determining the location and planning of facilities, layout, and placement of spare parts in the warehouse (Tomkins, 2003), good planning can minimize the disruption of the production process (Sritomo, 2003). In addition, a good layout will increase the efficiency of moving distance and material handling costs (Beni Harma, 2020). Nugroho (2012) explained that a good layout arrangement has advantages in the production process. Therefore we need to make a SOP and a form for cleanliness and tidiness such as in Figure 4.

**Figure 4.** SOP clean and tidiness.

The physical environment of the warehouse also contributed to management issues, with some areas experiencing leaks that damaged stored equipment. The solution to this problem is to perform regular checks and maintenance on the warehouse infrastructure, especially the roof, to prevent further damage.

CHECKLIST KEBERSIHAN GUDANG																																	
PT SARI WARNA ASLI V KUDUS																																	
Bulan & Tahun																																	
No	Kegiatan	Tanggal																															
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
1	Membersihkan Lantai																																
2	Membersihkan atap																																
3	Membersihkan pintu & kaca																																
4	Memeriksa penerangan & kebocoran atap																																
5	Memeriksa barang di lantai																																
6	Membersihkan rak & palet																																
7	Memeriksa susunan penempatan produk sesuai tempatnya																																
8	Membersihkan sampah																																
Paraf Petugas Kebersihan																																	
		Mengetahui																															
		Supervisor Gudang																															

Figure 5. Checklist Cleaning and Maintenance.

Overall, the recommendations provided to address these issues include implementing clear SOPs, improving warehouse cleanliness, conducting staff training and development, reorganizing the warehouse layout, and performing routine infrastructure maintenance. By implementing these recommendations, PT Sari Warna Asli V Kudus is expected to significantly improve its warehouse management, ultimately supporting smoother operational processes and enhancing overall efficiency.

CONCLUSION

After the researchers analyzed and obtained problems in the warehouse management system in the section spare parts at PT Sari Warna Asli V Kudus. By using the fishbone analysis method, several problems were obtained, including consistent implementation of warehouse management SOPs, periodic warehouse cleanliness checks, regular stock opname at least once a month to ensure conformity between physical and documents, periodically providing training to warehouse staff to increase knowledge. and skills.

Companies need to review the storage processes currently used using classes based storage . This is because in the process of arranging storage using this method there is still a lot of empty space in the warehouse that has not been utilized optimally. The company determines SOPs and inspections for storing goods periodically so that it will be easier for the company to carry out warehouse management. The company provides training and training to employees responsible for warehousing, to provide refreshment / refresher on knowledge about warehouse management.

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AUTHORS' CONTRIBUTION

Author 1: Conceptualization; Project administration; Validation;.

Author 2: Writing - review and editing

Author 3: Data Collecting

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