



Factors that Influence Delay Time in Loading and Unloading Goods at Warehouses: Case Study at Century Total Logistics Sdn Bhd

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Abstract. Warehouse is an important part for logistics and supply chain management. Receiving and delivering are the scope and job function of a warehouse for incoming and outgoing material flow. Incoming shipments are brought to the warehouse, unloaded at the receiving docks, and put into storage. The objective of the study was to determine factors influencing delay time in loading and unloading at Century Total Logistics warehouses. Fifty-eight staff at Century warehouses, including supervisors, managers and executives involve in the study. Work measurement method is used to compare loading and unloading process, values with normal and standard values. If there are poor results, poor performance, in reality, improvements for the process have to be made. Survey questionnaires were distributed to all the staff engaged in warehouse operations and there were in total 58 respondents received at Century Total Logistics Sdn Bhd. to determine factors influence the delay time. Interviews were also conducted in order to gather in-depth information about the topic. The study findings concluded the following areas that need to be concentrated: warehouse efficiency including work efficiency and space utilisation; and working methods. As conclusion, these two factors have an impact on warehouse efficiency and on the possibilities of improving warehousing operations.

Keywords: warehouse · century · imfluence

1 Introduction

Labor research is a general statement used to study all the sources and factors that influence a particular activity in relation to productivity and broad human research to investigate and improve working conditions. am. It is the most famous method of working measurement. Labor measurement is defined as the application of techniques designed to determine how long it takes a skilled worker to perform a particular task at a particular speed. This ensures that, whether analyzing existing practices or developing new ones, factors affecting the effectiveness of trading are not ignored and that all events related to trading are taken into account [1].

Standards are provided as a guideline, but it is a guideline that does not increase fatigue for skilled workers who are accustomed to the work. Standard runtime is the

result of recording standard times for all work-related elements, taking into account a number of events [1]. We call this period plus a tolerance for the employee's personal needs and unforeseen delays standard time [2].

In the warehouse, day-to-day operations are carried out at the same time with a system of carrying in (carrying out) and carrying out (carrying in). The process of the unloading system is the arrival, checking, unloading, packing, sealing and storage of the supplier's truck. On the other hand, the arrival of customer trucks, fulfillment of delivery orders, picking, sealing, loading and managing are processes performed at loading facilities. The main problem is the delay time in loading and unloading goods at the logistics company's warehouse. Therefore, this study aims to identify the factors that affect the delay times in loading and unloading goods at Total Century Logistics warehouses.

2 Literature Review

In this chapter, a few discussion on the subject area will be explained systematically. It starts with the growth and potential of logistics industry. Then, it focused on a research question, trying to identify, appraise, select and synthesize all research evidence and arguments relevant to that question. Most of the reviews are nearly every academic in field.

2.1 Growth and Potential of Logistics Industry

From a global perspective, the logistics industry plays an important role in international trade. Global turnover in 2011 he reached 981 billion euros and the market for logistics services he is projected to grow by up to 3% (3%) annually worldwide until 2020 [3]. Logistics companies must adapt to new market trends that impose very challenging requirements [3]. There are new opportunities for the logistics industry, such as the growing importance of the domestic market, the expansion of e-commerce, and the provision of professional services for various industries. The volatile market environment, the ever-growing online marketplace, the shift of the market to Asia, and the growing demand for specialized transportation are necessitating new corporate strategies and significant investments by logistics service providers.

From Malaysia's perspective, the logistics sector is seen as a key factor in the country's economic performance and future. Logistics plays a vital role in the Malaysian economy as it forms the backbone that facilitates international trade. The government will develop a master plan for the logistics sector to improve the performance of the country's logistics activities from his 29th place in the World Bank's 2012 Logistics Performance Index report [4].

Improvement focus is on logistics infrastructure and supply chain development, and regulatory and legal review. Additionally, businesses must be competitive and thrive in the marketplace by offering the right product in the right quantity, at the right place, at the right time, and at the lowest possible cost.

2.2 Warehouse Management

[9] Summarize the findings that warehouses are an important part of logistics management. Receipts and issues are the scope and area of responsibility of warehouses for incoming and outgoing material flows. Incoming cargo is transported to the warehouse, unloaded at the receiving ramp, and stored. Orders are picked from warehouses, prepared and shipped to customers via docks using vans, trucks, trucks and ships. Examples of receiving and delivery operations are assigning trucks to docks and planning loading and unloading activities.

Warehouses store factory products and goods from suppliers and deliver them to wholesalers and customers. Planning and management in warehouse management have been studied by researchers in both art and science [5]. Nevertheless, there is still no good basic theory of warehouse weighing performance work. To perform high-performance work in a warehouse, he must consider three different perspectives. Process, resource and organization [6]. A product arriving at a warehouse goes through a series of steps called a process. Resources refer to all tools, equipment, and personnel required to operate a warehouse.

Speed and reliability were shown to be the most important service factors, followed by freight charges and warehousing losses and damages [7]. Surveyed pick-up and delivery ranked as the most important issue, followed by charges and fees and loss and damage. These are linked to performance works at the camp [8].

So, in this research, researchers are aim to measure performance work at warehouse department and determine factors influencing delay time in loading and unloading goods.

2.3 Measuring Performance Work at Warehouse

Performance refers to the way work is done. There can be good performance and bad performance. But what is performance measurement? The process of quantifying the efficiency and effectiveness of a measurement or activity [9]. The purpose of performance measurement is to see if things are going well. If not, find out what caused the poor performance. After this step, you should find a solution that improves performance. There are several reasons for measuring power.

Improve performance, avoid inconveniences before it's too late, monitor customer relationships, manage processes and costs, and maintain quality [10]. The most important tools for performance evaluation are performance indicators, also called key performance indicators. They are specific characteristics of a process that are measured to describe whether the process is performing according to given standards. The best way to use the index is to compare process values with normal standard values. If you have bad results, bad performance, you really need to improve your process. Key figures are usually used for comparison with expected values. They are the control systems of the inspected processes. In our case, setting up a key figure system for warehouse activities is the key to improving performance, as shown in our example.

We present a software tool that allows you to select public warehouses according to the following criteria:

Storage areas and volumes; Hazardous materials; Possibility of temperature control; Separation of storage areas; certification; opening hours; customs assistance; use of technology; handle equipment; number and characteristics of docks [11].

Table 1. Work Study Loading and Unloading Goods Time At Total Century Logistics Sdn Bhd Warehouses

| Process | Standard Time Operation | Actual Time Operation | Total Delay Time |
|--|--------------------------------|------------------------------|-------------------------|
| Delivery Order | 30 min | 46 min 03 s | (16 min 03 s) |
| Pick Up Goods From Racking | 120 min | 150 min 26 s | (30 min 26 s) |
| Stacking Goods On Pallet, Sealing, Loading | 120 min | 226 min 31 s | (106 min 31 s) |
| Checking | 60 min | 180 min 85 s | (120 min 85 s) |
| Total | 5 h 30 min | 10 h 30 min | 4 h 34 min |

Uses three types of indicators: order fulfilment, inventory management and warehouse performance [12].

3 Methodology

Work measurement method is used to compare loading and unloading process, values with normal and standard values. The study was conduct between July 2021 to Feb 2022. If there are poor results, poor performance, in reality, improvements for the process have to be made. Survey questionnaires were distributed to all the staff engaged in warehouse operations and there were in total 58 respondents received at Century Total Logistics Sdn Bhd. to determine factors influence the delay time. Interviews were also conducted in order to gather in-depth information about the topic.

4 Findings and Discussion

To answer the research question 1, work study were used to see the standard time and actual time in loading and unloading goods. The results regarding the total delay time is shown in Table 1.

Total Delay Time

According to the table, checking work process had been shown to be cause for long total delay time. It's clear that the total delay time of all loading and unloading process were high which are 4 h 34 min. The time management during checking is the most delay time during loading and unloading process, 120 min 85 s. While for the process stacking goods on pallet shown 106 min 31 s. The standard time for the whole process during operations is 5 h 30 min for that process. The delay gave impact towards the other process.

Table 2. General work study at Total Century Logistics Warehouse

| Work Process | Yes % | No % |
|--|-------|------|
| Is the truck/trailer driver wearing correct PPE (personal protective equipment)? | 100 | 0 |
| Is there any damage to the truck/trailer? | 27 | 73 |
| Are the appropriate people and equipment available for loading/unloading? | 100 | 0 |
| Are there any items that require special lifts or crane to handle them? | 80 | 20 |

Table 3. Unloading work study at Total Century Logistics Warehouse

| Work Process | Yes % | No % |
|---|-------|-------|
| Are all items effectively secured to a pallet, cradle or in a cage? | 93 | 6.67 |
| Could any freight move, or become unstable, if the load restraint devices were removed? | 87 | 13 |
| Is there any spillage of hydrocarbons or chemicals? | 26.67 | 73.33 |

General Work Study

The first section of the questionnaire is about general questions on work study at warehouse department. Based on self-evaluation, the respondents were asked to rate using closed-ended questionnaires. The result regarding the general work study is shown in Table 2.

Unloading work study

The second section of the questionnaire is about unloading work study. The result regarding unloading work study is shown in Table 3.

According to the table, most of the respondents agree that all items effectively secured to a pallet, cradle or in a cage for unloading work process as we can see 93% score. While 87% agree that freight will move or become unstable if the load restraint devices were removed. Most of respondents agree that there are spillage of hydrocarbons or chemicals as we can see 73.33% score.

Loading work study

The third section of the questionnaire is about unloading work study. The result is shown in Table 4.

According to the table, most of the respondents agree that all items effectively secured to a pallet, cradle or in a cage for unloading work process as we can see 93% score. While 87% agree that freight will move or become unstable if the load restraint devices were removed. Most of respondents agree that there are spillage of hydrocarbons or chemicals as we can see 73.33% score.

Table 4. Loading work study at Total Century Logistics Warehouse

| Work Process | Yes % | No % |
|---|-------|-------|
| Is freight to be despatched clean, well packed and secured in cartons or appropriate packaging? | 100 | 0 |
| Is documentation,(invoices, DO) complete for all cargo being despatched? | 100 | 0 |
| Are there any items that may have stored energy, e.g. springs under tension fitted with warning labels? | 46.67 | 53.33 |
| Are there any items that require special lifts or crane to handle them? | 80 | 20 |

From the study, it shows that the factors influence delay time in loading and unloading time goods are from storage surface, storage volume, storage racks, number and characteristics of docks, pallets per hour, pallets per square meter, opening hours, and assistance with customs. For recommendations, adding a forklift and a driver, it will overcome the problem and also reduces the waiting time of the customers.

5 Conclusion

It is well defined that a company must be competitive and thrive in the market by delivering the right quantity, at the right time and at the lowest possible cost. It is too late to detect and solve camp problems in advance. Apart from reducing costs, improving warehouse operations and keeping costs low are key differentiating features for logistics companies.

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