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The Effect of the Application of Warehouse Management System on Goods Storage at PT Shippindo Logistics Technology

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ABSTRACT: This research was conducted at PT Shippindo Teknologi Logistik. The purpose of this study is to determine the results of data analysis from the effect of implementing a warehouse management system on the storage of goods at PT Shippindo Teknologi Logistik. In this study, researchers distributed 100 questionnaires to respondents, and these respondents were directly related to the object of study. The research methodology used in this study is a quantitative research method, using a deductive-inductive approach. The results of data calculation and analysis in this study were processed using the SPSS program. From the calculation results using SPSS, the regression equation results are obtained which are Y = 11.038 + 0.938X0.710. So it can be concluded that it can be found that attitude partially affects consumer buying interest significantly and positively. This can be seen from the results of the t-test stating that the p-value is smaller than the significance value (0.000 < 0.05). In addition, in the attitude variable the calculated value of 4.332> the ttable value of 2.048, the Warehouse Management System variable was declared to have a positive effect. Against the variable storage of goods, it can be concluded that a hypothesis is formed to analyze the influence of the variable.

Keywords: Warehouse, Managememt System, Storage of Goods, Logistics

INTRODUCTION

Warehouse management system is something that has an important role to make operations in warehousing can run smoothly in accordance with what has been planned. In addition, the warehouse management system is also a place that is useful for storing goods for production raw materials or production results. Then, it will be stored for a certain period of time and will be distributed as soon as possible to the location of consumer demand (Al-Ababneh, 2021; Alazzawi, 2021; Buldeo Rai et al., 2017; Rintala et al., 2022).

This warehouse management system is one of the warehouse management systems which has an important role in the supply chain.

The purpose of the Warehouse Management System is to control and monitor various processes that occur, such as the delivery of goods, receipt, and storage of goods. In other words, the warehouse management system can also function to monitor goods and the process of picking goods (Giordano et al., 2018; Gu et al., 2021; Heitz et al., 2017; Zhang et al., 2019).

However, in the era of modernization Warehouse Management Systems have also been equipped with various advanced features such as barcode scanners, email, and other technologies.

The main purpose of the Warehouse Management System is to control movements in the supply chain, such as receiving goods, stock management, packing and shipping goods. Today many warehouse systems still use the classic warehouse management system, where input from the end user is the main determinant for the resulting decision. This can cause many problems if applied to national-scale companies that require accuracy, accuracy, and precision in supply chain management (Pulungan et al, 2013).

Warehouse Management System is equipped with this advanced technology in order to be a provider of computerized procedures so that it is able to handle various receipts and also receipts of goods automatically (Delfmann et al., 2018; Ritola et al., 2021; Sitikarn & Kankaew, 2021; Wei & Sheng, 2018; Zahraee et al., 2022).

Inventory control is an activity that must be carried out in a warehouse. The purpose of controlling goods is to maximize goods in the warehouse so that the movement of goods, storage of goods, inbound and outbound in goods is more orderly and more effective and efficient.

PT. Shippindo Logistics Technology is a company engaged in warehousing and transportation management services. The company also makes improvements and developments to warehouse or shipping infrastructure. And also always make continuous innovations to suit needs.

PT. Shippindo Logistics Technology serves several customers in finishing good storage. The warehouse has cooling area facilities, static racks, and various other equipment. As for some of the problems found in warehousing services, namely problems in searching for items or goods, differences in goods when doing Stock Opname, and problems placing goods that are less regular in the warehouse shelf area.

This problem spurs delays for other operational process systems that are running, which will be very visible when the goods sought have a large quantity or volume. In addition, it will cause accumulated delays in customer service of PT. Shippindo Logistics Technology which can cause delays, especially during outbound, will ultimately have an impact on customers. In the warehouse management process, the placement of goods is also still irregular, then the addition and subtraction of goods when inbound and outbound also still use a manual system, often the difference in goods when doing stock-taking which is very detrimental to the company because the activities carried out in the warehouse are still manual (Choi & Luo, 2019; Moon et al., 2018; Palsule-Desai, 2015; W. W. Wang et al., 2022; X. Wang et al., 2015).

The effectiveness of the goods storage system depends on several internal and external characteristics. Internal characteristics include several functions which include storage capacity, ease of access to storage locations, complexity of internal structures and level of information technology. While external characteristics such as the type of product, the number of products, and the amount of product inventory to be stored, from the type of flow of goods in and out (Bai et al., 2022; Li et al., 2020; Saric et al., 2021; Suryawanshi & Dutta, 2022; Zheng & Negenborn, 2014).

The process of retrieving products before the implementation of the Warehouse Management System (WMS) is to only use a checker form. There is one way to take products based on ED (Expired Date) only refers to oral coordination between shifts regarding the location of products whose ED (Expired Date) is faster. Conditions like this easily cause misunderstandings if only coordinate verbally.

To maintain inventory accuracy in the finished goods warehouse, physical calculations are routinely carried out on the products in the warehouse. This calculation is done every day and also routinely once a month. Because this inventory calculation compares inventory data recorded in the SAP (Systems Applications and Products) system with physical products in the warehouse. This calculation compares the number of product items, the number of items per pallet, the placement of products in the storage bin, and the batch of each product. This calculation can be done by an inputter, verifier, and warehouse head where the verifier is not from warehouse staff.

The phenomenon that occurs today is that there is a decrease in the storage time of goods at PT SHIPPINDO Teknologi Logistik in the first 3 months of 2022, there is always a loss because it does not use a Warehouse Management System so that the time needed takes a long time for the storage of goods that are currently carried out still require the right place and management so that there is no time bottleneck in the warehouse of PT SHIPPINDO Teknologi Logistik.

B.Literature Review

1.Logistics Management

Logistics Management is the management of goods, both government and company goods or individual goods with the aim that their use/use is carried out effectively and efficiently so that it can provide the maximum benefit or provide maximum results to the owner of the goods.

In managing one's goods, managers must be good at using everything related to the management or managing of goods such as, management elements, principles and management norms in carrying out logistics management functions.

Logistics management traditionally has a very narrow scope where it is only implemented in the lowest order of people's lives. Furthermore, logistics in its development is influenced by globalization which leads to changes that include two things (Kusumastuti, 2014: 5)

Logistics is part of supply chain management which consists of planning, implementing, and controlling effectively and efficiently the flow of goods in and out as well as the storage of goods, services, and information related to the point of origin and point of consumption in order to meet customer needs.

Logistics spurs the inflow of outflows from the storage of goods, services and information between organizations (Gundlach, 2006).

Logistics Management is an application of management principles in logistics activities with the aim that the movement of personnel and goods can be carried out effectively and efficiently.

Logistics Management is also part of the supply chain management process which has an important function in planning, implementing, and controlling the effectiveness and efficiency of storage and flow of goods, services and information, to the point of consumption to meet consumer needs. From this explanation, we can conclude that Mogistics Management is all activities related to the management of logistics, suppliers, among company facilities and to customers (Kusumastuti, 2014: 5).

Another definition of logistics according to (Christopher in Handayani, 2011) is a process of strategic management in an effort to achieve the acquisition, movement and storage of material parts and final supplies, also related to the flow of information, through the organization and its marketing channels in several ways to get profits. certain in the future that is maximized through effective order fulfillment costs. Logistics spurs the inflow of outflows from the storage of goods, services and information between organizations (Gundlach, 2006).

Logistics Management is an application of management principles in logistics activities with the aim that the movement of personnel and goods can be carried out effectively and efficiently. storage and flow of goods, services and information, up to the point of consumption to meet consumer needs.

From the description of the opinions of the experts above, it can be concluded that logistics management is a way of managing goods, be it government property or company property (legal entity) and / or individual property with the aim that its use or use is carried out effectively and as efficiently as possible so that it can provide benefits to the owner of the goods. Therefore, in making logistics planning must be with seriousness and caution so that mistakes do not occur and in exploring the science of logistics management must be serious.
Without logistical management, a job will become hampered and disrupted work activities such as slowing down work and even resulting in the failure of a job.

2.Warehouse

a. Understanding Warehouse

W arehouse (warehouse) is a place, room or building thathas an important role in a production system, so proper arrangement is needed for the place, room or building so that it can function optimally.
Warehouse is a storage function of various types of products (inventory storage units) that have large and small storage units in the period when production is produced by the factory (seller) and when products are needed by customers or work stations in production facilities.

While warehousing is not only a storage activity for goods, but the process of handling goods starting from receiving goods, recording, storage, maintenance, labeling to the process of shipping goods. Good conditions and arrangements in the warehouse are expected to avoid company losses, minimize costs and speed up operations and services in the warehouse.

Therefore, the warehouse must be designed so that materials or goods can fill the maximum space capacity both vertically and horizontally. Utilization of space capacity that is not maximal Can cause many products that are not accommodated in the warehouse (warehouse) so that it can cause many losses for the company, especially in inventory costs, warehouse rentals and transportation costs.

METHOD

Research is one of the important factors in efforts to solve a problem. So that research will produce a solution to solve the problem. In order for research to run well, appropriate research methods are needed.

As for here, the method or type of research used in this study is quantitative research methods. Quantitative research is a type of research that basically uses a deductive-inductive approach.

This approach is taken from a theoretical framework, expert ideas, and previous researchers' understanding based on their experience, then developed into problems and solutions proposed to obtain justification (verification) or assessment and evaluation in the form of empirical data support in the field.

Quantitative research methods can also be interpreted as research methods based on the philosophy of positivism, which is used to examine related populations or samples, data collection using research instruments, quantitative / statistical data analysis, with the aim oftesting hypotheses that have been set. This method is referred to as the positivistic method because it is based on the philosophy of positivism. This method is referred to as the scientific method because it has proposed scientific rules, namely concrete / empirical, objective, measurable, rational and systematic. This method is called quantitative method because the research data is in the form of numbers and analysis using statistics.

According to Sugiyono (2013: 13) quantitative research methods can be interpreted as research methods based on the philosophy of positivism, used to examine certain populations or samples, this sampling technique is generally carried out randomly, data collection using research instruments, quantitative or statistical data analysis with the aim of testing hypotheses that have been set. This research uses a descriptive approach with the aim of describing the object of research or the results of the research.

Meanwhile, according to Margono, quantitative research is a study that uses more hypothesis verification logic which starts with deductive thinking to derive hypotheses and then conducts field testing and conclusions or hypotheses are taken based on empirical data.

Research is a scientific way that aims to collect data with certain purposes and uses. Through an activity to find, record, formulate and analyze until compiling the report. So the research method can be interpreted as a scientific way to obtain valid data with the aim of being found, proven, and developed knowledge so that in the end it can be used to understand, solve, and anticipate problems in the business field.

RESULT AND DISCUSSION

Research Resultsn

1. Respondent Overview

General data obtained directly by the respondent concerned with the aim of identifying the respondent. The respondent data in this study was taken from Online buyers of *PT*.

*SHIPPINDO Technology*with a total of 100 people using the Slovin formula

Table 1. Description of Respondent Data

Respondents	Sum	Percentage
Distributed questionnaires	100	100%
Questionnaires that do not return	0	0
Questionnaires that come back	0	0

cannot be processed		
Questionnaires that can be processed	100	100%

Based on the table above, it is explained that the questionnaires distributed to respondents were 100 questionnaires with a collection rate of 100%, which means that all questionnaires are returned and can be processed. In this study with the characteristics of respondents include: gender, age, last education, and occupation can be seen from the following tables:

Based on gender, of the 30 respondents who were female as many as 6 people with a percentage of 20% and the rest were male respondents as many as 24 people or 80%.

Discussion

In this study, there were 100 respondents who had participated in filling out a questionnaire aimed at analyzing the effect of *the Warehouse Management System* on *Goods Storage* at *PT. SHIPPINDO Technology i*which includes *a Warehouse Management System* for *Storage of Goods*. Data collection is carried out by distributing questionnaires to employees at *PT. SHIPPINDO Technology* After conducting instrument quality tests, then researchers test that the data collected is normally distributed, After passing the classical assumption test, then researchers conduct hypothetical tests and simple linear analysis and good correlation coefficients with the following conclusions:

Based on the results of the hypothesis test, it was found that attitude partially affects consumer buying interest significantly and positively. This can be seen from the results of the t-test stating that the p-value is smaller than the significance value (0.000 < 0.05). In addition, in the attitude variable of the calculated value of 4.332> the ttable value of 2.048, the *Warehouse Management System* variable was declared to have a positive effect. Against the variable storage of goods, a hypothesis can be concluded that is formed to analyze the influence of the variable.

The Warehouse Management System applied by PT SHIPPINDO Teknologi is good in storing goods. The results of this study are in line with Yan Herdianzah, the 2022 industrial engineering journal entitled The Effect of the Implementation of the Warehouse Management System on Warehouse Performance at PTP Nusantara XIV PerseroIt is known that the sig value for the influence Before the application of WMS on Warehouse Performance is 0.900 > 0.05 and the calculated t value of 0.130 < 2.365 so that it can be concluded that H1 is rejected which means there is no influence Before the Application of WMS on Warehouse Performance. It is known that the sig value for the effect of After WMS Implementation on Warehouse Performance is 0.008 < 0.05 and the value of t. Based on the output above, it is known that the significance value for the influence Before the implementation of WMS and After simultaneous application of Warehouse Performance is 0.03 < 0.05 and the value of F is calculated at 14,327 > 4.46 so that it can be concluded that H3 is accepted which means the influence Before the

implementation of WMS and after the simultaneous implementation of WMS on Warehouse Performance.

CONCLUSION

Based on the results of research and discussion in the previous chapter, namely chapter IV, the following conclusions can be drawn There is an influence and significance of the Warehouse Management System variable on Goods Storage by 40.1% on the other hand, 59.9% of Goods Storage is influenced by other factors.

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