



## The Influence of Implementation Warehouse Management System and Competence on Employee Performance of Logistics at PT. Bumimulia Indah Lestari Cikarang

Ririn Uke Saraswati <sup>1</sup>, Amin <sup>2</sup>

<sup>1,2</sup> STIE Ekadharma Indonesia, Bekasi, Indonesia

Email : [ririnukesaras@gmail.com](mailto:ririnukesaras@gmail.com)<sup>1\*</sup>, [aminbudiman024@gmail.com](mailto:aminbudiman024@gmail.com)<sup>2</sup>

**Abstract.** This research aims to determine the influence of the Implementating Warehouse Management System (WMS) and Competence on the Employee Performance of PT Bumimulia Indah Lestari. The population of this research is all employees in the logistics department, totaling 60 employees.. The sampling technique used is in this research was the census sampling technique which obtained 60 samples. Research data was obtained from questionnaires distributed to respondents. The research method is quantitative using the SPSS 25 software. The research result show that WMS has a partial effect on employee performance, indicated by a T-value of 5.010 > T-table of 1.671 with a significance of 0.00 < 0.05. Competence also has a partial effect on employee performance, with a T-value of 10.853 > T-table of 1.671 and a significance of 0.00 < 0.05. Simultaneous testing shows an F-value of 93.698 > F-table of 3.16 with a significance of 0.00 < 0.05, meaning that the independent variables of WMS and Competence significantly affect the dependent variable of employee performance simultaneously. The coefficient of determination is 0.767 or 76.7%, while the remaining 23.3% is explained by other variables not included in this research model.

**Keywords :** Warehouse Management System, Competence, Employee Performance

### 1. INTRODUCTION

In the era of globalization and increasingly fierce business competition, companies are required to enhance their operational efficiency and effectiveness, including in terms of logistics management. Good logistics management can provide a competitive advantage for companies in terms of timely product delivery, increased customer satisfaction, and reduced operational costs. One important aspect of logistics management is warehouse management. Warehouses serve as centers for the storage and distribution of goods entering and leaving the company. To improve warehouse efficiency and performance, many companies upgrade their tools and systems to support daily activities to achieve optimal targets and performance (Sumekar, 2022). A company deemed healthy and performing well will be reflected in its efficiency, effectiveness, and economic aspects while efficiency is assessed based on the ratio of output to input, and effectiveness is judged by the amount of output contributed to the company's objectives (Sumekar ,2022).

One of the factors that influence employee performance is the implementation of a Warehouse Management System. Warehouse Management System (WMS) is a cloud-based software application widely used by companies that facilitates manufacturing, retail, and distribution businesses to monitor warehouse activities in real-time. The implementation of WMS allows companies to conduct better

data analysis, which can be used to enhance employee performance. As indicated by research conducted by Ahmad Phadil et al. (2023), Silalaho T.Y et al (2023), and Herdianzah.Y et all. (2022).

PT. Bumimulia Indah Lestari is one of the developing companies operating in the field of plastic packaging, material handling, and plastic components, with several plants. The company's main plant, or Plant 1, is located in Cikarang, Plant 2 is in Merak, Plant 3 is in Gresik, East Java, and Plant 4 is in Marunda. It is one of the companies that utilizes a Warehouse Management System application in its logistics management operations.

The company has implemented Standard Operating Procedures in the operational Warehouse Management System. By following these standards, it is expected that employees can ensure consistency in daily operations, which is essential for maintaining efficiency and reliability, helping to ensure that logistical tasks are performed accurately and consistently. This includes processes such as data scanning, inventory management, and product shipping. However, based on field observations, it was found that many data entries were not scanned correctly or not scanned at all. This can lead to delays and inaccuracies in product delivery and may result in stock imbalances in the warehouse or other storage locations. Items not registered in the system may be considered as unavailable stock, while items that are actually out of stock remain listed. This can disrupt inventory management processes and create difficulties in meeting customer demand.

Another factor that influences employee performance is competence. As a company that aims to advance its human resource competencies, the company provides training related to understanding the workflow processes in warehousing, which includes the use of work tools, including the use of WMS applications to support work in the warehouse. Employee competence is the ability to work that encompasses aspects of knowledge, skills, and work attitudes that align with the standards set by the company (Mangkunegara, 2017). Good employee competence will have a positive impact on the company's performance. This is supported by research conducted by Prayogi et al. (2019) and Sania Romadhona (2023). However, the phenomenon observed in the field shows that employees still lack understanding in executing warehouse operational processes, such as during the process of unloading goods to be sent to customers. It has been found that items have already exited the shelves but have not yet been scanned to the shipping

location; this can lead to discrepancies with sales data. If this continues to happen, it could result in losses for the company.

This research has several objectives, namely : 1) testing the influence of Warehouse Management System on employee performance, 2) testing the influence of employee competence on employee performance, 3) testing the influence of implementation Warehouse Management System and employee competence on employee performance.

## **2. LITERATURE REVIEW**

### **Warehouse Management System (WMS)**

Warehouse Management System consists of three words, namely Warehouse, which means a place that functions to store various kinds of goods both in terms of raw materials that will be used for the production process to finished goods that are ready to be sent to customers. Then the second word is management which means the process of organizing, managing, managing human resources, up to controlling in order to achieve the goals of an activity that is needed both personal and business needs. While the third word, System, is a set of elements that are combined from one and the other for a common purpose. The key elements of the Warehouse Management System include: (1) Receipt of goods (2) Put away or placement of goods (3) Inventory management (4) Order processing and picking of goods (5) Preparation for delivery of goods. (Annisa Kesya Garside, 2017).

Warehouse Management System is a subsystem that assists in managing products that flow through facilities in the logistics network and are stored in these facilities (Widiyanto in Prasidi and Lesmini, 2019). Meanwhile, according to (Wiyoko in Dewi I.K, 2017) Warehouse Management System (WMS) is a system used to manage warehouse activities, such as incoming stock, stock storage and outgoing stock. The Warehouse Management Systems are specialist software that improves all processes taking place inside the warehouses. They are of great significance in the enterprises that serve the daily large number of varied shipments, originating from many suppliers and directed at many recipients, where a high complexity of processes occur, as well as the necessity to monitor them (Wicki L, 2020)

### **Competence**

Competence is the basic foundation of people's characteristics and identifies ways of behaving and thinking, equalizing situations, and supporting for a long enough

period of time and it is said that competence is a key determining factor for a person in producing excellent performance (Wibowo,2017). Competence is knowledge and experience in the workplace that is passed or in other words, the greater the knowledge and experience he has, so that the employee becomes competent in terms of his work and causes better performance (Darmawati et all, 2021). The employee performance is the ability to achieve job requirements, where a work target can be completed at the right time or does not exceed the time limit provided so that the goals will be in accordance with company morals and ethics. Thus the performance of employees can contribute to the company (Herwina.Y , 2022) .Meanwhile, according to (Sutrisno, 2017) competence as an ability based on skills and knowledge based on work attitudes and their application in carrying out tasks and work in the workplace which refers to the specified work requirements. Competency indicators include; (1) Skills, (2) Knowledge, (3) Social Role, (4) Self Image (5) Attitude (Wibowo, 2017).

### **Employee Performance**

Performance is the quality and quantity of work achieved by an employee in carrying out his duties in accordance with the responsibilities given. This means that an employee who works expends his energy and mind in carrying out work in the hope that what is done can reach the target both in quality and quantity (Mangkunegara, 2017). Meanwhile, according to (Kasmir, 2019) that performance is the result of work and work behavior that has been achieved in completing the tasks and responsibilities given in a certain period, both in daily targets, weekly targets and even targets in one month. Thus, good performance is the result of work obtained legally, morally, and ethically, and is able to support the achievement of organizational goals in accordance with the authority and responsibilities of each individual or group in the organization. Employee performance indicators are: (1) Quality of work (2) Quantity of work (3) Time (4) Cost emphasis (5) Supervision (6) Relations between people (Mangkunegara, 2017)

### **The Relationship Between Warehouse Management System (WMS) to Employee Performance**

Warehouse Management System (WMS) as one of the supporting factors to improve employee performance and employee productivity. A company will be able to improve the performance and productivity of its employees, if it is able to implement the right warehouse management system. This system is able to provide information to employees about what work they should prioritize when in the warehouse. In accordance

with the results of previous research conducted by Ahmad Padhil, et al., (2023), T.Y Sihaloho and Nurul Hidayat (2023).

H1. Warehouse Management System has a positive effect on Employee Performance

**The Relationship Between Competence to Employee Performance**

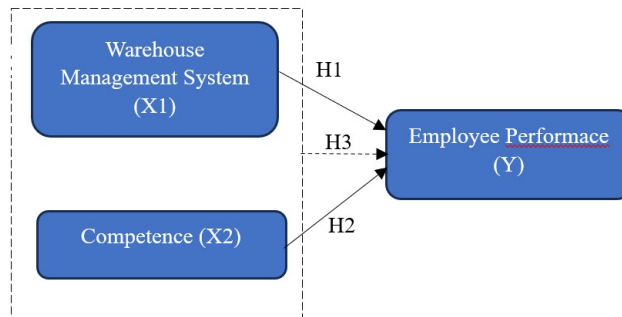
Competence refers to the combination of knowledge, skills and attitudes possessed by an employee. The higher the level of competence, the more likely it is that the employee will be able to carry out the task properly and achieve the expected results. As research conducted by Sania Romadhona. (2023), Abidin DZ,et all (2022)

H2. Competence has a positive effect on Employee Performance

**The Relationship Between Warehouse Management System (WMS) and Competence To Employee Performance**

A good Warehouse Management System (WMS) will provide accurate and timely information, while competent employees will be able to understand and use the information properly to complete their tasks effectively. The combination of an efficient Warehouse Management System (WMS) and competent employees will create an organized and productive work environment, where workflows are smooth and errors are minimized. Competent employees will be able to make the most of the WMS, allowing them to optimize available resources and achieve higher performance. A complementary WMS and employee competencies will create a strong synergy in improving productivity, efficiency, and the overall quality of employee performance. Thus, the existence of a reliable WMS and competent employees are important factors that are interrelated in improving employee performance.

H3. Warehouse Management System and Competence have a positive effect on Employee Performance.



Picture 1. Conceptual Model

### 3. METHODS

This research was conducted in February - July 2024. This type of research was conducted using quantitative methods (Sugiyono, 2019) is a systematic scientific study of parts and phenomena and the quality of their relationships. The research was conducted at PT Bumimulia Indah Lestari Bekasi on Jl. Jababeka XVI No.65A, Pasirgombong, Kec. North Cikarang, Bekasi Regency, West Java 17530. Population is the whole of the object, the population studied was employees in the logistics employees of PT Bumimulia Indah Lestari, totaling 60 employees. The sampling technique used is nonprobability sampling with the technique taken, namely saturated sampling (census). Data was collected using the distribution of questionnaires to logistics employees of PT Bumimulia Indah Lestari, totaling 60 employees. The research instrument before being distributed to respondents was tested with validity and reliability tests. Respondent demographics are presented in several categories, such as gender, age and education. Respondent demographics can be seen in table 1.

**Table 1. Demografi Respondent**

Variable	Frequence	%
<b>Gender</b>		
Male	55	91,70%
Female	5	8,30%
<b>Age</b>		
20-25	3	5%
26-30	9	15%
< 30	48	80%
<b>Education</b>		
Junior high school	-	-
Senior high school	48	80%
Diploma (D1/D2/D3)	5	8,30%
Bachelor (S1)	6	10%
Master (S2)	1	1,70%

Source Primary Data 2024

### 4. RESULTS

#### Validity Test And Reliability Test

The validity test is a procedure to ascertain whether the questionnaire to be used to measure the research variables is valid or invalid, using the Product Moment

correlation of each question item. Provided that if  $r$  count  $>$   $r$  table, it is declared valid. The validity test was carried out on a sample of 30 respondents with  $r$  table 0.361.

**Table 2. Validity Test**

Variabel	Nilai r hitung	Nilai r tabel	Keputusan
<b>X1. Warehouse Managemet System</b>			
X1.1	0,711	0,361	Valid
X1.2	0,914	0,361	Valid
X1.3	0,837	0,361	Valid
X1.4	0,739	0,361	Valid
X1.5	0,781	0,361	Valid
X1.6	0,838	0,361	Valid
X1.7	0,817	0,361	Valid
X1.8	0,796	0,361	Valid
X1.9	0,834	0,361	Valid
X1.10	0,841	0,361	Valid
X1.11	0,888	0,361	Valid
X1.12	0,947	0,361	Valid
X1.13	0,847	0,361	Valid
X1.14	0,947	0,361	Valid
X1.15	0,851	0,361	Valid
<b>X2. Competence</b>			
X2.1	0,759	0,361	Valid
X2.2	0,756	0,361	Valid
X2.3	0,796	0,361	Valid
X2.4	0,783	0,361	Valid
X2.5	0,798	0,361	Valid
X2.6	0,748	0,361	Valid
X2.7	0,775	0,361	Valid
X2.8	0,803	0,361	Valid
X2.9	0,753	0,361	Valid
X2.10	0,703	0,361	Valid
X2.11	0,728	0,361	Valid
X2.12	0,796	0,361	Valid
X2.13	0,76	0,361	Valid
X2.14	0,71	0,361	Valid
X2.15	0,705	0,361	Valid
<b>Y. Employee Performance</b>			
Variabel	Nilai r hitung	Nilai r tabel	Keputusan

Y.1	0,759	0,361	Valid
Y.2	0,717	0,361	Valid
Y.3	0,774	0,361	Valid
Y.4	0,7	0,361	Valid
Y.5	0,795	0,361	Valid
Y.6	0,778	0,361	Valid
Y.7	0,81	0,361	Valid
Y.8	0,73	0,361	Valid
Y.9	0,835	0,361	Valid
Y.10	0,777	0,361	Valid
Y.11	0,878	0,361	Valid
Y.12	0,801	0,361	Valid
Y.13	0,843	0,361	Valid
Y.14	0,772	0,361	Valid
Y.15	0,821	0,361	Valid

A reliable instrument is an instrument that when used several times to measure the same object, will produce the same data (Sugiyono, 2019) with the following assessment criteria (a) If the Cronbach alpha value  $(\alpha) > 0.6$  then the questionnaire is reliable (b) If the Cronbach Alpha  $(\alpha)$  value  $< 0.6$  then the questionnaire is not reliable.

**Table 3. Reliability Test**

Variabel	Cronbach's Alpha	Keterangan
Warehouse Managent System (X1)	0,968	Reliabel
Kompetensi (X2)	0,948	Reliabel
Kinerja Karyawan (Y)	0,958	Reliabel

Based on the test results in table.3 with SPSS software, it appears that the Cronbach's Alpha value obtained on all variables is  $> 0.60$  so it can be concluded that all variables are said to be reliable because they have met the requirements for the Cronbach's Alpha value  $> 0.60$ .

### **Kolmogorov Smirnov Test**

This test aims so that in this study it can determine whether or not there is a normal distribution between the independent variable and the dependent variable or both. The basis for decision making for the Kolmogorov-Smirnov Z (1-Sample K-S) statistical test is (a) If the Asymp.Sig value. (2-tailed) less than 0.05 or 5% means that the residual data is not normally distributed (b) If the Asymp.Sig value. (2-tailed) more than 0.05 or 5% means that the residual data is normally distributed.



**Table 4. Kolmogorov Smirnov Test**  
**One-Sample Kolmogorov-Smirnov Test**

		Unstandardized Residual
N		60
Normal Parameters <sup>a,b</sup>	Mean	0
	Std. Deviation	3,14050296
Most Extreme Differences	Absolute	0,099
	Positive	0,067
	Negative	-0,099
Test Statistic		0,099
Asymp. Sig. (2-tailed)		,200 <sup>c,d</sup>

Based on table 4, the Kolmogorov Smirnov test results obtained a Sig value. (0.200) > alpha (0.05) so it can be concluded that the regression model fulfills the assumption of normality.

#### Multiple Regression Analysis Test

Data analysis using multiple linear regression testing to answer whether the Warehouse Management System (X1) and Competency (X2) variables affect the employee performance variable (Y).

**Table 5. Multiple Regression Analysis Test**

Model		Coefficients <sup>a</sup>				
		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	6,634	4,864		1,364	,178
	Warehouse Management System	,537	,078	,531	5,010	,000
	Kompetensi	,865	,080	,852	10,853	,000

a. Dependent Variable: Kinerja Karyawan  
 Sumber : data diolah peneliti, 2024

$$Y = 6,634 + 0,537X1 + 0,865X2 + e$$

- 1) The constant value of 6.634 means that if the Warehouse Management System (WMS) (X1) and Employee Competence (X2) variables are equal to zero, then Employee Performance (Y) is 6.634.
- 2) The beta coefficient value on the Warehouse Management System (WMS) (X1) variable is 0.537, which means that any change in the Warehouse Management System (WMS) (X1) variable by one unit will result in a change in the Employee Performance (Y) variable by 0, 537. Conversely, a one-unit decrease in the Warehouse Management System (WMS) (X1) variable will reduce the Employee

- Performance (Y) variable by 0, 537 assuming the value of the other variables is constant.
- 3) The beta coefficient value on the Employee Competency (X2) variable is 0.865, which means that any change in the Employee Competency (X2) variable by one unit will result in a change in Employee Performance (Y) of 0.865 units. Conversely, a one-unit decrease in Employee Performance (X2) will reduce Employee Performance (Y) by 0.865 with other assumptions being constant.

### Simultaneous F Test

The F test is also called variance analysis. The F test was conducted to see the effect together on the dependent variable significantly. To find out the results of this f test, namely by comparing the value of F count and F table. If  $F_{count} > F_{table}$ , then  $H_0$  is rejected and  $H_a$  is accepted and vice versa. In this study, the F table value is 3.16 with a probability value of 0.05. The results of this f test are explained in the table below.

**Table 6. Simultaneous F Test**

ANOVA <sup>a</sup>						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1913,097	2	956,549	93,698	,000 <sup>b</sup>
	Residual	581,903	57	10,209		
	Total	2495	59			

a. Dependent Variable: Kinerja Karyawan

b. Predictors: (Constant), Kompetensi , Warehouse Management System

Based on the test results table 6, it can be seen that the calculated F value is greater than the F table value ( $93.698 > 3.16$ ). Thus the warehouse management system and competency variables simultaneously have a significant influence on the performance of PT Bumimulia Indah Lestari employees.

### Determination Coefficient Test

The coefficient of determination ( $R^2$ ) is used to determine the presentation of changes in the independent variable (Y) caused by the independent variable (X).

**Table 7. Determination Coefficient Test**

Model Summary <sup>b</sup>				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,876 <sup>a</sup>	0,767	0,759	3,195

a. Predictors: (Constant), Kompetensi , Warehouse Management System

b. Dependent Variable: Kinerja Karyawan

Based on the test results in table 7 above, the coefficient of determination is 0.767 or 76.7%, while the remaining 23.3% is explained by other variables not included in this research model.

## 5. DISCUSSION

Based on the test results and data processing analysis, the following discussion can be carried out:

### a) The Influence of Warehouse Management System on Employee Performance

Partially, the results showed that the Warehouse Management System variable has a positive and significant influence on the performance of Logistics employees of PT Bumimulia Indah Lestari Cikarang. This condition can be seen from the results of the analysis obtained by the Warehouse Management System variable coefficient which has a positive value of 0.537 and a significance of 0.00 (less than 0.05). That the Warehouse Management System (X1) variable has a calculated T value greater than the T table ( $5.010 > 1.671$ ) with a significant level on employee performance of 0.00 smaller than 0.05 ( $0.00 < 0.05$ ) means that H0 is rejected and H1 is accepted and this study proves the first hypothesis (H1).

### b) The Influence Of Competence on Employee Performance

Partially, the results showed that the employee competency variable had a positive and significant effect on the performance of Logistics employees of PT Bumimulia Indah Lestari Cikarang. This condition can be seen from the results of the analysis obtained a variable coefficient of competence which has a positive value of 0.856 and a significance of 0.00 (less than 0.05). That the competency variable (X2) has a calculated T value greater than the T table  $10.853 > 1.671$  with a significant level on employee performance of 0.00 smaller than 0.05 means that H0 is rejected and H1 is accepted and this study proves the second hypothesis (H2).

### c) The Influence of Warehouse Management System and Competence on Employee Performance

Simultaneously, the results showed that the warehouse management system variables and employee competencies had a positive and significant effect on the performance of PT Bumimulia Indah Lestari Logistics employees. This condition can be seen from the results of the analysis obtained by the coefficient of the competency variable which has a positive value of 6.634 and a significance of 0.00 (less than 0.05). The calculated F value is greater than the F table  $93.698 > 3.16$  with a

significant level of 0.00 smaller than 0.05, meaning that H0 is rejected and H1 is accepted and this study proves the second hypothesis (H3).

## **6. CONCLUSION**

Based on the results of the discussion of data analysis from 60 respondents as part of testing the hypotheses proposed in this study, it can be concluded:

- 1) Warehouse Management System variables have a positive and significant effect on the performance of PT Bumimulia Indah Lestari Logistics employees. This means that the better the system that is implemented, the better the performance of its employees.
- 2) Employee competency variables have a positive and significant effect on the performance of Logistics employees of PT Bumimulia Indah Lestari Cikarang, meaning that the better the competence of employees, the higher the performance of Logistics employees of PT Bumimulia Indah Lestari.
- 3) Warehouse Management System variables and employee competence simultaneously have a positive and significant effect on employee performance, meaning that if PT Bumimulia Indah Lestari Cikarang increases the application of the Warehouse Management System and employee competence together, employee performance will also increase.
- 4) Based on the results of the coefficient of determination test, the effect of the two independent variables, namely the warehouse management system (X1) and competence (X2) is 76.7%, and the remaining 23.3% is influenced by other variables that are not in this study.

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