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THE EFFECT OF WAREHOUSE LAYOUT ON WORK PRODUCTIVITY AT PT PERKASA PRIMARINDO

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Abstract:
The background of this research is the ineffective warehouse layout and the need for more utilization of storage space capacity in the warehouse; it affects operational activities at the PT Perkasa Primarindo warehouse, which results in less than optimal work productivity. This study aims to determine how much influence the warehouse layout has on work productivity at PT Perkasa Primarindo. This research uses quantitative research methods. The population in this study were PT Perkasa Primarindo's warehouse employees, as many as 25 people, and the sample in this study were 25 employees. Sampling in this study used the Non-Probability Sampling technique. The results showed that the warehouse layout variable could affect work productivity by 75.4%, and the remaining 24.6% is influenced by other variables not included in the study. At the same time, the t-test obtained t-count values more significant than the t-table (8.388 > 2.068) with a significant level of work productivity so that it can be concluded that H0 is rejected and H1 is accepted, which means that the warehouse layout variable has a significant effect on work productivity variables.

Keywords: Warehouse, Warehouse Layout, Work Productivity.
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INTRODUCTION

The existence of population growth and the development of science and technology provide opportunities for producers to produce goods in large quantities and varied. Many companies compete to produce quality products and create various products. This situation can affect the viability of the business initiated by the actors involved. One thing that affects the company's survival is warehouse management because the warehouse helps accommodate goods produced before being distributed to customers. The warehouse is closely related to inventory and is directly related to sales. Thus, good warehouse management is expected to help companies compete with existing competitors.

In a company, a product or finished goods produced through the production process must be maintained appropriately until they reach the hands of consumers. For this reason, the company needs a warehouse to store production results so that the product can be maintained safely. Lambert (2011) says that a warehouse is part of a company's logistics system that stores products (raw materials, parts, goods-in-process, and finished goods) at and between the origin and the point of consumption (point-of-consumption), as well as providing information to management regarding the status, condition, and disposition of stored items.

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A warehouse in a company indicates that the production results are large enough so that the flow of goods in and out and the stock of goods must be controlled. Warehousing stores goods produced in a certain amount and timeframe, which are then distributed to the destination location based on consumer demand.

In warehouse management for a company, the vital thing is layout management, where the layout has many strategic impacts on the company and can affect the company in terms of capacity, process, flexibility, cost, quality of the work environment, and so on. According to Wignjosoebroto (2003), the layout is a primary foundation in the industrial world. A good layout in the warehouse will provide efficient flow, shorter distances for moving goods, shorter transportation times, and minimum moving costs. In the warehouse layout, it is necessary to pay attention to effectiveness and efficiency in entering and releasing goods. This can be achieved by arranging goods by making optimal use of the available space. In addition, positioning, placement, and grouping of goods are also needed so that removing goods from the warehouse can be done quickly.

PT. Perkasa Primindo is one of the companies located on Jl. Setia Mekar Km. 38-39 Tambun - East Bekasi. This company is engaged in the production of ceramic tiles, and later the products produced by the company will be distributed to domestic areas in Indonesia. PT. Perkasa Primindo has produced ceramic tiles of 20 cm x 40 cm; 25 cm x 25 cm; 25 cm x 40 cm; 40 cm x 40 cm with embossed and flat surface types. These products are stored in a warehouse before being distributed to consumers—a warehouse for storing finished goods at PT. Perkasa Primindo has a storage capacity of 80,000 m2.

Table 1. Product Size, Type, Brand, and Surface Type.

SIZE	TYPE	BRAND	SURFACE TYPE
20 cm x 40 cm	Ancelotti Specta White	Octagon	Emboss
	Gomez Series	Octagon	
25 cm x 25 cm	Starla Series	Valencia	Emboss
	Milano Series	Mandalay	
	Versace Series	Octagon	
25 cm x 40 cm	Adena Series	Valencia	Emboss dan Flat
	Selena Series	Artemis	
	Adenium Series	Mandalay	
40 cm x 40 cm	Maldini Series	Octagon	
	Gofasa Series	Valencia	
	Benelli Series	Mandalay	Emboss dan Flat

Source: Warehouse Staff of PT. Mighty Primindo

In this case, the company needs to know how effective the warehouse layout management is by measuring productivity. Because to be able to know the success of the company, productivity is an essential determining factor. If productivity increases from time to time, the company will quickly achieve the goals that have been set. Hasibuan in Busro (2018: 340) says that productivity is the ratio between output (results) and input (input). Therefore, if productivity increases, it will increase the efficiency of time, materials, and labor as well as work systems and production techniques and increase the workforce's skills.

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Figure 1. Current Warehouse Conditions

Source: PT. Mighty Primindo

From the results of observations made by researchers, it can be seen that the current condition of the warehouse is ineffective and does not even match the existing warehouse layout, causing several problems such as the placement of manufactured goods not well organized, many products are placed haphazardly or are not following the size and type of product, as well as the placement of the product also changes. This causes many products to be tucked in or mixed with other types of products, making it difficult for workers and taking quite a long time to search for goods when loading and removing them. Furthermore, because the arrangement or placement of products is different from the type and size, conditions like this will make the warehouse very cramped and result in an inefficient process of moving goods and complicate warehouse operations during picking up or releasing goods. As a result, activities in the warehouse and the process of loading goods for delivery need to be improved.

Table 2. Total Production of Ceramic Tiles PT. Mighty Primindo

No.	Month	Production Amount	Type
1.	October	123.363	All Types
2.	November	94.340	All Types
3.	December	141.050	All Types
4.	January	112.930	All Types

Source: Warehouse Staff of PT. Mighty Primindo

Table 2 shows that data on the number of production products stored or entered in warehouses from October 2021 to January 2022 is unstable every month, so the management of warehouse layout and utilization of warehouse capacity could be more optimal and helps work productivity. Therefore, to determine how effective a company's warehouse layout management is, measuring productivity by adjusting the number of goods produced with the number of goods released in the warehouse is necessary. Based on the background above, the writer is interested in raising this problem so that the title "The Influence of Warehouse Layout on Work Productivity at Pt Perkasa Primarindo" is obtained.

According to Lucas Dwiantara and Rumsari (2014: 20), logistics management is a collection of activities such as planning, organizing, and supervising all procurement activities, recording,

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distribution, storage, and maintenance to support an organization's goals to be more effective and efficient.

METHODS

The research approach is divided into two, namely quantitative research and qualitative research. This study uses a quantitative research approach. The quantitative research method is a type of research whose specifications are systematic, planned, and structured from the start to the creation of the research design.

RESULTS AND DISCUSSION

Brief Company History. PT Perkasa Primarindo is one of the companies engaged in ceramics production in Bekasi Regency, located on Jl. Setia Mekar Km. 38 - 39 Tambun - East Bekasi. This company is one of the ceramic-producing companies that distributes its products to the domestic area of Indonesia.

In the beginning, before this company produced ceramics and changed its name to PT. Perkasa Primindo, in 1988 the company was established under the name PT. Perkasa Ruberindo with PMDN (Domestic Investment) status, located at Jalan Setia Mekar Km 38 - 39 Bekasi Timur - Jakarta. Then, on January 24, 1989, PT. Perkasa Ruberindo started its operations with the production of rubber gloves. However, considering that rubber gloves have yet to receive a positive response at the level of traditional and international markets, the management has begun to project an analysis of the transfer of business fields that are better for its development. After that, in 1992, PT. Perkasa Ruberindo changed its name to PT. Perkasa Primindo with a focus on ceramic production. And in 1993, PT. Perkasa Primindo has officially started ceramic production in the form of ceramic tiles.

Overview of Respondents. The general description of the respondents provides an overview of the characteristics of the respondents, who are all warehouse employees at PT. Mighty Primindo. In this study, the authors determined a sample of 25 respondents. Then, the authors distributed the questionnaires and gave them to n = 25 respondents who were warehouse employees at PT. Mighty Primindo. Based on the distribution of questionnaires, taking the questionnaires answered by the respondents can be seen in table 4.1 below:

Table 3. Number of Samples and Level of Questionnaire

Description	Total
Total distribution of 25 questionnaires	25
The total return of questionnaires 25	25
Number of questionnaires that were not returned 0	0
Respondent rate (rate of return) 100	100
Total Questionnaires that can be processed 25	25
Total Questionnaires that cannot be processed 0	0

Source: Data Processing Using SPSS version 26, 2022

Based on table 3, it is explained that the questionnaire was distributed to 25 respondents with a level of 100% means that the entire questionnaire is returned and can be processed. From the results of distributing the questionnaires, it was possible to obtain data regarding the characteristics of the respondents according to the gender of the respondent, age of the respondent, and length of time the respondent worked.

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Table 4. Respondents by Gender.

Gender					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	25	100.0	100.0	100.0

Source: Data Processing Using SPSS version 26, 2022

Based on table 4, it can be seen that the characteristics of respondents based on gender consist of 25 respondents, or 100% are male. This shows that all respondents are male.

Table 5. Respondents by Age

a.	Age				
b.		Frequency	Percent	Valid Percent	Cumulative Percent
c. Valid	20-30 Years	6	24.0	24.0	24.0
d.	31-40 Years	6	24.0	24.0	48.0
e.	>41 Years	13	52.0	52.0	100.0
f.	Total	25	100.0	100.0	

Source: Data Processing Using SPSS version 26, 2022

In table 5 above, it can be seen that the characteristics of respondents based on age consist of 24% for ages 20-30 years, as many as six respondents, 24% for ages 31-40 years, as many as six respondents, and 52% for ages > 41 years as many as 13 respondents. This shows that the majority of respondents based on age were aged > 41 years, namely 52%.

Table 6. Respondents Based on Length of Work

Length of work					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1-5 Years	12	48.0	48.0	48.0
	6-10 Years	5	20.0	20.0	68.0
	11-15 Years	2	8.0	8.0	76.0
	> 16 Years	6	24.0	24.0	100.0
	Total	25	100.0	100.0	

Source: Data Processing Using SPSS version 26, 2022

Table 6 shows that the characteristics of respondents based on length of service of employees are 48% for 1-5 years for 12 respondents, 20% for 6-10 years for five respondents, 8% for 11-15 years for two respondents, and 24% for > 16 years as many as six respondents. This shows that the highest number of respondents based on length of work, namely for 1-5 years, is 48%.

Descriptive Analysis Index analysis for the answers to each variable aims to describe the respondents' responses in this study, especially regarding the variables used in the study, namely the warehouse layout variable and the work productivity variable.

In this study, an analysis technique was used by multiplying the number of Likert scale weights by the number of respondents who chose specific answer categories for each correct question item. The results are summed up and totaled from all respondents and then compared with the interval scale listed in the research methodology chapter so that conclusions can be drawn.

a. Warehouse Layout Variable Descriptive (X)

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The warehouse layout variable on the researcher's questionnaire has four dimensions with eight questions. Warehouse layout variables are measured with the following dimensions:

1. Equipment and handling of materials or materials.

Table 7. Equipment used according to SOP (Company Operational Standards)

No	Alternative Answer	Frequency (F)	Percentage (%)	Weight (X)	□□X.F)	$M = \frac{\sum F(X)}{n}$
1	Strongly Disagree	0	0%	1	0	
2	Disagree	3	12%	2	6	$= \frac{93}{25}$
3	Neutral	5	20%	3	15	
4	Agree	13	52%	4	52	
5	Strongly Disagree	4	16%	5	20	$= 3{,}72$
	Total	25	100%		93	Description Fine

Source: Results of Data Processing and Research 2022

Based on the calculation table 7 above, it is explained that there were no respondents who strongly disagreed. Instead, there were three respondents, or 12%, who disagreed. Five respondents, or 20%, stated neutral, 13 respondents, or 52%, agreed, and four respondents, or 16%, stated strongly agree, so the average score of respondents' answers obtained for this question is 3.72, which is included in the scale of 3.41 - 4.20 with a good rating category.

Table 8. Selection of reliable and efficient equipment for material handling in the warehouse

No	Alternative Answer	Frequency (F)	Percentage (%)	Weight (X)	□□X.F)	$M = \frac{\sum F(X)}{n}$
1	Strongly Disagree	0	0%	1	0	
2	Disagree	5	20%	2	10	$= \frac{88}{25}$
3	Neutral	7	28%	3	21	
4	Agree	8	32%	4	32	$= 3{,}52$
5	Strongly Disagree	5	20%	5	25	
	Total	25	100%		88	Information : Fine

Source: Results of Data Processing and Research 2022

Based on the calculation, table 9 above explains that no respondents strongly disagreed. There were five respondents, or 20%, who disagreed, 7, or 28%, who stated neutral, 8 or 32%, who agreed, and 5, or 20%, strongly agreed, so the average score of respondents' answers obtained for this question is 3.52, which is included in the scale of 3.41 - 4.20 with a good rating category.

Table 9. Efficient use of space can facilitate activities in the warehouse

No	Alternative Answer	Frequency (F)	Percentage (%)	Weights (X)	□□X.F)	$M = \frac{\sum F(X)}{n}$
1	Strongly disagree	1	4%	1	1	

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2	Disagree	1	4%	2	2	
3	Neutral	8	32%	3	24	$= \frac{94}{25}$
4	Agree	8	32%	4	32	
5	Agree	7	28%	5	35	$= 3,76$
	Total	25	100%		94	Information: Fine

Source: Results of Data Processing and Research 2022

Based on the calculation table 9 above, it is explained that one respondent, or 4%, stated that they strongly disagreed. Therefore, there was one respondent, or 4%, who stated that they did not agree; 8 respondents, or 32%, who stated neutral; eight respondents, or 32%, who stated that they agreed; and seven respondents, or 28%, who stated that they strongly agreed so that the average score of respondents' answers obtained for this question is 3.76, which is included in the scale of 3.41 - 4.20 with a good rating category.

Tabel 10. Availability of space for each component

No	Alternative Answers	Frequency (F)	Percentage (%)	Weights (X)	□□X.F)	$M = \frac{\sum F(X)}{n}$
1	Strongly disagree	0	0%	1	0	
2	Disagree	5	20%	2	10	
3	Neutral	6	24%	3	18	$= \frac{91}{25}$
4	Agree	7	28%	4	28	
5	Agree	7	28%	5	35	$= 3,64$
	Total	25	100%		91	Information : Fine

Source: Results of Data Processing and Research 2022

Based on the calculation table 4.8 above, it is explained that there were no respondents who strongly disagreed. However, on the other hand, there were five respondents, or 20%, disagreed; six respondents, or 24%, stated neutral; seven respondents, or 28%, and seven respondents, or 28%, strongly agreed, so the average score of respondents' answers obtained for this question is 3.64, which is included in the scale of 3.41 - 4.20 with a good rating category.

Table 11. Work environment according to Occupational Safety and Health Standards

No	Alternative Answers	Frequency (F)	Percentage (%)	Weights (X)	□□X.F)	$M = \frac{\sum F(X)}{n}$
1	Strongly disagree	1	4%	1	1	
2	Disagree	5	20%	2	10	
3	Neutral	2	8%	3	6	$= \frac{93}{25}$
4	Agree	9	36%	4	36	
5	Agree	8	32%	5	40	$= 3,72$
	Total	Total	100%		93	Information :

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						Fine

Source: Results of Data Processing and Research 2022

Based on the calculation, table 11 above explains that one respondent, or 4%, stated that they strongly disagreed. There were five respondents, or 20%, who stated that they did not agree; two respondents, or 8%, who stated neutral, nine respondents, or 36%, who stated that they agreed; and eight respondents, or 32%, who strongly agreed, so the average score of respondents' answers obtained for this question is 3.72, which is included in the scale of 3.41 - 4.20 with a good rating category.

Table 12. The work environment is made as good as possible so that employees feel comfortable

No	Alternative Answers	Frequency (F)	Percentage (%)	Weights (X)	□□X.F)	$M = \frac{\sum F(X)}{n}$
1	Strongly disagree	1	4%	1	1	
2	Disagree	5	20%	2	10	
3	Neutral	8	32%	3	24	$= \frac{87}{25}$
4	Agree	3	12%	4	12	
5	Agree	8	32%	5	40	$= 3{,}48$
	Total	25	100%		87	Information : Fine

Source: Results of Data Processing and Research 2022

Based on the calculation, table 12 above explains that one respondent or 4% stated that they strongly disagreed. Five respondents, or 20%, stated that they did not agree; eight respondents, or 32%, stated neutral; three respondents, or 12%, stated that they agreed; and eight respondents, or 32%, strongly agreed so that the average score of respondents' answers obtained for this question is 3.48, which is included in the scale of 3.41 - 4.20 with a good rating category.

Table 13. There is a clear indication of the product

No	Alternative Answers	Frequency (F)	Percentage (%)	Weights (X)	□□X.F)	$M = \frac{\sum F(X)}{n}$
1	Strongly disagree	0	0%	1	0	
2	Disagree	2	8%	2	4	
3	Neutral	4	16%	3	12	$= \frac{100}{25}$
4	Agree	11	44%	4	44	
5	Agree	8	32%	5	40	$= 4{,}00$
	Total	25	100%		100	Information: Fine

Source: Results of Data Processing and Research 2022

Based on the calculation table 13 above, it is explained that there were no respondents who strongly disagreed. There were two respondents, or 8%, who stated that they did not agree; four respondents, or 16%, who stated neutral, 11 respondents, or 44%, who agreed; and eight respondents, or 32%, who stated that they strongly agreed so that the average score of

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respondents' answers obtained for this question is 4.00, which is included in the scale of 3.41 - 4.20 with a good rating category.

Table 14. Accuracy of stock information in the warehouse

No	Alternative Answers	Frequency (F)	Percentage (%)	Weights (X)	□□X.F)	$M = \frac{\sum F(X)}{n}$
1	Strongly disagree	1	4%	1	1	
2	Disagree	2	8%	2	4	$= \frac{93}{25}$
3	Neutral	6	24%	3	18	
4	Agree	10	40%	4	40	$= 3,72$
5	Totally Agree	6	24%	5	30	
	Total	25	100%		93	Information: Fine

Source: Results of Data Processing and Research 2022

Based on the calculation, table 4.12 above explains that one respondent, or 4%, stated that they strongly disagreed. There were two respondents, or 8%, who stated that they disagreed. Six respondents, or 24%, stated neutral, and ten, or 40%, stated that they agreed. Six respondents, or 24%, stated that they strongly agreed, so the average score of respondents' answers for this question is 3.72, which is included in the scale of 3.41 - 4.20 with a good rating category.

b. Recapitulation of Warehouse Layout Variables

The following is the recapitulation of respondents' responses to the warehouse layout variable:

Table 15. Warehouse Layout Variables Recapitulation

No	Indicator	Value	Category
1	Equipment used following SOPs (Company Operational Standards)	3,72	Good
2	Selection of reliable and efficient equipment for warehouse material handlers	3,52	Good
3	Efficient space utilization can facilitate activities in the warehouse	3,76	Good
4	Availability of space for each component	3,64	Good
5	. work environment following K3 Standard (Occupational Safety Health)	3,72	Good
6	he work environment is made as good as possible so that employees feel comfortableLingkungan kerja dibuat sebaik mungkin agar karyawan merasa nyaman	3,48	Good
7	The presence of a clear indication of the product	4,00	Good
8	Accuracy of stock information in warehouses	3,72	Good
	Total Value	29,56	
	Average	3,69	Good

Source: Results of Data Processing and Research 2022

Based on the table 15 recapitulation calculation above, it can be obtained that the overall category of indicators is good, with the highest score obtained by the indicator of a clear indication of the product with a value of 4.00 and the lowest value obtained by the indicator of the work environment as well as possible so that employees feel comfortable with a value of 3.48.

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So that on the interval scale, it has been determined that the average result for the warehouse layout variable is 3.69. Therefore, this figure is included on a scale of 3.41 – 4.20 with a good rating category.

a. Work Productivity Variable Descriptive (Y)

The work productivity variable on the research questionnaire has five dimensions with ten questions. The following dimensions measure the work productivity variable:

1) Quality of Work

Table 16. Quality of good employee performance

No	Alternative Answers	Frequency (F)	Percentage (%)	Weights (X)	□□X.F)	$M = \frac{\sum F(X)}{n}$
1	Strongly disagree	0	0%	1	0	
2	Disagree	6	24%	2	12	$= \frac{89}{25}$
3	Neutral	6	24%	3	18	
4	Agree	6	24%	4	24	$= 3{,}56$
5	Totally Agree	7	28%	5	35	
	Total	Total	100%		89	Information: Fine

Source: Results of Data Processing and Research 2022

Based on the calculation table 16 above, it is explained that there were no respondents who strongly disagreed. There were six respondents, or 24%, who stated that they did not agree; six respondents, or 24%, who stated neutral; 6 respondents, or 24%, who agreed; and seven respondents, or 28%, who strongly agreed so that the average score of respondents' answers obtained for this question is 3.56, which is included in the scale of 3.41 - 4.20 with a good rating category.

Table 17. Accuracy in completing each job

No	Alternative Answers	Frequency (F)	Percentage (%)	Weights (X)	□□X.F)	$M = \frac{\sum F(X)}{n}$
1	Strongly disagree	0	0%	1	0	
2	Disagree	5	20%	2	10	$= \frac{86}{25}$
3	Neutral	10	40%	3	30	
4	Agree	4	16%	4	16	$= 3{,}44$
5	Totally Agree	6	24%	5	30	
	Total	25	100%		86	Information: Fine

Source: Results of Data Processing and Research 2022

Based on the calculation, table 17 above explains that there were no respondents who strongly disagreed. Instead, there were five respondents, or 20%, who disagreed; 10 respondents, or 40%, who stated neutral; 4 respondents, or 16%, who agreed; and six respondents, or 24%, who stated strongly agree so that the average score of respondents' answers obtained for this question is 3.44, which is included in the scale of 3.41 - 4.20 with a good rating category.

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Table 18. Achievement of planned work targets

No	Alternative Answers	Frequency (F)	Percentage (%)	Weights (X)	□□X.F)	$M = \frac{\sum F(X)}{n}$
1	Strongly disagree	0	0%	1	0	
2	Disagree	3	12%	2	6	$= \frac{94}{25}$
3	Neutral	5	20%	3	15	
4	Agree	12	48%	4	48	
5	Totally Agree	5	20%	5	25	$= 3{,}76$
	Total	25	100%		94	Information: Fine

Source: Results of Data Processing and Research 2022

Based on the calculation table 18 above, it is explained that there were no respondents who strongly disagreed. Instead, three respondents, or 12%, disagreed; five respondents, or 20%, stated neutral; 12 respondents, or 48%, agreed; and five respondents, or 20%, strongly agreed, so the average score of respondents' answers obtained for this question is 3.76, which is included in the scale of 3.41 - 4.20 with a good rating category.

Table 19. Employees' ability to understand tasks to achieve targets

No	**Alternative Answers**	**Frequency (F)**	**Percentage (%)**	**Weights (X)**	**□□X.F)**	$M = \frac{\sum F(X)}{n}$
1	Strongly disagree	0	0%	1	0	
2	Disagree	3	12%	2	6	$= \frac{95}{25}$
3	Neutral	5	20%	3	15	
4	Agree	11	44%	4	44	
5	Totally Agree	6	24%	5	30	$= 3{,}80$
	Total	25	100%		95	Information: Fine

Source: Results of Data Processing and Research 2022

Based on the calculation table 19 above, it is explained that there were no respondents who strongly disagreed. Instead, there were three respondents, or 12%, who disagreed; five respondents, or 20%, who stated neutral; 11 respondents, or 44%, who agreed; and six respondents, or 24%, who firmly agreed so that the average score of respondents' answers obtained for this question is 3.80, which is included in the scale of 3.41 - 4.20 with a good rating category.

2) Punctuality

Table 20. Making work effective and efficient

No	Alternative Answers	Frequency (F)	Percentage (%)	Weights (X)	□□X.F)	$M = \frac{\sum F(X)}{n}$
1	Strongly disagree	0	0%	1	0	
2	Disagree	7	28%	2	14	

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3	Neutral	5	20%	3	15	$= \frac{85}{25}$
4	Agree	9	36%	4	36	
5	Totally Agree	4	16%	5	20	$= 3{,}40$
	Total	25	100%		85	Information: Fine

Source: Results of Data Processing and Research 2022

Based on table 20 above, it is explained that there were no respondents who strongly disagreed. Instead, there were seven respondents, or 28%, who disagreed; five respondents, or 20%, who stated neutral; nine respondents, or 36%, who agreed; and four respondents, or 16%, who firmly agreed so that the average score of respondents' answers obtained for this question is 3.40, which is included in the scale of 3.41 - 4.20 with a good rating category.

Table 21. Encouraging employees to improve their performance

No	Alternative Answers	Frequency (F)	Percentage (%)	Weights (X)	□□X.F)	$M = \frac{\sum F(X)}{n}$
1	Strongly disagree	0	0%	1	0	
2	Disagree	2	8%	2	4	$= \frac{103}{25}$
3	Neutral	4	16%	3	12	
4	Agree	8	32%	4	32	
5	Totally Agree	11	44%	5	55	$= 4{,}12$
	Total	25	100%		103	information : Fine

Source: Results of Data Processing and Research 2022

Based on table 21 above, it is explained that there were no respondents who strongly disagreed. Instead, there were two respondents, or 8%, who disagreed; four respondents, or 16%, who stated neutral; eight respondents, or 32%, who agreed; and 11 respondents, or 44%, who firmly agreed so that the average score of respondents' answers obtained for this question is 4.12, which is included in the scale of 3.41 - 4.20 with a good rating category.

3) Work Spirit

Table 22. Mood can affect employees in completing work

No	Alternative Answers	Frequency (F)	Percentage (%)	Weights (X)	□□X.F)	$M = \frac{\sum F(X)}{n}$
1	Strongly disagree	0	0%	1	0	
2	Disagree	5	20%	2	10	$= \frac{92}{25}$
3	Neutral	4	16%	3	12	
4	Agree	10	40%	4	40	
5	Totally Agree	6	24%	5	30	$= 3{,}68$
	Total	25	100%		92	information : Fine

Source: Results of Data Processing and Research 2022

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Based on the calculation table 22 above, it is explained that there were no respondents who strongly disagreed. Instead, there were five respondents, or 20%, who disagreed; four respondents, or 16%, who stated neutral; ten respondents, or 40%, who agreed; and six respondents, or 24%, who firmly agreed so that the average score of respondents' answers obtained for this question is 3.68, which is included in the scale of 3.41 - 4.20 with a good rating category.

Table 23. Teamwork can increase employee morale

No	Alternative Answers	Frequency (F)	Percentage (%)	Weights (X)	□□X.F)	$M = \frac{\sum F(X)}{n}$
1	Strongly disagree	1	4%	1	1	
2	Disagree	4	16%	2	8	$= \frac{93}{25}$
3	Neutral	5	20%	3	15	
4	Agree	6	24%	4	24	$= 3,72$
5	Totally Agree	9	36%	5	45	
	Total	25	100%		93	information : Fine

Source: Results of Data Processing and Research 2022

Based on the calculation, table 23 above explains that one respondent, or 4%, stated that they strongly disagreed. Four respondents, or 16%, stated that they did not agree; five respondents, or 20%, stated neutral; six respondents, or 24%, stated that they agreed; and nine respondents, or 36%, stated that they strongly agreed so that the average score of respondents' answers obtained for this question is 3.72, which is included in the scale of 3.41 - 4.20 with a good rating category.

4) Work Discipline

Table 24. Comply with existing regulations to produce maximum work

No	Alternative Answers	Frequency (F)	Percentage (%)	Weights (X)	□□X.F)	$M = \frac{\sum F(X)}{n}$
1	Strongly disagree	0	0%	1	0	
2	Disagree	2	8%	2	4	
3	Neutral	3	12%	3	9	$= \frac{101}{25}$
4	Agree	12	48%	4	48	
5	Totally Agree	8	32%	5	40	$= 4,04$
	Total	Total	100%		101	information : Fine

Source: Results of Data Processing and Research 2022

Based on table 24 above, it is explained that there were no respondents who strongly disagreed. Instead, there were two respondents, or 8%, who disagreed; three respondents, or 12%, who stated neutral; 12 respondents, or 48%, who agreed; and eight respondents, or 32%, who firmly agreed so that the average score of respondents' answers obtained for this question is 4.04, which is included in the scale of 3.41 - 4.20 with a good rating category.

Table 25. Perform tasks according to the allotted time

No	Alternative Answers	Frequency (F)	Percentage (%)	Weights (X)	□□X.F)

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1	Strongly disagree	2	8%	1	2	$M = \frac{\sum F(X)}{n}$
2	Disagree	2	8%	2	4	
3	Neutral	3	12%	3	9	
4	Agree	12	48%	4	48	$= \frac{93}{25}$
5	Totally Agree	6	24%	5	30	
						$= 3,72$
	Total	25	100%		93	information : Fine

Source: Results of Data Processing and Research 2022

Based on the calculation table 4.23 above, it is explained that there were two respondents, or 8%, who stated that they strongly disagreed. There were two respondents, or 8%, who stated that they did not agree; three respondents, or 12%, who stated neutral; 12 respondents, or 48%, who stated that they agreed; and six respondents, or 24%, who stated that they strongly agreed so that the average score of respondents' answers obtained for this question is 3.72, which is included in the scale of 3.41 - 4.20 with a good rating category.

Work Productivity Variable Recapitulation. The following is the recapitulation of respondents' responses to the work productivity variable:

Table 26. Work Productivity Variable Recapitulation

No	Indicator	Value	Category
1	The quality of good employee	3,56	Good
2	Accuracy in completing each job	3,44	Good
3	Achievement of planned work targets	3,76	Good
4	The ability of employees to understand the tasks in the achievement of targets	3,80	Good
5	Make work effective and efficient	3,40	Good
6	Encouraging employees to improve their performance	4,12	Good
7	Mood can affect employees in completing work	3,68	Good
8	*Teamwork* can increase employee morale	3,72	Good
9	Comply with existing regulations to produce maximum work	4,04	Good
10	Perform tasks according to the specified time	3,72	Good
	Total Value	37,24	
	Average	3,72	Good

Source: Data Processed by Researchers, 2022

Based on the recapitulation calculation above, the results for the overall category of indicators are good, with the highest score obtained by the indicator encouraging employees to improve their performance with a value of 4.12 and the lowest score obtained by the indicator for making work effective and efficient with a value of 3.40, the average result has been determined - the average for the work productivity variable is 3.72, and this figure is included in the scale of 3.41 – 4.20 with a good rating category.

Validity test. In this study, the authors used a validity test to measure the accuracy of an item said to be valid or not in the questionnaire. A questionnaire is valid if the items correctly measure what you want to measure. Measure the validity can be done by doing a correlation between item scores in an indicator. Meanwhile, to find out whether the score of each question item is valid or not, statistical criteria are set as follows:

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a. If rcount ≥ rtable and is positive, then the variable is valid
b. If rcount ≤ rtable, then the variable is not valid

Following the results of calculations with the help of the SPSS for Windows version 26 program, it is known that the level of validity of the research data is as follows:

Table 27. Validity Test Results

Variable	Question Items	r table	r count	Information
Warehouse Layout (X)	1	0,396	0,599	Valid
	2	0,396	0,448	Valid
	3	0,396	0,631	Valid
	4	0,396	0,488	Valid
	5	0,396	0,568	Valid
	6	0,396	0,468	Valid
	7	0,396	0,575	Valid
	8	0,396	0,537	Valid
Work Productivity (Y)	1	0,396	0,543	Valid
	2	0,396	0,659	Valid
	3	0,396	0,582	Valid
	4	0,396	0,584	Valid
	5	0,396	0,534	Valid
	6	0,396	0,410	Valid
	7	0,396	0,521	Valid
	8	0,396	0,606	Valid
	9	0,396	0,460	Valid
	10	0,396	0,467	Valid

Source: Data Processing Using SPSS Version 26, 2022

Based on the data in table 27, it can be seen that the data tested consists of one independent variable, namely the warehouse layout variable, and one dependent variable, namely the work productivity variable. In the analysis of the results of the validity test, the results of calculations from the questionnaire, which are rcounts, are then compared with r-tables. In this study, the rtable value n = 25 with the conditions df = (n-2) = 23 and a significance level of 0.05, the rtable value of 0.396, is obtained. In the table above, all correlation values or rcount for each question are more significant than the rtable value (0.396). This can be interpreted as the validity testing results showing all valid data.

b. Reliability Test

The reliability test in this study was used to determine whether the data collection tool showed a level of accuracy, level of accuracy, stability or consistency in expressing specific symptoms. For example, a variable can be reliable if it gives a Cronbach Alpha value > 0.60. Reliability testing in this study used the SPSS application program version 26.

Table 28. Warehouse Layout Variable Reliability Test Results

Reliability Statistics	
Cronbach's Alpha	N of Items
0.639	8

Source: Data Processing Using SPSS Version 26, 2022

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Based on table 28, the reliability test results for the variable score of research data with 25 respondents obtained the value of statistical reliability (Cronbach alpha) for the warehouse layout variable of 0.639 or above 0.60. Thus the data from the research is reliable and meets the requirements for good data quality.

Table 29. Work Productivity Variable Reliability Test Results

Reliability Statistics	
Cronbach's Alpha	N of Items
0.724	10

Source: Data Processing Using SPSS Version 26, 2022

Based on table 29 above, the reliability test results for the research data variable score with 25 respondents obtained a statistical reliability value (Cronbach alpha) for the work productivity variable of 0.724 or above 0.60. Thus the data from the research is reliable and meets the requirements for good data quality.

Normality test

Normality Test. This normality test aims to determine the data distribution in the variables used in this study. Data that is good and feasible to use in a study is usually distributed. If the significance value is > 0.05, the variable is stated to be normally distributed; if the significance value is <0.05, the variable is declared not customarily distributed (Ghozali, 2013).

The Normality test in this study was carried out using the graphical and Kolmogrov-Smirnov approaches using a significance level of 5%.

The results of the normality test using the SPSS version 26 program are as follows:

Table 30. Normality Test Results

One-Sample Kolmogorov-Smirnov Test			
		Warehouse Layout	Work Productivity
N		25	25
Normal Parameters[a,b]	Mean	29.56	37.24
	Std. Deviation	4.601	5.681
Most Extreme Differences	Absolute	0.153	0.157
	Positive	0.153	0.157
	Negative	-0.113	-0.107
Test Statistic		0.153	0.157
Asymp. Sig. (2-tailed)		.136[c]	.114[c]
a. Test distribution is Normal.			
b. Calculated from data.			
c. Lilliefors Significance Correction.			

Source: Data Processing Using SPSS Version 26, 2022

Based on the results of the Kolmogrov-Smirnov normality test in table 30, it can be seen that the significance of Asymp. Sig. (2-tailed) warehouse layout is 0.136, and work productivity is 0.114. The significance value of each variable tested is > 0.05, so it can be concluded that these variables are normally distributed. The results of the normality test using the SPSS version 26 program with the P-Plot model are as follows:

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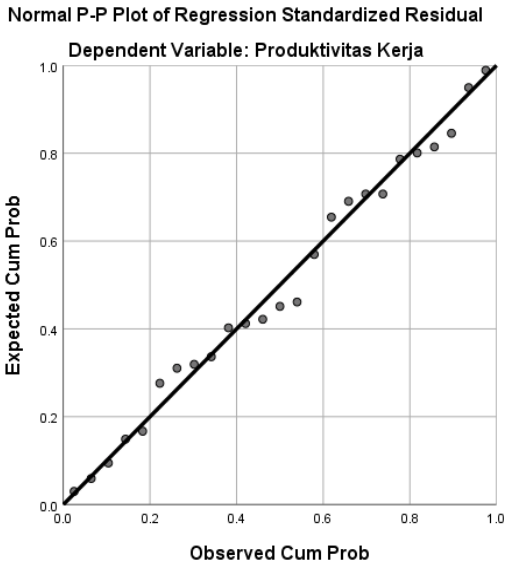

Figure 2. Normal P-Plot Graph
Source: Data Processing Using SPSS Version 26, 2022

The dots spread around the diagonal line on the standard probability plot graph. The distribution of these points follows the direction of the diagonal line so that the test results show that the points are not far from the diagonal line. This means that the regression model is typically distributed and feasible to use.

d. Hypothesis testing

a. Correlation Coefficient Test

The correlation coefficient test is used to determine the strength of the relationship between the correlations of the two variables where other variables considered influential are controlled or fixed (as control variables). Because the variable studied is interval data, the statistical technique used is Pearson Correlation Product Moment using the SPSS Version 26 program.

Table 31. Correlation Coefficient Test Results

Model Summary

Model	R	R Square	Adjusted R Square	Std. An error in the Estimate
1	.868[a]	0.754	0.743	2.880

a. Predictors: (Constant), Warehouse Layout
b. Dependent Variable: Work Productivity

Source: Data Processing Using SPSS Version 26, 2022

Table 31 above shows that the calculation results show a correlation coefficient value of 0.868. This value means that the influence of the warehouse layout variable on work productivity variables is powerful. So there is a strong relationship between warehouse layout variables and work productivity variables. The probability between warehouse layout and work productivity can be seen from the Sig value. (2-tailed) 0.000 is less than 0.05, meaning there is a significant relationship between the warehouse layout and work productivity variables.

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Determination Coefficient Test (R^2). This test of the coefficient of determination (R^2) aims to see or measure how far the model can explain the dependent variable. The value of the coefficient of determination is between zero and one. If the coefficient value is close to zero, then the ability of the independent variable to influence the dependent variable in the study is minimal. If the coefficient value is close to one, then the ability of the independent variable provides almost all the information needed to predict the dependent variable (Ghozali: 2013). The following is the result of the coefficient of determination of the warehouse layout variable (X) which can be seen in the table below:

Table 32. Test Results for the Coefficient of Determination (R^2)

Model Summary

Model	R	R Square	Adjusted R Square	Std. An error in the Estimate
1	.868[a]	0.754	0.743	2.880

a. Predictors: (Constant), Warehouse Layout
b. Dependent Variable: Work Productivity

Source: Data Processing Using SPSS Version 26, 2022

Based on table 32, it can be seen that the coefficient of determination (*R*2) is 0.754. This shows that the warehouse layout variable (X) can explain or explain work productivity (Y) of 75.4%. At the same time, the remaining 24.6% (100% -75.4%) is influenced by other variables not included in the model or equation in this study. Therefore, this 24.6% figure is explained by other factors not included in this study.

c. Simple Linear Regression Test

The simple linear regression test is a measuring tool used to measure whether or not there is a correlation between variables.

Table 33. Simple Linear Regression Test Results

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	5.558	3.821		1.455	0.159
	Tata Letak Gudang	1.072	0.128	0.868	8.388	0.000

a. Dependent Variable: Work Productivity

Source: Data Processing Using SPSS Version 26, 2022

From the table above, a simple linear regression equation is obtained

Y = a + bX

Y = 5.558 + 1.072X

Information :

Y: Work Productivity

X: Warehouse Layout

5.558: Constant value

1.072: The magnitude of the regression coefficient of the warehouse layout variable

The results of the Simple Linear Regression Test show that a constant value of 5.558 means that if the independent variable (warehouse layout) is zero, then the value of the dependent variable (work productivity) is 5.558. The value of the regression coefficient X is 1.072, which

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means that the warehouse layout (X) positively affects work productivity (Y). This shows that by adding one layout unit, there will be an increase in work productivity of 1.072 or vice versa. If there is a decrease in one layout unit, it will be followed by a decrease in work productivity of 1.072.

Partial Test (t-test). Ghozali (2018: 88) argues that the t-test is used to test the effect of each independent variable (X) used in the study on the dependent variable (Y) partially.
This study partially used the t-test with a significance level of 0.05. The basis for decision-making is as follows:

1. Decision-making based on probability values
   a) If the significance is <0.05 then H0 is rejected and H1 is accepted
   b) If significance > 0.05 then H0 is accepted and H1 is rejected
2. Decision-making based on t-count
   a) If t-count > t-table then H1 is accepted and H0 is rejected
   b) If t-count <t-table then H0 is accepted and H1 is rejected

Table 34. Test Results t

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	5.558	3.821		1.455	0.159
	Tata Letak Gudang	1.072	0.128	0.868	8.388	0.000

a. Dependent Variable: Work Productivity

Source: Data Processing Using SPSS Version 26, 2022

Table 34 above shows that the warehouse layout variable (X) has a t-count value of 8.388 with a significance level of 0.000. The value of the t-table, the expected value in making a hypothesis decision, can be found by determining df. Value df = n–k, where n is the number of respondents and k is the sum of all variables in this study (df=25-2=23). Then the t-table value is obtained with a significance level of 0.05, equal to 2.068.
In this study, there is a hypothesis:
H0: There is no influence between Warehouse Layout on Work Productivity
H1: There is an influence between Warehouse Layout on Work Productivity

The analysis results show that the t-count is 8.388 > t-table 2.068, and the significance level is 0.000 <0.05. This means that H0 is rejected and H1 is accepted, or there is an influence between Warehouse Layout on Work Productivity.

Discussion

Based on the title that the researcher will examine and the research results above, the researcher verifies how much influence the warehouse layout variable has on work productivity. The results of statistical values obtained from each test criterion starting from the validity test, reliability, descriptive analysis, normality test, and hypothesis testing, which consists of the correlation coefficient, the coefficient of determination, simple linear regression analysis, and the t-test (Partial) can be explained through the discussion as follows:

1) Based on the recapitulation results of the warehouse layout variable, the average result is 3.69. For the recapitulation results of the work productivity variable, a value of 3.72 is obtained so that the two research variables are included in the excellent category.

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2) In this study, researchers tested the correlation coefficient. The results of the correlation coefficient test showed a value of 0.868 which means that the effect of the warehouse layout variable on work productivity variables was powerful. Therefore, warehouse layout positively relates to work productivity with a degree of perfect correlation.
3) In this study, researchers also tested the coefficient of determination to determine the ability of the independent variables to explain the dependent variable. From the test results of the coefficient of determination, the R2 value is 0.754 or 75.4%. This means that the warehouse layout variable can explain or explain the work productivity variable of 75.4%. The remaining 24.6% is explained by other factors outside this study's variables.
4) In addition, researchers also conducted a simple linear regression test in this study and obtained the following results:

1. Y = a + bX
2. = 5.558 + 1.072X

The constant value is 5.558, which means that if the value of the independent variable (warehouse layout) is zero, then the value of the dependent variable (work productivity) is 5.558. The regression coefficient X is 1.072, which states that for every addition of one layout unit, there will be an increase in work productivity of 1.072. The regression coefficient is positive, so the direction of the influence of variable x on variable y is positive.

Furthermore, based on the t-test results shows that the Warehouse Layout variable affects Work Productivity, as evidenced by the t-count of 8.388 > t-table 2.068 with a significance level of 0.000 <0.050. So, the Warehouse Layout variable has a significant effect on Work Productivity. This means that H0 is rejected and H1 is accepted, or there is an influence between the layout of the warehouse on work productivity at PT. Mighty Primindo.

CONCLUSION

Based on the results of the data analysis that has been carried out and the discussion of the results of data analysis in research regarding the effect of warehouse layout on work productivity, it can be concluded that the results of the study indicate a positive and significant influence between warehouse layout variables on work productivity variables. Based on the descriptive research variables, the warehouse layout variable has a grand mean value of 3.69, and the work productivity variable has a grand mean value of 3.72, both of which are categorized at a reasonable level. Therefore, the warehouse layout variable can explain the work productivity variable of 75.4%, and the remaining 24.6% is influenced by factors not included in this study. Then based on the t-test, the value of t-count > t-table (8.388 > 2.068) is obtained with a significance level of 0.000 <0.050. This means that H1 is accepted and H0 is rejected, which indicates that the warehouse layout variable significantly affects work productivity.

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