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Implementation of Objective Matrix and Root Cause Analysis for Productivity Analysis PT. Indomarco Adi Prima SP Deket Lamongan

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A B S T R A C T

PT Indomarco Adi Prima Stock Point Deket Lamongan is one of the business units of PT Indofood Sukses Makmur Tbk, which distributes consumer products. The company has 300 outlets in grocery stores and modern stores with a distribution target of 30 outlets for each salesman in a day. However, in its implementation, the target is only sometimes achieved. Other problems, such as product delivery errors and delivery delays, occur frequently. This research aims to analyze the company's productivity level using the Objective Matrix (OMAX) method. Productivity measurement also involves the Analytical Hierarchy Process (AHP) method in determining the weight of each ratio. Based on the calculation of productivity during the measurement period from January 2022 to December 2022 using Objective Matrix (OMAX), the results obtained are productivity index values that decreased during the measurement period, namely February (-4,75%), March (-3.90%), May (-17.48%), June (-11.92%), July (-31.28%), and October (-7.04%). Then, based on the results of productivity indicator analysis, it is known which ratio indicator has the lowest value and causes the productivity index to fall, namely ratio 1, ratio 2, ratio 5, ratio 6, and ratio 7. The decrease in productivity index based on Root Cause Analysis (RCA) using fishbone diagram tools due to no heat reducer, no computer and truck maintenance schedule, less communication between employees, travel time estimation is not good, attendance system updates are not carried out, limited warehouse area, high work intensity, no instructions for the preparation of goods in the warehouse area, stock goods arrive late, rainy season, road repairs, no periodic checks, and unpredictable road conditions.

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1. INTRODUCTION

The development of the industrial world, especially in Indonesia, demands increasingly fierce competition between companies. Every company is required to be able to survive in industrial competition. Seeing this fact, the

productivity of an industrial system is the key so that the company does not drown in competition. Productivity is the relationship between an industrial system's inputs and outputs. This relationship is more commonly expressed as the ratio of output divided by input (Nasution, 2006).

PT Indomarco Adi Prima Stock Point Deket Lamongan is one of the business units of PT Indofood Sukses Makmur Tbk which is engaged in the distribution of consumer products. The company has 300 outlets in the form of grocery stores and modern stores where per day it is targeted to distribute to 30 outlets per salesman, but in practice, this target is not always achieved. In addition, there are other problems such as product delivery errors, delivery delays, and other problems that can affect the company's productivity level. Productivity measurement needs to be done to determine the extent to which success has been achieved by the company in the utilization of available resources and provide useful information in evaluating progress.

Efforts can be made to overcome the problems that occur by measuring productivity using the OMAX method to identify factors that have an effect and those that have less effect on increasing productivity. The weighting of productivity indicators using the Analytical Hierarchy Process (AHP) method. Then the Root Cause Analysis (RCA) method is used to determine the root of the problem by identifying the causes of the decline in productivity achieved by the company so that improvement proposals can be given. These three methods are expected to determine the level of productivity of the company, find the factors that cause existing problems, and can provide comprehensive improvement proposals appropriately to be able to fix these problems.

2. LITERATURE REVIEW

Productivity

Productivity is defined as the relationship or ratio of what is produced to the overall resources used (Wibisono, 2019). According to Puteri (2017), the concept of productivity first appeared in 1776 in a paper compiled by Quesnay from France. According to Walter Aigner, the philosophy and spirit of productivity have existed since the beginning of human civilization. Productivity is the result of what is obtained against all that is used. There are three types of productivity, namely: (i) Partial productivity is single-factor productivity where the ratio results from the output to one type of input, (ii) Two-factor productivity is the productivity of several factors or several resources used to produce an output, including capital and labor, and (iii) Total productivity is the productivity of all factors used to produce the output.

Productivity Cycle

According to Gaspersz (1998), introduced a formal concept called the productivity cycle to be used in improving productivity continuously. This concept consists of four main stages, namely: (1) Productivity measurement, (2) Productivity evaluation, (3) Productivity planning, and (4) Increased productivity.

The productivity cycle is a continuous process, involving aspects of measurement, evaluation, planning, and control. If the productivity of the industrial system can be measured, the next step is to evaluate the actual productivity level to compare it with the plan that has been set. The gap that occurs between the actual productivity level and the plan (productivity gap) is a problem that must be evaluated and looked for the root cause that causes the productivity gap (Gaspersz, 1998).

Methods of measuring productivity

According to Nasution (2006), in measuring productivity there are various methods of measurement. Broadly speaking, the method is divided into two, namely the method of measuring total productivity and partial productivity, including the following: (1) Output/input ratio method, (2) Index number method, (3) APC Productivity Method (American Productivity Center), (4) Marvin E. Mundel Productivity Method, and (5) OMAX (Objective Matrix) Productivity Method.

Objective Matrix (OMAX)

According to Waluyo (2008), the OMAX productivity model consists of 3 (three) stages, namely:

1. Defining

At the top of the matrix are the productivity criteria that define the productive work of a work unit. The criteria must be independent of

each other and be measurable factors. Measures of volume and time must be determined in advance. The measurement method must consider the productivity criteria as something to be developed.

2. Qualifyng

The body of the matrix shows the level of achievement for the productivity criteria, the levels are shown on a 10-point scale. A value of 3 indicates the level at which the measurement matrix begins. Less than the minimum acceptable result is considered zero. The real objectives for the evaluation period are expressed in 10 levels. The measurement results of the developed parts of the unit should be included in the inputs recorded based on values 0, 3, and 10. All inputs are expressed by interpolation of these 3 lines.

3. Monitoring

The basis of the matrix is the calculation of the performance indicators, which are located at the bottom of the matrix. The level of operations taking place is entered into the performance row above the body of the matrix. The number in the weight row indicates the close relationship between each productivity criterion. The scores multiplied by the weights are entered into the value row, and the sum of these values is the performance indicator for a given period.

Basic Structure of Measurement Objective Matrix Method

According to Nasution (2006), calculations using the OMAX method can be seen in Fig. 1.

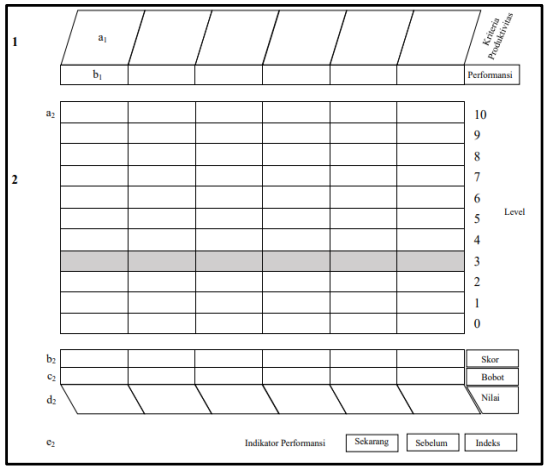

Fig. 1. Basic structure objective matrix

The explanation of the basic structure of the Objective Matrix above is as follows.

1. Defining block, (a) Productivity criteria. Criteria that measure productivity in the section or department where productivity will be measured, (b) Current performance. Each productivity value is based on the last measurement.
2. Quantification block
   a. Scale
   Numbers that indicate the level of performance of the measurement of each productivity criterion. Divided into eleven parts from a scale of 0 to a scale of 10. The larger the scale, the greater the productivity. The eleven scales are divided into three parts, namely:
      1) Level 0
      The worst possible productivity value.
      2) Level 3
      The value of performance productivity during the measurement period.
      3) Level 10
      The expected productivity value until a certain period.

   The increase in productivity value is solved by interpolation.

$$\text{Formula} = \frac{\text{level 3 - level 0}}{3 - 0} \qquad (1)$$

   Furthermore, filling the row between level 3 and level 10 can be calculated with the Equation below.

$$\text{Formula} = \frac{\text{level 10 - level 3}}{7 - 3} \qquad (2)$$

   b. Score
   The level value where the productivity value is located. For example, if output/hour = 100 is located at level 5, then the score for that measurement is 5. If there are measurements that do not exactly match the numbers in the matrix, round them down.
   c. Weight
   The amount of weight of each productivity criterion on total

productivity. The sum of the weights of each criterion is 100.

d. Productivity Value
Multiplication of each score with the weight of each criterion.

e. Productivity Indicators
The sum of each Productivity Index (IP) value so that it is calculated as a percentage increase or decrease in the level of productivity for the entire period, can be seen from the development pattern of the productivity index value against the productivity value of the previous period, as shown in Equation 2.4 below.

$$IP = \frac{IP_i - IP_{i-1}}{IP_{i-1}} \times 100 \quad (3)$$

Analytical Hierarchy Process (AHP)

According to Sasongko, et al. (2017), AHP is designed to streamline the perceptions of people closely related to a particular problem through procedures designed to identify measures of preference among various alternatives. This analysis produces unstructured problem models, usually quantifiable problems, problems that require evaluation (judgment), as well as complex or unframed situations, in situations where statistical data is minimal or nonexistent and only qualitative based on perception, experience, or intuition.

According to Sasongko, et al. (2017), the advantages obtained when solving problems and making decisions using AHP include:

1. AHP provides a single model that is easy to understand and flexible for various unstructured problems,
2. AHP combines deductive and system-based approaches to solve complex problems,
3. AHP provides a scale to measure something and applies prioritization methods,
4. AHP follows logical consistency and considerations used in setting different priorities, and
5. AHP enables organizations to better define problems and improve judgment and understanding through iteration.

According to Satriani, et al. (2018), in using AHP there are 4 basic principles which are described as follows: (i) Decomposition or creating a hierarchy. Complex systems can be understood by hierarchically decomposing them into their supporting elements and combining and composing them, (ii) Comparative judgment or assessment of criteria and alternatives. Criteria and alternatives are done using pairwise comparisons. All types of problems can be measured on a 1-9 scale which is the best representation of the scale to express one's opinion. The qualitative opinion of the pairwise comparison scale can be measured using the table shown in Table 1 .

Table 1. Paired comparison scales

Intensity of Interest	Description
1	Both elements are equally important
3	One element is slightly more important than the others
5	One element is more important than the other
7	One element is clearly more absolutely important than the other element
2, 4, 6, 8	Values between two adjacent consideration values
Reverse	If activity I get one number compared to activity j, then j has the opposite value compared to i

1. Synthesis of priority

Each criterion and option requires a pairwise comparison. The relative comparative values of all criteria and alternatives can be adjusted according to the given evaluation to produce a weighted priority value. Weights and priorities can be calculated by manipulating matrices or solving mathematical equations.

2. Logical consistency

Consistency has two meanings, firstly that every similar object can be classified according to uniformity and relevance. Secondly, it is related to the level of relationship between objects and other objects on certain criteria.

Root Cause Analysis (RCA)

According to Rooney and Hauvel (2004), RCA is a tool designed to help identify not only what and how an event occurred, but also why it occurred. If researchers can determine why an event or failure occurred whether they can determine to take corrective actions that prevent future events.

Fishbone Diagram

According to Tobing (2018), the cause and effect diagram or fishbone diagram is a tool that aims to find the root cause of the problem from influential factors.

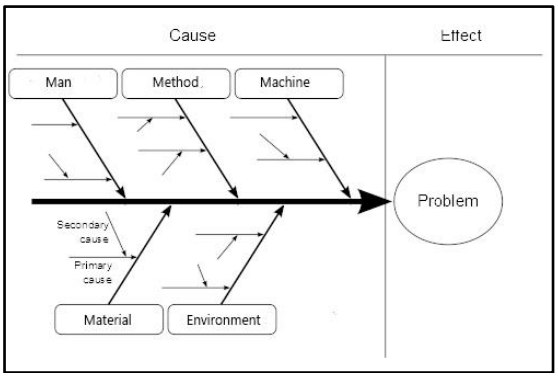

Fig. 2. Fishbone diagram

Expert Choice

According to Handayani, (2015), Expert Choice (EC) is an application program that can be used as one of the tools to help decision makers in making decisions. EC offers several facilities ranging from data input criteria, and several alternative options, up to the determination of objectives. EC is easily operationalized with a simple interface. Another ability provided is being able to perform quantitative and qualitative analysis so that the results are rational. Supported by two-dimensional graphic images make EC more attractive. EC is based on analytic hierarchical methods or processes.

3. RESEARCH METHOD

This study uses primary and secondary data obtained from the company's historical data in 2022 PT Indomarco Adi Prima Stock Point Deket Lamongan based on literature studies from books and journals of previous researchers who discuss productivity analysis. The analysis method can be seen in Fig. 3.

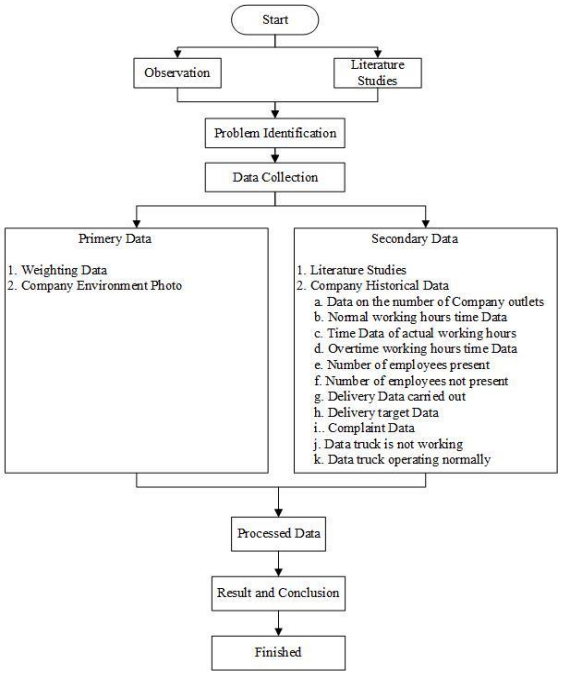

Fig. 3. Flowchart analysis stages

4. RESULT AND DISCUSSION

Productivity Criteria

There are criteria related to the company's productivity level, namely efficiency criteria, effectiveness criteria, and inferential criteria.

1. Efficiency criteria

$$\text{Ratio 1} = \frac{\text{Total delivery executed}}{\text{Number of employees present}}$$

$$\text{Ratio 2} = \frac{\text{Total actual working hours}}{\text{Total normal working hours}} \times 100\%$$

$$\text{Ratio 3} = \frac{\text{Total overtime hours}}{\text{Total normal working hours}} \times 100\%$$

2. Effectiveness criteria

$$\text{Ratio 4} = \frac{\text{Total delivery executed}}{\text{Target delivery amount}} \times 100\%$$

$$\text{Ratio 5} = \frac{\text{Number of complaints}}{\text{Number of shipments}} \times 100\%$$

3. Inferential criteria

$$\text{Ratio 6} = \frac{\text{Total employee absence}}{\text{Number of employee}} \times 100\%$$

$$\text{Ratio 7} = \frac{\text{Total truck out of service}}{\text{Total truck standard operation}} \times 100\%$$

Productivity Weights

The weight of productivity is determined using the Analytical Hierarchy Process (AHP) method with a pairwise comparison scale questionnaire filled in by Stock Point Officer (SPO). The questionnaire results were then processed with ExpertChoice Software and the weighting results were obtained as follows.

Table 2. Weights

Ratio	Weights Value (%)
Ratio 1	13
Ratio 2	5.7
Ratio 3	5.5
Ratio 4	27.8
Ratio 5	24.2
Ratio 6	5
Ratio 7	18.8

Calculation of Productivity Ratio

Calculation of productivity ratios is done to determine the ratio value in each period. The ratio value of each criterion achieved by PT Indomarco Adi Prima Stock Point Deket Lamongan for the period January-December 2022 can be seen as follows.

Table 3. Company data

Period	Total Deliveries Executed	Number of Employees Present	Total Actual Working Hours	Total Normal Working Hours	Total Overtimes Hours	Target Delivery Amount	Number of Complaints	Number of Shipments	Total Employee Absence	Number of Employees	Total Truk Out of Service (Hours)	Total Truck Standard Operations (Hours)
January	1015	417	146	160	4	1200	6	1021	3	420	3	320
February	1027	418	144	160	8	1200	10	1037	2	420	2	320
March	1034	418	150	160	7	1200	8	1042	2	420	4	320
April	1332	522	190	200	14	1500	12	1344	3	525	5	400
May	1040	416	148	160	10	1200	7	1047	4	420	2	320
Jun	1306	522	190	200	8	1500	8	1314	3	525	10	400
July	1029	418	154	160	6	1200	9	1038	2	420	4	320
August	1024	416	150	160	12	1200	4	1028	4	420	4	320
September	1311	522	190	200	8	1500	12	1323	3	525	4	400
October	1039	416	144	160	6	1200	7	1044	4	420	3	320
November	1314	521	185	200	8	1500	12	1322	4	525	4	400
December	1323	523	190	200	14	1500	11	1334	2	525	8	400

Table 4. Productivity ratio value

Period	Ratio						
	1	2 (%)	3 (%)	4 (%)	5 (%)	6 (%)	7 (%)
January	2.434	91.250%	2.500%	84.583%	0.588%	0.714%	0.938%
February	2.457	90.000%	5.000%	85.583%	0.964%	0.476%	0.625%
March	2.474	93.750%	4.375%	86.167%	0.768%	0.476%	1.250%
April	2.552	95.000%	7.000%	88.800%	0.893%	0.571%	1.250%
May	2.500	92.500%	6.250%	86.667%	0.669%	0.952%	0.625%
Jun	2.502	95.000%	4.000%	87.067%	0.609%	0.571%	2.500%
July	2.462	96.250%	3.750%	85.750%	0.867%	0.476%	1.250%
August	2.462	93.750%	7.500%	85.333%	0.389%	0.952%	1.250%
September	2.511	95.000%	4.000%	87.400%	0.907%	0.571%	1.000%
October	2.498	90.000%	3.750%	86.583%	0.670%	0.952%	0.938%
November	2.522	92.500%	4.000%	87.600%	0.908%	0.762%	1.000%
December	2.530	95.000%	7.000%	88.200%	0.825%	0.381%	2.000%

Standard Performance Measurement

Standard performance measurement is the determination of the initial stage value, which in the matrix will be placed at level 3. In this measurement, the value of the initial stage is determined by calculating the average ratio of the criteria during the measurement period.

Table 5. Standard performance value

Ratio	Standard Performance
Ratio 1	2.492
Ratio 2	93.333%

Ratio	Standard Performance
Ratio 3	4.927%
Ratio 4	86.644%
Ratio 5	0.755%
Ratio 6	0.655%
Ratio 7	1.219%

Determination of The Final Target Value

The final goal value is the target of the company that shows the best estimated performance during the coming period with the same conditions and availability of resources when the productivity measurement process begins. In the matrix, the target value will be placed at level 10.

Table 6. Final target value

Ratio	Final Target Value
Ratio 1	2.55
Ratio 2	96.250%
Ratio 3	2.500%
Ratio 4	88.800%
Ratio 5	0.389%
Ratio 6	0.381%
Ratio 7	0.625%

Determination of The Lowest Value

The lowest value of each criterion is an indicator that shows the worst performance of each productivity criterion of PT Indomarco Adi Prima Stock Point Deket Lamongan. The lowest value will be placed at level 0.

Table 7. The lowest value

Ratio	The Lowest Value
Ratio 1	2.434
Ratio 2	90.000%
Ratio 3	7.500%
Ratio 4	84.583%
Ratio 5	0.964%
Ratio 6	0.952%
Ratio 7	2.500%

Calculation Objective Matrix

The formation of the objective matrix includes predetermined indicators, such as the weight of each ratio, standard performance value, final target value, and lowest value. The following is a matrix for the January 2022 period.

Table 8. Objective matrix in January

Efficiency			Effectiveness		Inferential			
Ratio 1	Ratio 2	Ratio 3	Ratio 4	Ratio 5	Ratio 6	Ratio 7	Productivity Criteria	
2.434	91.250%	2.500%	84.583%	0.588%	0.714%	0.938%	Performance	
2.552	**96.250%**	**2.500%**	**88.800%**	**0.389%**	**0.381%**	**0.625%**	**10**	
2.543	95.833%	2.847%	88.492%	0.441%	0.420%	0.710%	**9**	
2.535	95.417%	3.193%	88.184%	0.494%	0.459%	0.795%	**8**	
2.526	95.000%	3.540%	87.876%	0.546%	0.498%	0.879%	**7**	
2.518	94.583%	3.887%	87.568%	0.598%	0.537%	0.964%	**6**	
2.509	94.167%	4.234%	87.260%	0.650%	0.577%	1.049%	**5**	Score
2.500	93.750%	4.580%	86.952%	0.702%	0.616%	1.134%	**4**	
2.492	**93.333%**	**4.927%**	**86.644%**	**0.755%**	**0.655%**	**1.219%**	**3**	
2.473	92.222%	5.785%	85.957%	0.825%	0.754%	1.646%	**2**	
2.453	91.111%	6.642%	85.270%	0.894%	0.853%	2.073%	**1**	
2.434	**90.000%**	**7.500%**	**84.583%**	**0.964%**	**0.952%**	**2.500%**	**0**	
0	1	10	0	6	2	6	Score	
13	5.7	5.5	27.8	24.2	5	18.8	Weight	
0	5.7	55	0	145.2	10	112.8	Value	

	Current	Previous	Index (%)
Performance Indicator	328.7	300	9.57%

Calculation of Productivity Value

The productivity score for each period against each ratio can be obtained by multiplying the score by the weight. The result of the calculation of productivity values can be seen in Table 9.

Table 9. Productivity value

Period	Ratio							**Total**
	1	2 (%)	3 (%)	4 (%)	5 (%)	6 (%)	7 (%)	
January	0	5.7	55	0	145.2	10	112.8	**328.7**
February	13	0	16.5	55.6	0	40	188	**313.1**
March	26	22.8	27.5	55.6	72.6	40	56.4	**300.9**
April	130	39.9	5.5	278	24.2	25	56.4	**559.0**
Mei	52	11.4	5.5	83.4	121	0	188	**461.3**
Jun	52	39.9	33	111,2	145.2	25	0	**406.3**
July	13	57	33	55.6	24.2	40	56.4	**279.2**
August	13	22.8	0	27.8	242	0	56.4	**362.0**
September	65	39.9	33	139	24.2	25	112.8	**438.9**
October	39	0	33	83.4	121	0	131.6	**408.0**
November	130	11.4	33	166.8	24.2	10	112.8	**488.2**
December	104	39.9	5.5	222.4	48.4	50	18.8	**498.0**

Calculation of Productivity Index

The Productivity Index is the percentage value of the increase or decrease in productivity levels for the entire period. The results of the Productivity Index calculation for each period can be seen in the table below.

Table 10. Index productivity

Period	Performance Indicator		Index (%)
	Current	Previous	
January	328.7	300	**9.57**
February	313.1	328.7	**-4.75**
March	300.9	313.1	**-3.90**
April	559	300.9	**85.78**
Mei	461.3	559	**-17.48**
Jun	406.3	461.3	**-11.92**
July	279.2	406.3	**-31.28**
August	362	279.2	**29.66**
September	438.9	362	**21.24**
October	408	438.9	**-7.04**
November	488.2	408	**19.66**
December	489	488.2	**0.16**

Analysis of Productivity Indicators

1. Ratio 1
   In ratio 1, the best achievement result occurred in April, amounting to 2.552, while the worst achievement occurred in January, amounting to 2.434.
2. Ratio 2
   In ratio 2, the best achievement result occurred in July at 96.25%, while the worst achievement occurred in February and October at 90%.
3. Ratio 3
   In ratio 3, the best achievement result occurred in January at 2.5%, while the worst achievement occurred in August at 7.5%.
4. Ratio 4
   In ratio 4, the best achievement result occurred in April at 88.8%, while the worst achievement occurred in January at 84.58%
5. Ratio 5
   In ratio 5, the best achievement result occurred in August, which amounted to 0.39%, while the worst achievement occurred in February, which amounted to 0.96%.
6. Ratio 6
   In ratio 6, the best achievement results occurred in December at 0.38%, while the worst achievement occurred in May, August, and October at 0.95%.
7. Rasio 7
   In ratio 7, the best achievement results occurred in February and May, which amounted to 0.63%, while the worst achievement occurred in June, which amounted to 2.5%.

Analysis of the Productivity Index

Productivity Index analysis is conducted to determine the percentage of increase or decrease in productivity levels in the entire period during measurement.

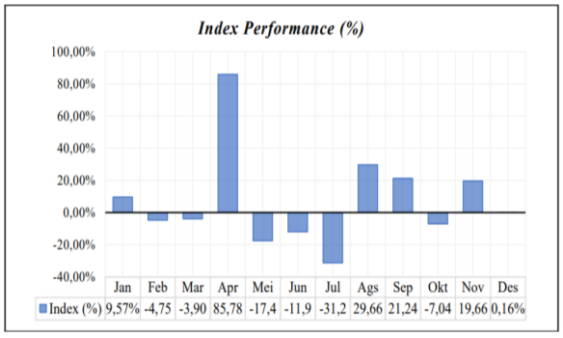

Fig. 3. Performance index

The highest Performance Index value for the period January to December 2022 occurred in April, with an index percentage of 85.78%. The increase in index value in April was because of the seven ratios there were only two bad ratios, namely ratio 3 and ratio 5, while the other ratios had moderate values. The lowest Performance Index value for the period January to December 2022 occurred in July, with an index percentage value of -31.2%. The decrease in the index value above was influenced by the low value of productivity measurements in ratio 1 and ratio 6 with poor value results.

Analyze The Root Cause of The Problem Using RCA

Root cause analysis using a fishbone diagram is done to find out the factors that cause productivity to drop based on the results of the initial analysis of productivity indicators and productivity index from the results of data processing.

Table 11. Productivity value drops

Period	Value
February	-4.75
March	-3.90
May	-17.48
June	-11.92
July	-31.28
October	-7.04

Based on the analysis of productivity indicators, it is concluded that there are ratio indicators that have the worst value and causes the productivity index in the six periods above to decrease, including ratio1, ratio 2, ratio 5, ratio 6, and ratio 7. So it is necessary to analyze the factors causing the problem using fishbone diagram.

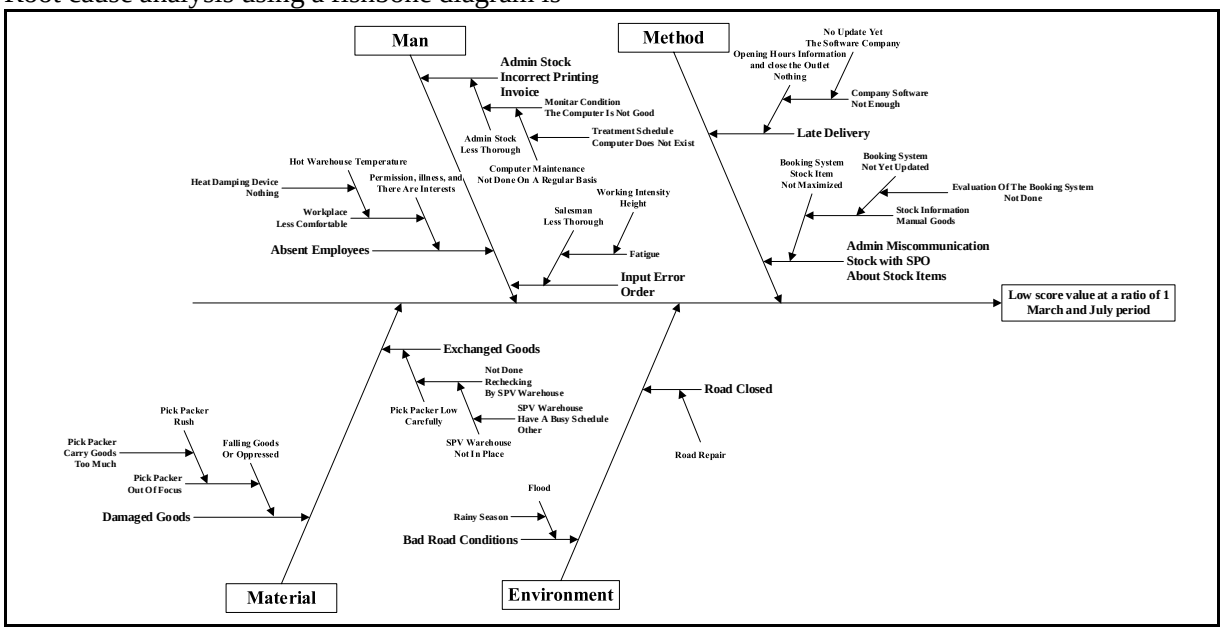

Fig. 4. Fishbone diagram ratio 1

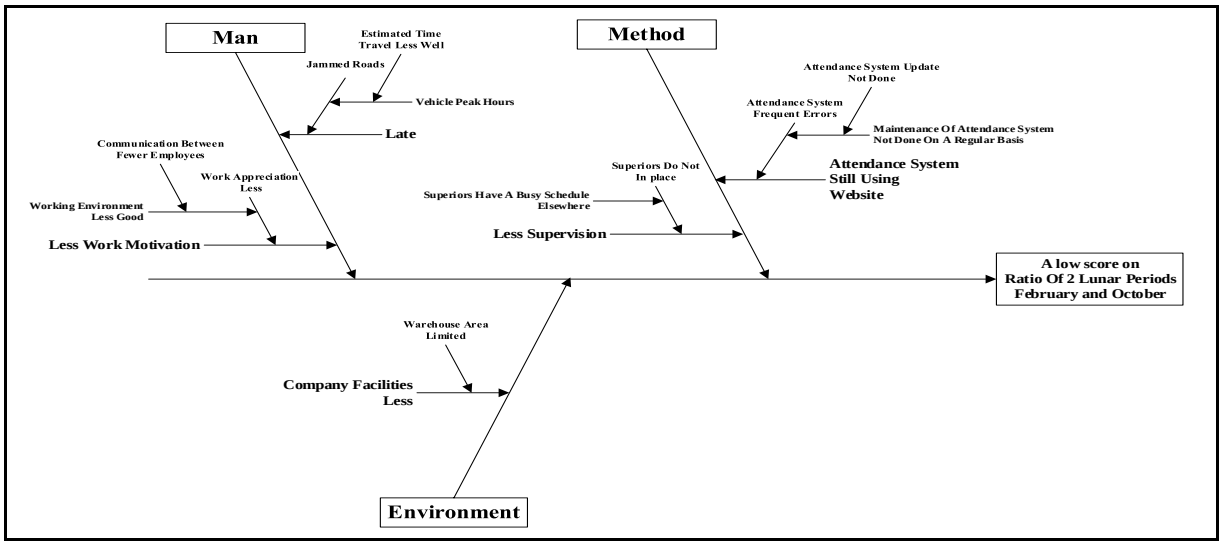

Fig. 5. Fishbone diagram ratio 2

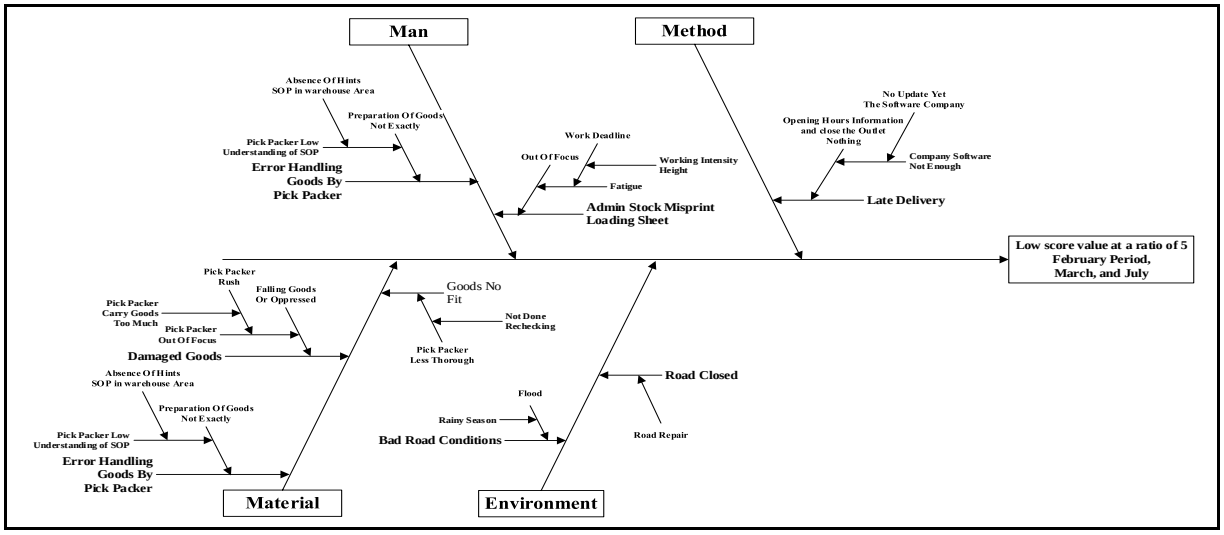

Fig. 6. Fishbone diagram ratio 5

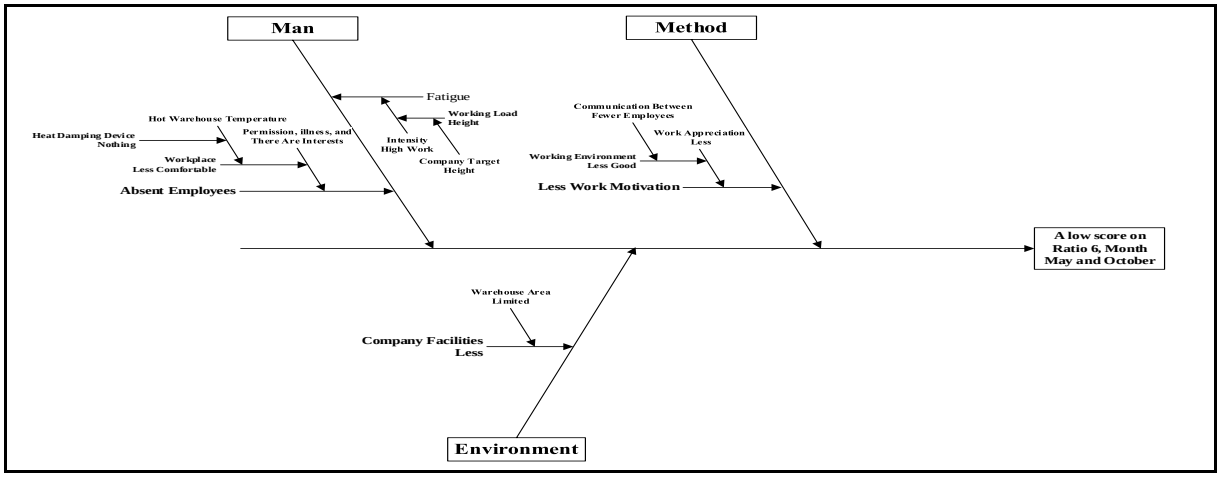

Fig. 7. Fishbone diagram ratio 6

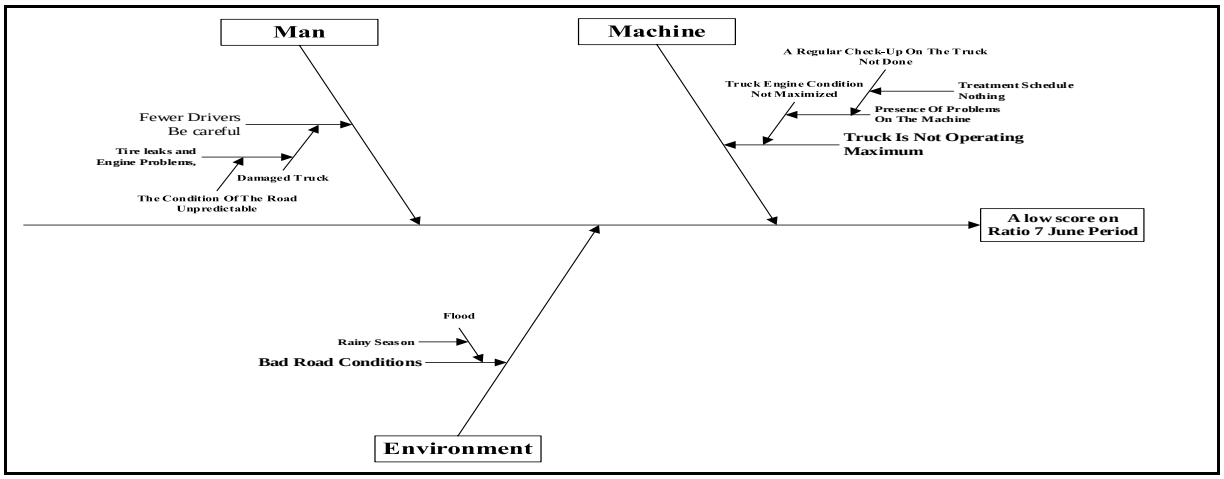

Fig. 8. Fishbone diagram ratio 7

Table 12. Root cause based on fishbone diagram

Ratio	Factor	Root Cause
Ratio 1	Man	Heat reducing device nothing
		Computer maintenance schedule does not exist
		High working intensity
	Method	No updates have been made to the company's software
		Evaluation of the booking system is not carried out
	Material	Pick packer carry too much stuff
		Warehouse supervisor has other busyness
	Environment	Rainy season
		Road repair
Ratio 2	Man	Lack of communication between employees
		Estimated travel time is not good
	Method	Boss has a busy elsewhere
		Attendance system update is not done
	Environment	Limited warehouse area
Ratio 5	Man	Absence of SOP instructions in the warehouse Area
		High working intensity
	Method	No updates have been made to the company's software
	Material	Absence of SOP instructions in the warehouse Area
		Pick packer carry too much stuff
		No rechecking
	Environment	Rainy season
		Road repair
Ratio 6	Man	Heat reducing device nothing
		High company target
	Method	Lack of communication between employees
	Environment	Limited warehouse area
Ratio 7	Man	Road conditions are unpredictable
	Machine	Truck maintenance schedule does not exist
	Environment	Rainy season

5. CONCLUSION

Based on research related to the productivity measurement of PT Indomarco Adi Prima Stock Point Deket Lamongan for the period January 2022 to December 2022, it is known that the productivity level in January has a performance indicator value of 328.7 and a productivity index of 9.57%. In February, the performance indicator value was 313.1, and the productivity index fell from the previous period by -4.75%. In March, the performance indicator value was 300.9, and the productivity index fell from the previous period by -3.90%. April had a performance indicator value of 599, and the productivity index increased from the previous period by 85.78 %. In May, the performance indicator value was 461,3, and the productivity index fell from the previous period by -17.48%. June had a performance indicator value of 406,3, and the productivity index fell from the previous period by -11.92%. July had a performance indicator value of 279.2, and the productivity index fell from the previous period by 31.28%. August had a performance indicator value of 326, and the productivity index increased from the previous period by 29.66%. September had a performance indicator value of 438.9, and the productivity index increased from the previous period by 21.24%. October had a performance indicator value of 408, and the productivity index fell from the previous period by -7.04%. November has a performance indicator value of 488.2, and the productivity index rose from the previous period by 19.66%. In December, the performance indicator value was 489, and the productivity index increased from the previous period by 0.16%. Based on the research that has been done, it is obtained that the factors causing the problem using the Root Cause Analysis (RCA) method with fishbone diagrams are the factors causing the decline in productivity, namely no heat reducer, no computer and truck maintenance schedule, less communication between employees, travel time estimation is not good, attendance system updates are not carried out, limited warehouse area, high work intensity, no instructions for the preparation of goods in the warehouse area, stock goods arrive late, rainy season, road repairs, no periodic checks, and unpredictable road conditions.

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