PRODUCTIVITY ANALYSIS OF OBJECTIVE MATRIX (OMAX) REVIEWED FROM SAFETY AND HEALTH WORKING IN PRODUCTION FLOOR AT CV. GRAND MANUFACTURING INDONESIA

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ABSTRAK

CV Grand Manufacturing Indonesia is a company that produces oil filter, oil filter will be sent to several intansi that have been ordered. The more orders from consumers the higher the targets must be achieved by employees working on the production floor. With the high target of consumers, companies need to prepare and prepare a strategy for employees to avoid work accidents while doing oil filter production. If the company is able to protect its employees while working then the desired production target can be achieved.

As a company that produces oil filters, increased productivity of the company will be affected by employees working on the production floor. Required a method of productivity measurement with the aim to determine the level of productivity based on several existing criteria. The objective matrix method can be used to measure a productivity based on several criteria.

To determine the result of the objective matrix on the basis of occupational safety and health, the calculation looks for the target matrix values of each criterion such as labor productivity, the frequency of work accidents, the severity of work accidents and the effectiveness of employee attendance. After obtaining the target value then converting the weight value, then calculating the interpolation value from level 1 to level 10 after it sums the value of the performance indicator that will be used to determine the productivity index.

Work accidents are very influential on the level of productivity on the production floor. because if the employee has a very severe accident then the company will lose the working day of its employees on the production floor and will result in the resulting production of employees on the production floor will decline. it is a factor that greatly affects the decrease of productivity if every period there is an accident.

Keywords: Occupational Safety and Work, Objective Matrix, Productivity.

1 Introduction

Facing the very tough industry competition today, every company must compete competitively to compete for a good market nationally or internationally. Every company definitely needs human resources to use as an employee. The company is very hopeful for employees to be a good worker in the field of production and employees are expected to help in order to achieve company goals.

Production activity in every company is very important to note. In addition to viewing the production process, the company must pay attention to the people who work on the production floor because in addition to machinery and raw materials, humans play a very important role. The production process will not run smoothly if the company is short of employees. Workplace accidents are one of the factors that lead to the loss of working day employees on the production floor. Companies feel a loss if employees lose, because if employees can not work then the company will experience a decreaseinproductionandlosses.

Large and small losses received by the company depending on how the level of frequency (frequency), severity (crash), working days lost due to accidents and attendance is less due to work accidents. Thus accidents caused by negligence in the work will be very influential in the production process activities and can threaten the survival of the company, in other words accidents received by employees is a factor that causes employee productivity in the work decreases.

Objective Matrix (OMAX) is a method for measuring productivity. Calculating a career using the OMAX method could be a merger of the required criteria. From criteria that have specific values and selected criteria have values based on the level of desire for the purpose of the company. With this method the company can easily determine what it wants to use as a productivity measurement tool.

CV. Grand Manufacturing Indonesia is an intansi or a company engaged in the manufactur industry, this company produces oil filters and spare parts. CV. Grand Manufacturing always get the number of orders from several consumers who counted so much, so oil filter that must be produced by every employee will be more. This makes employees are required to produce goods very much within the timeframe that has been determined. With the production target and the specified working period, each employee is required to produce the goods quickly. By requiring employees to produce oil filters quickly, it is necessary attention from the head of production so that employees do not experience accidents and does not lead to decreased productivity.

2 Study of literature

2.1.Definition of Frequency Rate

The frequency of accidents is a frequent occurrence of accidents in a million working hours of working employees. Occurrence is very influential on the productivity of workers. The smaller the value of accidents experienced by employees in a million jobs the higher the productivity produced. But otherwise if the value of the frequent occurrence of accidents is very large then the resulting productivity will decrease.

2.2. Definition of Severity Rate (Severity)

In Mijn Politie Reglement Sb 1930 No. 341 accidents are divided into 3 levels of severity, ie Dead, Berta and Light. In PP 11/1979 the severity is divided into levels, ie Dead, Weight, Moderate and Light. The severity of the accident can usually be seen from how fatal accidents experienced by employees. To measure the effect of accidents, we must also calculate the severity of accidents for a million working hours of the number of employees working hours.

2.3. Definition of Labor Productivity

Labor productivity as a concept, shows the relationship between the work with the unit of time required to produce the product of a workforce. A worker is considered productive if the workforce is capable of producing more outputs from other labor, for the same time unit. It can be stated that a worker demonstrates a higher level of productivity when the workforce is able to produce products that conform to the specified standards in a shorter time span.

2.4. Definition of the Effectiveness of Employee Attendance

In doing a production every employee must have good enough health, because if employees do not have good health then employees can not be said to be productive in work. Working in bad health can potentially be an accident, because with a bad body condition or illness can make employees work less concentration. The result if employees have an accident then the employee can not enter the work or present in the company to work. Occupational health is very influential on labor productivity, health and productivity there is a very real correlation relationship, a sick worker usually lost productivity work subtly, even the level of productivity often becomes nil altogether.

2.5. Definition of Objective Matrix (OMAX)

OMAX is a partial productivity measurement system developed to monitor productivity in each part of the company with productivity criteria that match the existence of the (objective) part. OMAX combines productivity criteria into an integrated and connected form. The objective matrix method has several steps in the process, the first step is to determine the criteria to be used, then determine the target matrix value from the lowest, standard to high. After obtaining the target value then converting the weight value, then calculating the interpolation value from level 1 to level 10 after it sums the value of the performance indicator that will be used to determine the productivity index.

3 Results and Discussion

3.1. Measurement of Productivity Ratio

Productivity criteria on the production floor of CV Grand Manufacturing Indonesia which has been made in the form of further ratio is calculated. Productivity ratios on each of the production floor criteria. The ratio used is 4:

Ratio 1 = Labor Productivity $= \frac{\text{number of produkction}}{\text{unit of Time}}$

Ratio 2 = Frequency rate $= \frac{\text{Number of Accidents X 1.000.000}}{\text{Working Hours ofPeople}}$

Ratio 3 = Severity Rate $= \frac{\text{Number of Lost Days X 1.000.000}}{\text{Working Hours}}$

Ratio 4 = % presence $= \frac{\text{Lost Working Dyas}}{\text{(Workday employee + day of employee not working)}} \times 100\%$

the results of the calculation of each ratio can be seen in table 1 calculation of each ratio.

Table 1 Productivity Ratio

Bulan	Rasio 1	Rasio 2	Rasio 3	Rasio 4
Januari	30.1	0	0	0
Februari	29.85	700.28	168.07	1.47
Maret	27.48	969.62	224.09	1.81
April	28.94	0	0	0
Mei	31.36	0	0	0
Juni	27.35	672.27	644.26	5.41
Juli	29.88	350.14	56.02	0.49
Agustus	27.54	646.41	140.06	1.13
September	27.48	323.21	196.08	1.58
Oktober	27.87	0	0	0
November	27.85	336.13	56.02	0.47
Desember	27.5	969.62	112.04	0.9
Nilai Terendah	**27.35**	**0**	**0**	**0**
Nilai Rata-rata	**28.68**	**413.97**	**133.05**	**1.11**
Nilai Tertinggi	**31.36**	**969.62**	**644.26**	**5.41**

3.2. Measurement of Performance Indicator

Measurement of performance indicators is the result of the summation of each ratio that has scored and determines the final value of each period. Performance indicator value shows the performance of all the criteria on the production floor of CV Grand Manufacturing Indonesia. One example of performance indicator measurement is as in table 2 which shows the objective matrix table in january month which produces the value of performance indicator.

Table 2 Measurement of Performance Indicator

	Criteria	Ratio 1	Ratio 2	Ratio 3	Ratio 4
	Performance	30.10	0	0	0
SCORE	**10**	31.36	0	0	0
	9	30.96	137.99	44.35	0.37
	8	30.58	275.98	88.7	0.74
	7	30.2	413.97	133.05	1.11
	6	29.82	493.34	206.08	1.72
	5	29.44	572.71	279.11	2.33
	4	29.06	652.08	352.14	2.94
	3	28.68	731.45	425.17	3.55
	2	28.23	810.82	498.2	4.16
	1	27.79	890.19	571.23	4.77
	0	27.35	969.62	644.22	5.41
	SCORE	7	10	10	10
	Weight	23.5	23.5	26.5	26.5
	Value	164.5	235	265	265
				Performance Indicator	929.5

After the calculation of performance indicators on each month obtained various values for performance indicators, the value can be seen in table 3 which as well as the table achievement score of each ratio.

Tabel 3 Achievement of Score Each Ratio and Result of Performance Indicators

Month	Score				Performance Indicator
	Ratio 1	Ratio 2	Ratio 3	Ratio 4	
January	7	10	10	10	**929.5**
February	6	3	7	6	**556**
March	0	0	6	6	**318**
April	4	10	10	10	**859**
May	10	10	10	10	**1000**
June	0	4	0	0	**94**
July	6	7	10	10	**782.5**
August	0	4	7	7	**465**
September	1	8	6	6	**529.5**
October	1	10	10	10	**788.5**
November	1	8	9	9	**688.5**
Desember	0	0	7	8	**397.5**
Total	**36**	**74**	**92**	**92**	

3.3. Calculation of Productivity Index

Calculation of the productivity index is done to determine whether the productivity has increased or decreased in each period. The productivity index is calculated on a monthly basis, from January to December. Productivity index can be seen in 2 kinds of productivity index of previous month and index of productivity to standard value. To facilitate reading the results of productivity index calculations, then the value of productivity index is shown in graphical form.

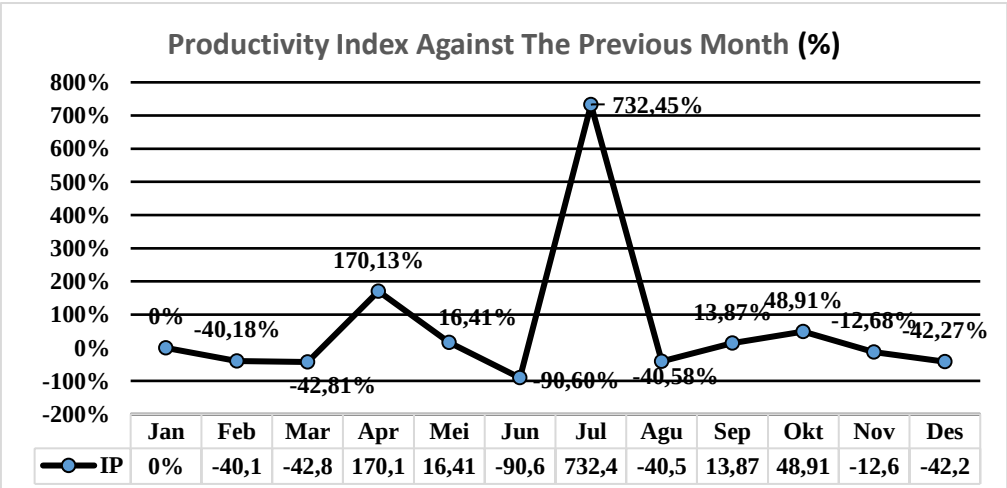


Figure 1 Graph of Productivity Index Against the Previous Month

In addition to performing calculations to determine productivity from the previous month, calculations should also be made to determine productivity against standards. Productivity against the standard can be seen in Figure 2.

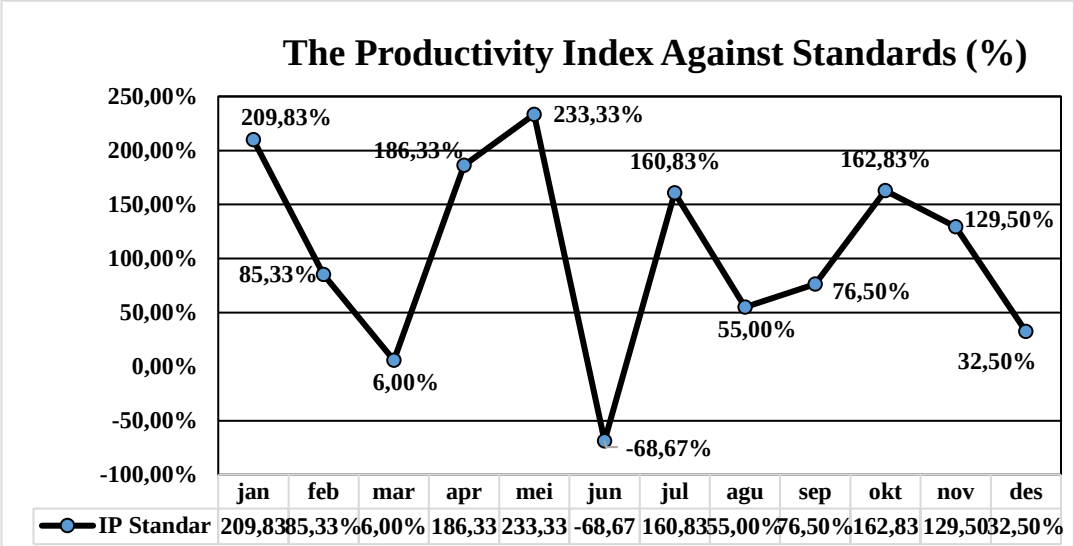


Figure 2 Graph of Productivity Index Against Standards

After obtaining the productivity index value based on the previous month and the productivity index against the standard then done a comparison between the two whether the value of the productivity index always melibihi existing standards or even less than the standard index. The comparison graph of the productivity index value against the previous month and the productivity index against the standard can be seen in Figure 3.

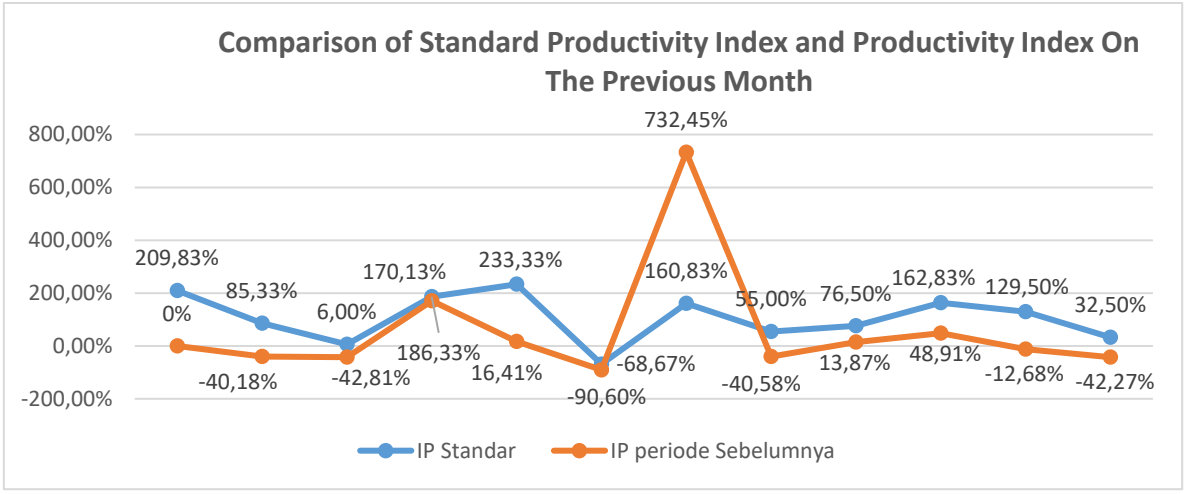


Figure 3. Comparison Graph of Standard Productivity Index and Productivity Index On the New Moon

4 Conclusions and Suggestions

4.1. Conclusions

Work accidents can affect the productivity of the production floor, it can be seen if there is an accident in a certain period then the resulting production will decrease if no accident then the production can increase and make productivity increases. As in the productivity index measurement if the previous accident does not occur and accidents occur in this month then the productivity from the previous month to next month will decrease. Employees who have an accident and if the accident is very severe then the company will lose the working day employees on the production floor, it is a factor that greatly affects the decline in productivity if every period there is an accident.

4.2. Suggestions

The following are the suggestions put forward in this study:

1. 1. Make health services in the company so that if there are employees who have an accident can be directly treated or treated and the effects of accidents do not become more severe.
2. 2. It would be nice for the company to set up safety equipment so that employees can be comfortable and safe while doing their work.
3. The head of the production department should provide guidance on how to work safely / safety talk before the employees do the production process.

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