

The Relationship between the Effectiveness of Work Health and Safety Management and Motivation Achievement with Employee Productivity (Case Study on employee PT. PLN (Persero) Transmission Implementing Unit Bogor)

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Abstract

This study aims to find efforts that can improve employee productivity through assessment of the strength relationship with the effectiveness of health and safety management and achievement motivation. The study was conducted using primary data through a survey using a questionnaire. The study was conducted on 105 employees at PT PLN (Persero) Bogor Transmission Implementing Unit with sampling techniques in the form of proportional random sampling techniques. Data were analyzed by t test, F test, coefficient of determination, and correlation test. This study concluded that, first, there is a positive and medium relationship between the effectiveness of occupational health and safety management with employee productivity with $r_{y1} = 0.513$, supported by the correlation equation $\hat{Y} = 29.869 + 0.532X_1$, meaning that each increase in one unit of work health and safety management effectiveness will improve employee productivity of 0.532. Second, there is a positive and strong relationship between achievement motivation and employee productivity with $r_{y2} = 0.762$ and supported by the correlation equation $Y = -1.224 + 0.956X_2$, meaning that each increase in one unit of achievement motivation will increase employee productivity by 0.956. Third, there is a positive and strong relationship between the effectiveness of occupational health and safety management and achievement motivation together with employee productivity use correlation coefficient show $r_{y12} = 0.773$ supported by the regression equation $Y = -6.605 + 0.154X_1 + 0.859X_2$. The effectiveness of occupational health and safety management and achievement motivation together have contributed to employee productivity by 59.7%.

Keywords

effectiveness of occupational health and safety management; achievement motivation; productivity



I. Introduction

Human resources are the main capital and the biggest asset for successfully and efforts to improve efficiency and achieve the goals of an organization. Human resources have the ability to manage and run the organization to achieve organizational goals. The ability and willingness of human resources in different organizations to manage and execute each individual and is influenced by various factors. Organization must have a goal to be achieved by the organizational members (Niati et al., 2021). Development is a change towards improvement. Changes towards improvement require the mobilization of all human resources and reason to realize what is aspired (Shah et al, 2020). The development of human resources is a process of changing the human resources who belong

to an organization, from one situation to another, which is better to prepare a future responsibility in achieving organizational goals (Werdhiastutie et al, 2020).

PT. PLN (Persero) Bogor Transmission Implementation Unit has the main task which is responsible for carrying out the maintenance of power distribution installations in the work area which includes functions: meter maintenance and protection, channel installation maintenance, ScadaTel maintenance, operation supervision, logistics and environmental management and electricity safety to achieve targets performance, managing Administration and Finance to support plant operations and maintenance activities. Every year PT PLN has a work target of various indicators namely customer perspective, key performance, financial performance, human resources, leadership perspective. Achievement of work productivity of PT. PLN (Persero) Bogor transmission implementing unit gave fluctuating results. The performance results of PT. PLN (Persero) Bogor transmission implementing unit from 2016 to 2018 shows results that there are some work still show low productivity on different indicators each year.

In 2016, there was low productivity in the main performance indicators named Transformer Outage Frequency (TROF) with an achievement of 53.85%, and Transmission Lines Outage Frequency (TLOF) with an achievement of 67%; on financial performance indicators on optimizing maintenance costs with 84.18% achievement. In 2017, there was low productivity in the leadership perspective indicator, namely in the K2 implementation indicator with 92% achievement, in the validity of business data with 94.60% achievement, in the timeliness of the implementation of disorderly follow-up recommendations with 94.60% achievement; and on the main performance indicators on the Transformer Outage Frequency (TROF) indicator with an achievement of 44.44%. In 2018, there was low productivity in the customer perspective indicator, namely the critical MTU replacement indicator with 75.60% achievement; the leadership perspective indicators with indicators of the activity and implementation of work programs and PDKB with 95.43% achievement; and optimizing maintenance costs with an achievement of 74.69%. The productivity results of PT. PLN (Persero) Bogor Transmission Implementation Unit as a whole within the scope of the company can not be separated from the work productivity of individual employees.

Preliminary survey results related to the productivity of employees of PT. PLN (Persero) Bogor Transmission Implementation Unit was conducted on 9 to 10 April 2019 to 30 employees with the results indicate that some employees of PT. PLN (Persero) Bogor Transmission Implementing Unit experiencing problems related to work productivity. Problems that occur in work productivity indicate that employees are less able to effectively utilize the inputs that can be used in work such as the use of costs, labor, materials and equipment as well as support provided by the company and the output produced by employees is not optimal both in terms of quantity of work, quality of work, utilization of facilities, activities carried out and the amount of output produced from each employee's work.

Problems that occur in employee productivity must be addressed immediately so as not to have an impact on the overall low productivity of the institution's work. Human resources must be managed properly and human resource management has an important role in increasing employee productivity. Good management of human resources can increase employee productivity and vice versa. One of the HR management activities of PT. PLN (Persero) Bogor Transmission Implementing Unit is the effectiveness of occupational health and safety management.

Management of occupational health and safety is part of the overall management system that consists of the organizational structure, planning, responsibility,

implementation, achievement, assessment, and maintenance of health and safety policies work in order to control the risks associated with work activities in order to reach the place safe and efficient work being productive (PER.05 / MEN / 1992: 2).

The effectiveness of occupational health and safety management is expected to create safe working conditions, guaranteed safety, reduce work accident rates so as to create work efficiency in terms of energy, time, cost and can improve employee quality and productivity.

Based on these, this study will retest some of the factors thought to be related to employee productivity.

II. Review of Literature

Sutrisno (2016: 104) tell that productivity is the relationship between output (goods or services) and inputs (labor, materials, money). Employee productivity consists of (a) dimensions of output including goods or services in the form of physical output per unit and management effectiveness and (b) input dimensions include (1) labor, (2) materials, (3) money, (4) equipment , and (5) time.

According Sedarmayanti (2011: 57), productivity is a comparison between the results achieved (output) with the overall resources used (input) relating to attitudes and productive mentality such as motivational, disciplined, creative, innovative, dynamic, professional and financial-minded. Productivity consists of two dimensions, namely (a) the output dimension includes work output in the form of individual performance and work environment and (b) the input dimension includes the total costs incurred, labor, material, capital, energy, methods / procedures, equipment.

Based on the theories above, it can be synthesized that employee productivity is a comparison between outputs and resources used by employees. The dimensions of employee productivity include (a) the dimension of output consisting of (1) the number of activities (projects, work, activities), (2) the number of work facilities, (3) the quantity and quality of work and (4) the amount of output generated and (b)) the input dimensions cover (1) labor, (2) costs, (3) materials and equipment, and (4) organizational factors.

According to Ardana, Mujiati and Utama (2012: 208), occupational health and safety management (OHS) is a protection effort aimed at ensuring that workers and others are at work or are always safe and healthy so that every source of production can be used safely and efficient. Occupational health and safety management consists of factors including: (a) technical inspection, (b) OHS supervision, (c) OHS audit, (d) OHS control, (e) risk acceptance, (f) training in the introduction of protective equipment self and K3 awareness, (g) guidance of OHS, (h) OHS practice, and (i) assessment of the results of OHS implementation.

Mangkunegara (2013: 161) states that occupational health and safety management is an effort to create conditions that are safe or safe from suffering, damage and suffering at work and conditions that are free from physical, mental, emotional, or pain disorders caused by the work environment. Occupational health and safety management consists of factors including: (a) establishing OSH system indicators, (b) involving supervisors in the OSH reporting system, (c) developing OSH management procedures, (d) making work safety a work objective, and (e) training employees in OHS supervision.

Based on the above theories, it can be synthesized that the effectiveness of occupational health and safety management is the achievement of organizational goals in making efforts to protect workers so that they are always safe and healthy both physically and mentally so that they can do work safely and efficiently. The dimensions of

occupational health and safety management include: (a) management commitment: seriousness of management in establishing OHS rules/policies and conducting OHS assessments, (b) communication involves involving employees in establishing OHS policies and informing policies set to all employees, (c) OHS monitoring and identification includes monitoring workplace safety and workplace accidents and identifying hazards and number of work accidents, (d) training including training employees about the use of PPE and increasing OSH awareness, and (e) OHS implementation including the availability of PPE equipment, and OHS implementation supervision .

McClelland in Royle and Hall (2012: 25-26) that achievement motivation is the need to achieve achievement that illustrates a person's drive to excel in relation to set standards. Indicators of achievement motivation include (a) risk taking, (b) desire to get feedback on performance, (c) seeking satisfaction with achievement and (d) taking responsibility for their work.

According to Ohizu and Emmanuel (2014: 56), achievement motivation is the drive to work in order to achieve a high standard (standard of excellent) and achieve success in competitive situations. Achievement motivation consists of indicators including: (a) the desire to complete the work based on his personal ability, (b) setting goals with a 'moderate' level of difficulty, (c) calculating risk in acting, and (d) a strong desire to obtain feedback for performance.

Based on the theories above, it can be synthesized that achievement motivation is the drive to work hard to achieve goals, and use their expertise and abilities to achieve goals according to established standards. Dimensions and indicators of achievement motivation include: (a) mastering needs such as an individual who prefers challenging work, thought-oriented, has good management skills and is able to complete tasks already started, (b) has good work orientation like an individual takes proactive attitude towards work and love what is done, get satisfaction from work and pursue self-realization and growth, (c) like competition as someone hopes to win and have a desire to excel than others, (d) realistic thinking like setting goals with a level of difficulty moderate but achievable, consider risks in action, and (e) like performance evaluations such as someone who has a strong desire to obtain feedback on performance.

III. Research Methods

1. Population and Samples

The study population numbered 141 people working at PT PLN (Persero) Bogor Transmission Implementing Unit and 105 workers who were used as research samples.

2. Data Collection Techniques

Data collection using the survey method with questionnaire aids distributed to respondents which was operationalized with conceptual definitions, operational definitions and instrument lines.

3. Data Analysis Techniques

Data were analyzed with descriptive analysis, the classic assumption test that is normality test, homogeneity test, and linearity test. Hypothesis testing uses correlation analysis, simple and multiple linear regression analysis, coefficient of determination coefficient of determination, t test and f test.

IV. Results and Discussion

4.1 Results

a. Description Data

1. Employee Productivity Variable with 25 Valid Statement Items

Table 1. Employee Productivity Statistics

Type Description	Score
Number of Respondents (N)	105
Score Maximum	117
Score Minimum	50
Average score (<i>mean</i>)	76,26
Standard Deviation (standar Deviasi)	16,49
Frequency distribution (<i>varians</i>)	272,12
Scores modus (<i>modus</i>)	55
Range (<i>range</i>)	67
Many Classes	7
Class Length	10

The results of the analysis of employee productivity data descriptions obtained an average of 76.26, a median of 76, a mode of 55, a standard deviation of 16.49, a variant of 272.12, a range of 67, the lowest data of 50 and the highest data of 117. The table and graph of the distribution of employee productivity frequencies are as follows.

Table 2. Frequency Distribution of Employee Productivity Variables

No.	Interval Class	Frequency	Percentage (%)
1.	50 – 59	24	22,9
2.	60 – 69	18	17,1
3.	70 – 79	19	18,1
4.	80 – 89	17	16,2
5.	90 – 99	17	16,2
6.	100 – 109	8	7,6
7.	110 – 117	2	1,9
	amount	105	100

The results of employee productivity frequency distribution are known that the lowest frequency is 1.9% with a score of 110 - 117. The highest frequency is 22.6% with a score of 50-59.

2. K3 Management Effectiveness Variable with 22 Valid Statements

Table 3. Management Effectiveness Statistics K3

Type Description	Score
Number of Respondents (N)	105
Score Maximum	110
Score Minimum	56
Average score (<i>mean</i>)	87,06
Standard Deviation (standar Deviasi)	15,82

Frequency distribution (<i>varians</i>)	250,28
Scores modus (<i>modus</i>)	78
Range (<i>range</i>)	54
Many Classes	7
Class Length	8

The results of the analysis of the description of the effectiveness of occupational health and safety management data obtained an average of 87.06, a median of 88, a mode of 78, a standard deviation of 15.82, a variant of 250.28, a range of 54, the lowest data of 56 and data the highest is 110. Table and graph of the frequency distribution of effectiveness of occupational health and safety management are described as follows.

Table 4. Frequency Distribution of the Effectiveness of Work Health and safety Management

No.	Interval Class	Frequency	Percentage (%)
1.	56 – 63	6	5,71
2.	64 – 71	15	14,29
3.	72 - 79	17	16,20
4.	80 – 87	13	12,38
5.	88 – 95	15	14,28
6.	96 – 103	15	14,28
7.	104 – 110	24	22,86
	amount	105	100

The results of the frequency distribution of the effectiveness of occupational health and safety management are known that the lowest frequency is 5.7% with a score of 56 - 63. The highest frequency is 22.86% with a score of 104-110.

3. Achievement Motivation Variable with 26 Items Valid Statement

Table 5. Achievement Motivation Statistics

Type Description	Score
Number of Respondents (N)	105
Score Maximum	106
Score Minimum	57
Average score (<i>mean</i>)	81,03
Standard Deviation (<i>standar Deviasi</i>)	13,15
Frequency distribution (<i>varians</i>)	172,99
Scores modus (<i>modus</i>)	62
Range (<i>range</i>)	49
Many Classes	7
Class Length	7

The results of the analysis of achievement motivation data description obtained an average of 81.03, a median of 79, mode of 78, standard deviation of 13.15, variance of 172.99, range of 49, lowest data of 57 and highest data of 106. The table and graph of the frequency distribution of achievement motivation are presented as follows.

Table 6. Frequency Distribution of Achievement Motivation Variables

No.	Interval Class	Frequency	Percentage (%)
1.	57 – 63	12	11,43
2.	64 – 70	11	10,48
3.	71 – 77	14	13,33
4.	78 – 84	27	25,71
5.	85 – 91	15	14,29
6.	92 – 98	19	18,09
7.	99 - 106	7	6,67
	amount	105	100

The results of the distribution of achievement motivation frequency are known that the lowest frequency is 6.67% with a score of 99 - 106. The highest frequency is 25.71% with a score of 78-84.

b. Classical Assumption Test

1. Normality Test

Table 7. Summary of the Estimation Error Test Normality

No	Galat	L_{count}	L_{table}
1.	Y atas X_1	0,0860	0,0864
2.	Y atas X_2	0,0850	0,0864
Normal Requirements: $L_{count} < L_{table}$ (Lilliefors)			

Testing the estimated error of regression Y over X_1 produces a maximum Lhitung price of 0.0860 while the L_{table} at the alpha level of 0.05 obtained a value of 0.0864. That is, $L_{count} < L_{table}$ or $0.0860 < 0.0864$. Thus it can be concluded that the estimated error Y over X_1 is normally distributed.

Testing the estimated error of regression Y over X_2 yielded a maximum Lhitung price of 0.0850 while the L_{table} at the alpha level of 0.05 obtained a value of 0.0864. That is, $L_{hitung} < L_{table}$ or $0.0850 < 0.0864$. Thus it can be concluded that the estimated error Y over X_2 is normally distributed.

2. Homogeneity Test

Table 8. Summary of the Test of Homogeneity of Variance of Regression Y over X_1 and Y over X_2

No.	Variance	χ^2_{count}	χ^2_{table}
1.	Y atas X_1	26,327	127,69
2.	Y atas X_2	86,119	127,69
Normal Requirements: $\chi^2_{count} < \chi^2_{table}$			

Homogeneity test used Bartlett test steps. Testing the regression variance of Y over X_1 produces a price of χ^2 arithmetic of 26.332 while χ^2_{table} at the alpha level of significance 0.05 with $df = 103$ obtained a value of 127.69. The results showed that $\chi^2_{count} < \chi^2_{table}$ or $26,327 < 127.69$. Thus it can be concluded that the Y variance over X_1 is homogeneous.

Testing the regression variance of Y over X2 produces a value of itung2count of 86.119 while χ^2_{table} at the alpha level of 0.05 with df = 103 obtained a value of 127.69. The results showed that itung2 count $< \chi^2_{table}$ or $86.119 < 127.69$. Thus it can be concluded that the variance of Y over X2 is homogeneous.

3. Linearity Test

a) Linearity test of K3 management effectiveness with employee productivity

Table 9. Y Regression Linearity Test for X1

Variant Resources	Dk	F _{count}	F _{table}	
			0,05	0,01
Tuna Cokok (TC)	12	1,426 ^{ns}	1,82	2,39
Galat/ Mistake (G)	91			

From the table above, it can be seen that the equation of the data pair regression between the effectiveness of occupational health and safety management and employee productivity is linear, because the Fcount obtained is smaller than Ftable ($1,426 < 1,82$).

b) Linearity test of achievement motivation with employee productivity

Table 10. Variance Analysis Table (ANOVA) For Tests of Significance and Regression
Linearity = $-1.224 + 0.956X_2$

Variant Resources	Dk	F _{count}	F _{table}	
			0,05	0,01
Tuna Cokok (TC)	15	1,532 ^{ns}	1,79	2,25
Galat/ Mistake (G)	88			

From the table above, it can be seen that the data paired regression equation between achievement motivation and employee productivity is linear, because the Fcount obtained is smaller than Ftable ($1,532 < 1,79$).

4. Hypothesis Testing

a) The relationship between the effectiveness of K3 management with employee productivity

Table 11. Correlation Test Results Between Variables X1 with Y

r _{yl}	T _{count}	t _{table}	
		0,05	0,01
0,513	2,000	1,983	2,617

The results of the "t" test analysis obtained a tcount of 2,000. The results of a comparison between t arithmetic with t table at $\alpha = 0.05$ obtained that $t \text{ arithmetic} > t \text{ table}$ ($2,000 > 1.983$). The results show that the correlation coefficient between the effectiveness of occupational health and safety management (variable X1) and employee productivity (variable Y) is very significant.

The results of this simple relationship analysis show that there is a positive relationship between the effectiveness of occupational health and safety management and employee productivity. Thus it can be concluded that the more effective the management of occupational health and safety management, the higher the employee productivity.

b) The relationship between achievement motivation and employee productivity

Table 12. Correlation Test Results Between Variables X2 with Y

r_{y2}	T_{count}	t_{table}	
		0,05	0,01
0,762	11,958	1,983	2,617

The results of the analysis of the "t test" obtained the t-count of 11.958. The results of a comparison between t arithmetic with t table at $\alpha = 0.05$ obtained that $t \text{ arithmetic} > t \text{ table}$ (1.983). The results show that the correlation coefficient between achievement motivation (variable X2) and employee productivity (variable Y) is very significant.

The results of this simple relationship analysis show that there is a positive relationship between achievement motivation and employee productivity. Thus it can be concluded that the more motivation for achievement increases, the higher employee productivity.

c) The relationship between the effectiveness of K3 management and achievement motivation together with employee productivity

The results of the multiple regression analysis between pairs of effectiveness and safety management of occupational health (X1) and achievement motivation (X2) together with employee productivity (Y), it is known that the multiple regression coefficient $b_1 = 0.154$ and $b_2 = 0.857$ with a constant value of a of $-6,605$. The relationship between the effectiveness and safety management variables at work (X1) and achievement motivation (X2) together with employee productivity (Y) is illustrated by the regression equation, namely: $= -6,605 + 0,154X_1 + 0,859X_2$.

Table 13. Results of Multiple Regression Analysis

ANOVA ^a						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	16897.210	2	8448.605	75.574	.000 ^b
	Residual	11402.848	102	111.793		
	Total	28300.057	104			
a. Dependent Variable: Productivity						
b. Predictors: (Constant), Motivation_achievement, Management_K3						

Table 14. Test Results F

r_{y12}	F_{count}	F_{table}	
		0,05	0,01
0,773	75,574	3,07	4,78

Analysis of multiple correlation pairs of data on the effectiveness of occupational health and safety management and achievement motivation together with employee productivity produces a r_{12} double correlation coefficient of 0.773. The results of the analysis show that the effectiveness of occupational health and safety management and achievement motivation together have a positive relationship with employee productivity.

1) Partial Correlation Analysis

The relationship between one independent variable and the dependent variable in the condition that the other independent variable is controlled (fixed), partial correlation analysis is performed. Partial correlation analysis was carried out between variable Y and variable X1 under condition that variable X2 was controlled (fixed) with the following results.

Table 15. Results of Partial Correlation Tests

Correlations				
Control Variables			manajemen_K3	Produktivitas
Motivasi_berprestasi	manajemen_K3	Correlation	1.000	.205
		Significance (2-tailed)	.	.037
		df	0	102
Produktivitas	manajemen_K3	Correlation	.205	1.000
		Significance (2-tailed)	.037	.
		df	102	0
Control Variables			Mptivasi_berpresasi	Produktivitas
manajemen_K3	Mptivasi_berprestasi	Correlation	1.000	.670
		Significance (2-tailed)	.	.000
		Df	0	102
Produktivitas	Mptivasi_berprestasi	Correlation	.670	1.000
		Significance (2-tailed)	.000	.
		Df	102	0

The calculation results obtained a magnitude of 1.2 $r_{y1.2}$. Significance test of partial correlation coefficients using statistical tests to obtain the results of Sig. 0.037. The results of the comparison with a significance level of 0.05 obtained that Sig. 0.037 < 0.05. Thus the partial correlation coefficient $r_{y1.2}$ can be declared very significant. This means that the effectiveness of occupational health and safety management has a very significant contribution (meaning) to increasing employee productivity. The relationship between the effectiveness of occupational health and safety management with employee productivity is not influenced by achievement motivation.

Partial correlation analysis is performed between variable Y with variable X2 under condition that variable X1 is controlled (fixed). The calculation results obtained a magnitude of $r_{y2.1}$ of 0.670. Significance test of partial correlation coefficient $r_{y2.1}$ using statistical tests to obtain the results of Sig. 0,000. The results of the comparison with a significance level of 0.05 obtained that Sig. 0,000 < 0.05. Thus the partial correlation coefficient $r_{y2.1}$ can be stated to be very significant. This means that achievement motivation contributes significantly to employee productivity. The relationship between achievement motivation and employee productivity is not influenced by the effectiveness of occupational health and safety management.

2) Testing Indicator Analysis

Table 16. Variable Dimension Correlation Matrix

Variabel		Y							
Variabel	Dimensi	Y ₁	Y ₂	Y ₃	Y ₄	Y ₅	Y ₆	Y ₇	
X ₁	X _{1.1}	0,438	0,135	0,363	0,430	0,450	0,221	0,407	0
	X _{1.2}	0,447	0,102	0,389	0,361	0,390	0,187	0,329	0
	X _{1.3}	0,307	0,050	0,341	0,261	0,296	0,151	0,249	0
	X _{1.4}	0,323	0,077	0,365	0,258	0,347	0,226	0,313	0
	X _{1.5}	0,346	0,115	0,336	0,325	0,419	0,287	0,475	0
X ₂	X _{2.1}	0,499	0,266	0,427	0,502	0,551	0,459	0,637	0
	X _{2.2}	0,519	0,343	0,450	0,488	0,542	0,414	0,592	0
	X _{2.3}	0,446	0,248	0,419	0,370	0,563	0,428	0,544	0
	X _{2.4}	0,534	0,163	0,564	0,521	0,546	0,508	0,561	0
	X _{2.5}	0,433	0,206	0,387	0,419	0,452	0,467	0,544	0
	X _{2.6}	0,256	0,189	0,338	0,383	0,425	0,296	0,411	0

Based on the table above it can be seen that as many as 2 correlation values are included in the strong criteria, 42 moderate correlation values, 35 weak correlation values, and 9 very weak correlation values. The explanation of the correlation values that are more than the value of 0.600 will be described as follows:

1. The dimension that has the strongest relationship is the dimension of achievement motivation in the form of having personal responsibility (X2.1) with the material and equipment dimensions of employee productivity variables (Y7) with the correlation coefficient value obtained by the relationship between the dimensions in question amounted to 0.637 entered in the strong category.
2. Dimensions of personal responsibility of the achievement motivation variable (X2.1) with the organizational factor dimension (Y8) with the resulting correlation coefficient of 0.604.

4.2 Discussion

a. The Relationship between the Effectiveness of K3 Management with Employee Productivity

In accordance with the research hypothesis, the relationship between the effectiveness of safety management and occupational health with employee productivity using product moment correlation techniques obtained correlation coefficient values of $r_{y1} = 0.513$. This means that there is a positive relationship between the effectiveness of occupational health and safety management and employee productivity. The strength of the relationship between the effectiveness of occupational health and safety management and employee productivity in the category of "Medium" because the value of $r_{y1} = 0.513$ is between the value of 0.400 - 0.599 (Medium).

The effectiveness of occupational health and safety management is a measure of the effectiveness of the implementation of OHS training, monitoring and controlling the work environment and OHS supervision. Safety training held by the company aims to train employees in avoiding work accidents and protect themselves in the event of work accidents. Occupational health and safety training makes employees become more trained and skilled and more careful in doing their work so that employees can do work smoothly and work is completed on time according to the specified schedule. In addition, monitoring and identification of occupational health and safety can form a safe, comfortable and adequate work environment that will support the work performance of employees and create a pleasant working atmosphere so that employees will work more actively, produce quality work and can finish work on time. This means that the effectiveness of occupational health and safety management carried out by the company can increase

knowledge and awareness about K3 and establish a conducive work environment that can support employees to work better.

The results of this study are supported by research conducted by Muhammad Nicky Has and Ade Irma Susanty (2016) in his study entitled Health and Safety Management Influence on Employees' productivity, *Actual Problems of Economics* Vol. 3, No. 177. The results of the product moment correlation analysis were obtained (r) of 0.891 determinant coefficients (r²) of 0.786 and the regression equation formed was = $-0.006 + 0.979X$ (Has and Susanty, 2016: 300).

b. The Relationship between Achievement Motivation and Employee Productivity

In accordance with the research hypothesis, the relationship between achievement motivation and employee productivity using product moment correlation techniques obtained correlation coefficient $r^2 = 0.637$. This means that there is a positive relationship between achievement motivation and employee productivity. The strength of the relationship between achievement motivation and employee productivity in the category of "strong" because the value of $r^2 = 0.637$ is between the value of 0.600-0.799 (Strong).

Motivation encourages actions by employees. Achievement motivation is manifested in the form of businesses and actions with various effective efforts that affect the optimization of the potential of the individual. Someone who has high achievement motivation then has good management skills and is able to complete the task has begun, and has a good work orientation and proactive towards work and love what is done. The achievement motivation of employees will bring up ideas or ideas, desires and efforts to carry out activities effectively and efficiently by utilizing existing resources in the company both costs and materials and equipment effectively to produce work results with appropriate quantity and quality. to the standards set by the work. This means that with the achievement motivation possessed by employees, employees can be able to use resources effectively to produce work optimally.

The results of this study are in line with research conducted by Lalu Alwan Wijaya, Siti Nurmayanti and L.M. Furkan (2017) with the title Influence of situational leadership style, work environment and achievement motivation on the work productivity of state junior high school teachers in Sub Rayon 16 Terara, East Lombok Regency, *Journal of Magister Management Mataram University* Vol. 6, No. 1. The results showed that achievement motivation had a significant and positive effect on teacher productivity with a regression coefficient of 0.404 and based on the path analysis obtained the equation = $0.069 + \epsilon$ (Wijaya et al., 2017: 1).

c. The Relationship between the Effectiveness of K3 Management and Achievement Motivation Together with Employee Productivity

In accordance with the research hypothesis, the relationship between the effectiveness of safety management and occupational health and achievement motivation together with employee productivity using multiple correlation techniques obtained by the multiple correlation coefficient $r_{12} = 0.773$ which is positive. This means that there is a positive relationship between the effectiveness of occupational health and safety management and achievement motivation together with employee productivity. The strength of the relationship between the effectiveness of occupational health and safety management and achievement motivation together with employee productivity is included in the "Strong" category because the value of $r_{12} = 0.773$ is between the value of 0.600–0.799 (Strong).

Research that examines the effect of the effectiveness of occupational health and safety management together on employee productivity has never been done before. Relevant research results examine the effect of occupational health and safety management partially on employee productivity. The research of Nikita Kinanthi Putri and Fetty Poerwita Sary (2015) with the title Effect of occupational safety on the productivity of the employees of the Cold Rolling Mill PT. Krakatau Steel (Persero) Tbk, e-proceeding of Management Vol. 2 No.

The results show that work safety has a significant and positive effect on employee productivity with $r_y = 0.488$ and the regression equation $= 0.984 + 0.569X$ (Putri and Sary: 2015: 115).

V. Conclusion

1. There is a positive, very significant and moderate relationship between the effectiveness of occupational health and safety management and employee productivity. The strength of the relationship between the effectiveness of occupational health and safety management with employee productivity is indicated by the correlation coefficient $r_{y1} = 0.513$ and the effectiveness of occupational health and safety management contributes 26.3% to employee productivity.
2. There is a positive, very significant and strong relationship between achievement motivation and employee productivity. The strength of the relationship between achievement motivation and employee productivity is indicated by the correlation coefficient $r_{y2} = 0.762$ and achievement motivation contributes 58.1% to employee productivity.
3. There is a positive, very significant and strong relationship between the effectiveness of occupational health and safety management and achievement motivation together with employee productivity as indicated by the correlation coefficient $r_{y12} = 0.773$ and the effectiveness of occupational health and safety management and achievement motivation together a contribution of 59.7% to employee productivity.

Implications

1. Efforts to increase employee productivity through increasing the effectiveness of occupational health and safety management
The effectiveness of occupational health and safety management needs to be improved so that employees can produce higher productivity. The implementation of occupational health and safety management that is carried out effectively can provide a sense of security for employees so that employees can do work with focus and do work according to the company's work targets. Risks that occur in a job cause insecurity that can cause anxiety to employees so that employees do not focus on working. Through K3 monitoring and identification, the risks that exist in the workplace can be identified and management in carrying out various programs to prevent work accidents.
2. Efforts to increase employee productivity through increased motivation to excel
Achievement motivation needs to be improved so that employees can produce higher productivity. Achievement motivation is the desires that arise from within someone to get results as targeted. Employees feel happy if what is targeted can be achieved so that employees have the desire to make more effort so that what has been targeted can be achieved. The results showed that personal responsibility owned by employees has the strongest relationship with the ability of employees to use materials and equipment at work. The management should increase the ability and skills of employees so that the

personal responsibility of employees to be increased which can have an impact on increasing employee productivity.

3. Efforts to increase employee productivity through increasing the effectiveness of work health and safety management and achievement motivation together
The effectiveness of occupational health and safety management is an external driving factor on the part of company management, while achievement motivation is a factor that can affect employee productivity sourced from within employees. The combination of external and internal factors can be an aspect that can further increase employee productivity optimally. Work health and safety management programs that are carried out effectively can influence employee attitudes and perceptions about hazards in the workplace so that employees feel safer and focus on work targets.

Suggestion

1. Suggestions for Companies

Conduct Education and Training Motivation of achievement, job expansion (Job Enlargement), variations in work (Job Enrichment), job design (Job Design), promotion in order to increase proactive attitudes at work, discipline, maintaining commitment, accountability, performance, work productivity and responsibility high responsibility on the company.

2. Suggestions for Company Leaders

- a. Provide strict rules for increasing personal responsibility.
- b. Conduct evaluation and supervision in order to increase personal responsibility.
- c. Give autonomy to employees which aims to make employees feel more given the responsibility and authority in making decisions in the company.
- d. Encourage risk taking, if there are projects that are at high risk, then employees are encouraged to be more ambitious so they want to try something new.
- e. Give rewards for increasing personal responsibility.

3. Advice for Employees

- a. Comply with all policies and regulations related to Occupational Health and safety.
- b. Follow with pleasure employee development programs such as education and training, and promotion.

4. Suggestions for Other Researchers

- a. Other researchers should conduct similar studies with a larger sample size.
- b. Other researchers should study other variables such as work environment, work discipline, communication, organizational culture and others that affect employee productivity in addition to the effectiveness of OSH management and achievement motivation.

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