

The Influence of Occupational Health and Safety and the Work Environment on Worker Productivity

Dhea Rosita K^{1*}, Syabikah Intan A², Moch Alfatun J³, Nikko Rozy⁴

Universitas Swadaya Gunung Jati, Cirebon, Indonesia^{1*234}

Email: dhearositaa@gmail.com^{1*}, syabikaha@gmail.com², alfatunjouhar06@gmail.com³,
cheers12@gmail.com⁴

ABSTRACT

The aim of this research is to determine how much influence Occupational Safety and Health and the Work Environment influence Worker Productivity. This research uses primary data, namely a questionnaire distributed to 55 PT Arteria Daya Mulya Cirebon. Data analysis methods use Instrument Tests including Validity Tests, Reliability Tests, Classical Assumption Tests including Normality Tests, Multicollinearity Tests, Regression Analysis Tests including Multiple Linear Regression Analysis, Determination Coefficients, and Hypothesis Tests including T Tests (partial) and F Tests (simultaneous) which was processed using the IBM SPSS version 23.0 for Windows application. The research results show that Occupational Health and Safety has a significant effect of $0.000 < 0.05$ and the calculated t value $> t$ table ($9.991 > 0.1674$), meaning that H_0 is rejected and H_a is accepted. So it can be concluded that occupational health and safety variables have a positive and significant effect on worker productivity. Then the Work Environment has a positive and significant effect on Worker Productivity with a significant value of $0.000 < 0.05$ and a calculated t value $> t$ table ($11.735 > 1.674$), meaning that H_0 is rejected and H_a is accepted. So it can be concluded that the Work Environment variable has a positive and significant effect on Worker Productivity. Occupational Health and Safety and the Work Environment together (simultaneously) have a significant positive effect on Worker Productivity as seen from the significant value of $0.000 < 0.05$ and the calculated f value $> f$ table ($82,690 > 3.17$), meaning that H_0 is rejected and H_a , accepted. Thus, it can be concluded that the Occupational Health and Safety and Work Environment variables together have a positive and significant influence on Worker Productivity with an adjusted R square value of 76.1%.

Keywords: Occupational Safety and Health, Work Environment, Worker Productivity.

INTRODUCTION

Occupational safety and health problems are generally identified with an accident. In fact, a company can be claimed badly if a work accident occurs in its work area. Companies tend to think that K3 issues are only the responsibility of the occupational safety and health workers, even though the implementation of occupational safety and health is the collective responsibility of all workers. Fulfillment of occupational safety and health should not only be considered as a requirement or complement, but as one of the crucial things in a production business. In international companies, implementing occupational safety and health is a main activity in every aspect of activities in the company. Executorpart or unit of work. This is done because implementing work standards that meet Occupational Safety and Health requirements start from applying them to oneself. A good company will implement Occupational Safety and Health well and correctly, implemented Occupational Safety and Health in companies are not directly occupational safety and health

officers, but rather the people responsible for each part or unit of work. This is done because implementing work standards that meet occupational safety and health requirements start from applying them to oneself. A good company will implement occupational safety and health well and correctly, implemented occupational safety and health well and correctly by the company will ensure occupational safety and health, so that workers who work feel safe and avoid work accidents, with this situation it is hoped that productivity, satisfaction and loyalty workers' jobs are created (Hidayat, 2015).

PT. Arteria Daya Mulia Cirebon is located in a designated location including City Area Section III, namely the industrial development center in accordance with the City Spatial Plan of Cirebon City. The technology used by PT. Arteria Daya Mulia Cirebon is modern technology and uses machines that have the potential to produce quite high production capacities (Aeni & Fermania, 2020). Until 2014, there were 30 cases of work accidents at PT. Arteria Daya Mulia Cirebon, and 90% of these accidents are caused by poor occupational safety and health behaviour. Case example: A worker repairs a damaged machine on the machine roll, but the machine is not turned off, so the right hand enters the roll. Every company wants zero work accident rates, regardless of last year's decline. Thus, the K3 behavior of PT. Arteria Daya Mulia Cirebon is still lacking (Aeni & Fermania, 2020).

Several previous studies stated that occupational safety and health influences workers' work productivity (Ihwanul Muthohirin, 2021) (Kartikasari & Swasto, 2019) (Wahyuni et al., 2018) (Busyairi et al., 2014) (Ihwanul Muthohirin, 2019) (Hidayatullah & Tjahjawati, 2017) (Anggraeini, 2014). However, there are also studies which state that occupational safety and health have no effect on workers' work productivity (Parashakti & Putriawati, 2020).

Initial studies on the research object identified that the problem faced by the company was the lack of awareness of workers in implementing occupational health and safety in following applicable standard operating procedures (SOP), which would result in accidents/incidents. Work-related accidents/incidents can occur at any time. Accidents or unwanted incidents can cause injuries, production disruptions, and result in loss of working hours. This is important to pay attention to considering that companies attach great importance to occupational safety and health in order to minimize the number of work accidents.

METHOD

The type of this research was quantitative research. The reason of this research is systematic scientific research on parts and phenomena and their relationship to the influence between variables. Determining the number of samples can be done using statistical calculations, namely by using the Slovin Formula. This formula was used to determine the sample size from a known population, namely 64 respondents. Based on the total population of workers at PT. Arteria Daya Mulia Cirebon has 64 workers, then the sample used was 55 workers.

This research was conducted on 55 workers at PT. Arteria Daya Mulia Cirebon through distributing questionnaires. The variables observed in this research consist of occupational safety and health with indicators of procedures, work protective equipment, work authority, use of work equipment, health financing and health services. Work environment variables with indicators of air, sound, cleanliness, facilities, lighting, security and room size. Meanwhile, for the worker productivity variable, the indicators consist of natural resource efficiency, work discipline, working in teams, work ethics, work motivation, worker supervision regarding work, and work discipline. Data was collected by distributing questionnaires and literature studies. The questionnaire was developed from the

indicators for each variable that was observed. Data testing was carried out using Instrument Tests including Validity Tests, Reliability Tests, Classical Assumption Tests including Normality Tests, Multicollinearity Tests, Regression Analysis Tests including Multiple Linear Regression Analysis, Coefficient of Determination, and Hypothesis Tests including T Test (partial) and F Test (simultaneous).

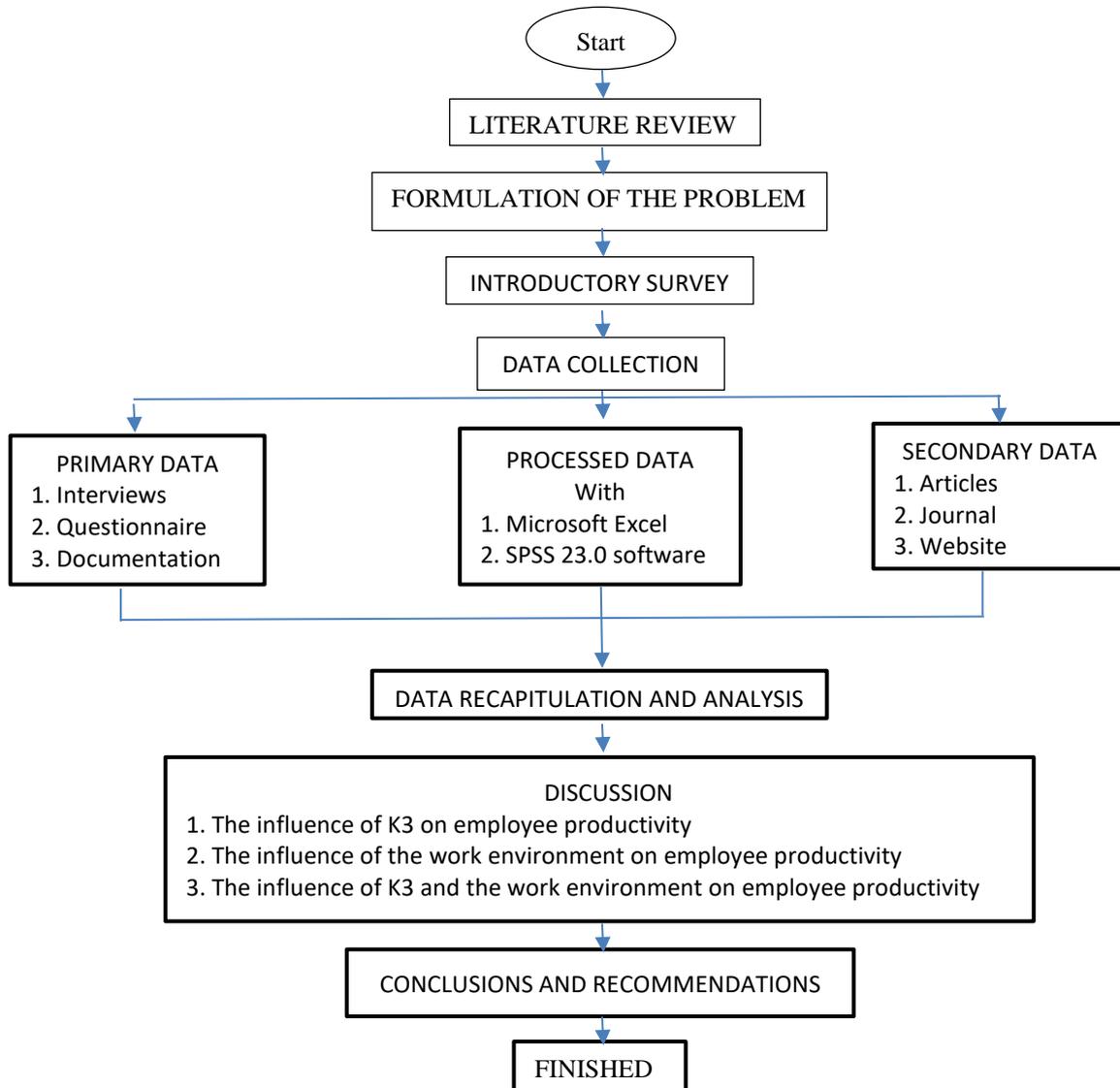


Figure 1 Framework of Thought

RESULTS AND DISCUSSION

1. Respondent characteristics

Data on workers at PT. Arteria Daya Mulia Cirebon based on gender, age, education level and length of service of respondents is as follows:

Table 1 Characteristics of respondents based on gender

Gender	Amount	Percentage
Male	33	60%
Female	22	40%
Total	55	100%

Based on the table above, it shows that there were 33 male respondents or 60% and 22 female respondents or 40% of the total number of respondents studied, namely 55 people, it can be concluded that the majority of respondents based on gender were male.

Table 2 Characteristics of respondents based on age

Respondent's age	Amount	Percentage
<25 years	5	9.09%
25-35 years	24	43.64%
36-45years	21	38.18%
>46 years	5	9.09%
Total	55	100%

Based on the table above, it shows that the number of workers in the age group <25 years is 5 people or 9.09%, while workers in the age group 25-35 years are 24 people or 43.64%, workers in the age group 36 -45 years as many as 21 people or 38.18%, and the age group >46 years as many as 5 people or 9.09% of the total number of respondents studied, namely 55 people, so it can be concluded that the majority of respondents based on age are 25 - 35 years.

Table 3 Characteristics of respondents based on education level

Education	Amount	Percentage
Bachelor	10	18.18%
Below high school	2	3.64%
High school seniors	43	78.18%
Total	55	100%

Based on the table above, it shows that 10 people had a Bachelor's degree, 18.18%, 2 people below high school or 3.64%, and 43 high school equivalents or 78.18% of the total number of respondents studied, namely 55 people. So it can be concluded that the majority of respondents based on education are high school or equivalent.

Table 4 Percentage of Respondents Based on Years of Work

Respondent's work period	Amount	Percentage
<1 year	1	1.82%
1 - 3 years	9	16.36%
>5 years	26	47.27%
<5years	19	34.55%
Total	55	100%

Based on the table above, it shows that respondents with a working period of >1 year were 1 person or 1.82%, while respondents with a working period of 1 - 3 years were 9 people or 16.36%, for >5 years there were 26 people or 47.27% and for There were 19 respondents working period <5 years or 34.55% of the total number of respondents studied, namely 55 people, so it can be concluded that the majority of respondents based on their working period were >5 years.

2. Validity Test

The validity test was carried out to determine and measure the level of validity of the instrument (questionnaire) under study. Valid means that the instrument can be used to measure what it should measure (Sugiyono, 2017:168).

- a. If $r_{count} > r_{table}$ then the statement is said to be valid.
- b. If $r_{count} < r_{table}$ then the statement is said to be invalid.

Table 5 Validity Test Results for Occupational Health and Safety Variable Instruments (X1)

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
KKK1	15.47	11,106	,689	,547	,845
KKK2	15.51	11,218	,738	,597	,839
KKK3	15.44	12,176	,455	,343	,882
KKK4	15.76	9,999	,792	,651	,825
KKK5	15.82	10,892	,665	,472	,849
KKK6	15.82	10,152	,706	,625	,842

From the output results above, it can be seen that in the Corrected Item- Total Correlation column, the validity test of the statement instrument for variable X1 is obtained, which is presented in the table below:

Table 6 Validity Test Results of the Occupational Health and Safety Variable Instrument (X1)

No. Statement	rvalue	r table	Information
1	,689	0.2241	Valid
2	,738	0.2241	Valid
3	,455	0.2241	Valid
4	,792	0.2241	Valid
5	,665	0.2241	Valid
6	,706	0.2241	Valid

Based on the table above, the calculated r value > r table means that for all statements the variable X1 is valid. So it can be concluded that all occupational health and safety variable instrument statements are valid or suitable for use in the data analysis process.

Table 7 Validity Test Results for Work Environment Variable Instruments (X2)

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
LP1	21.27	12,572	,754	,618	,889
LP2	21.13	12,595	,792	,695	,885
LP3	21.24	13,443	,679	,505	,898
LP4	21.27	12,795	,669	,584	,898
LP5	21.69	11,921	,724	,582	,893
LP6	21.67	12,224	,682	,589	,897
LP7	21.51	11,884	,778	,681	,886

From the output results above, it can be seen that in the Corrected Item-Total Correlation column, the validity test of the statement instrument for variable X2 is obtained, which is presented in the table below:

Table 8 Validity Results of the Work Environment Variable Instrument (X2)

No. Statement	rvalue	r table	Information
1	,754	0.2241	Valid
2	,792	0.2241	Valid
3	,679	0.2241	Valid
4	,669	0.2241	Valid
5	,724	0.2241	Valid
6	,682	0.2241	Valid
7	,778	0.2241	Valid

Based on the table above, it can be seen that the calculated r value > r table means that all statements for variable X2 are valid. So it can be concluded that all work environment variable instrument statements are valid or suitable for use in the data analysis process.

Table 9 Result of Validity Test of Employee Productivity Variable Instrument (Y)

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
PK1	20.07	15,106	,670	,506	,870
PK2	20.27	15,202	,656	,477	,872
PK3	19.85	15,830	,501	,406	,888
PK4	20.67	13,298	,712	,643	,865
PK5	20.73	12,424	,729	,699	,867

PK6	19.76	14,369	,772	,635	,858
PK7	20.02	14,277	,777	,635	,857

From the output above, it can be seen that in the Corrected Item - Total Correlation column, the validity test of the variable Y statement instrument is obtained, which is presented in the table below:

Table 10 Result of Validity Test of Employee Productivity Variable Instrument (Y)

No. Statement	rvalue	r table	Information
1	,670	0.2241	Valid
2	,656	0.2241	Valid
3	,501	0.2241	Valid
4	,712	0.2241	Valid
5	,729	0.2241	Valid
6	,772	0.2241	Valid
7	,777	0.2241	Valid

Based on the table above, it can be seen that the calculated r value > r table means that all statements for variable Y are valid. So it can be concluded that all statements of the worker productivity variable instrument are valid or suitable for use in the data analysis process.

3. Reliability Test

Reliability Test to determine whether there is constancy in measurement. Measurements that are consistent (steady) when used repeatedly and at different times have the same results. A reliable instrument is an instrument that is used several times to measure the same object, and will produce the same data Sugiyono (2017:268).

By criteria

- a. If Cronbach's $\alpha > 0.55$ then it is said to be reliable.
- b. If Cronbach's $\alpha < 0.55$ then it is said to be unreliable.

Table 11 Reliability Test Results for Occupational Health and Safety Variables (X1)

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,870	,871	6

From the results of the SPSS calculation above, it can be seen that variable X1 has a Cronbach's alpha value > 0.55 or $0.870 > 0.55$, which means that it is reliable.

Table 12 Reliability Test Results for Work Environment Variables (X2)

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,906	,909	7

From the results of the SPSS calculation above, it can be seen that variable X2 has a Cronbach's alpha value > 0.70 or $0.906 > 0.70$, which means that it is reliable.

Table 13 Reliability Test Results for Employee Productivity Variables (Y)

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,885	,891	7

From the results of the SPSS calculation above, it can be seen that variable Y has a Cronbach's alpha value > 0.55 or $0.885 > 0.55$, which means that the worker productivity variable is said to be reliable because it has a value > 0.55 so the performance variable is reliable.

4. Normality Test

This test aims to test whether in the regression model, the confounding or residual variables have a normal distribution Ghazali (2016: 154). The aim is to test whether in a regression model the dependent variable, independent variable or both have a normal distribution or not. A good regression model has normal or close to normal data distribution.

The next test is to use the Kolmogorov Smirnov test with an error level ($\alpha = 0.05$), if the Kolmogorov Smirnov value is above 0.05 then the data is normally distributed.

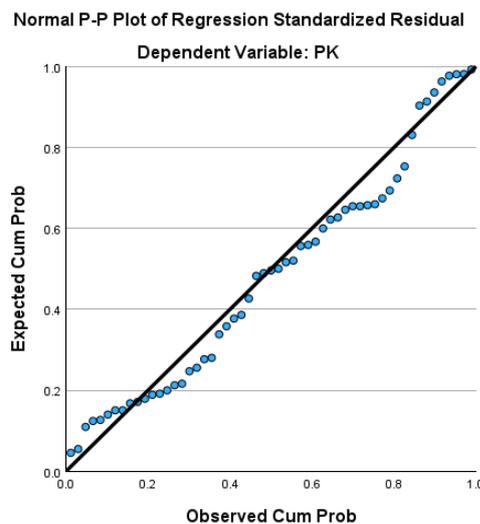


Figure 2 Results of PP Plot Analysis

Judging from the picture above, it can be seen that the data is spread around the diagonal line and follows the direction of the diagonal line, so the data is said to be normally distributed and the regression line model is appropriate to use for the regression model because it meets the normality assumption test.

Table 14 Kolmogorov Normality Test Results

One-Sample Kolmogorov-Smirnov Test			Unstandardized Residuals
N			55
Normal Parameters, b	Mean		.0000000
	Std. Deviation		2.14178662
Most Extreme Differences	Absolute		.105
	Positive		.105
	negative		-.069
Statistical Tests			.105
Asymp. Sig. (2-tailed) c			.200d
Monte Carlo Sig. (2-tailed) e	Sig.		.137
	99% Confidence Interval	Lower Bound	.128
		Upper Bound	,145

a. Test distribution is Normal.
 b. Calculated from data.
 c. Lilliefors Significance Correction.
 d. This is a lower bound of the true significance.
 e. Lilliefors' method based on 10000 Monte Carlo samples with starting seed 2000000.

Based on the table above, it can be seen from the normality test with the Kolmogorov-Smirnov test, namely Asymp. Sig (2-tailed) is 0.200 > 0.05, which means the data is normally distributed.

5. Multicollinearity Test

The multicollinearity test aims to test whether the regression model finds a correlation between independent variables (Ghozali, 2016: 103). A good model should have no correlation between independent dependent variables.

Table 15 Multicollinearity Test Results

Coefficients						
Model		Unstandardized B	Coefficients Std. Error	Standardized coefficient Beta	t	Sig.
1	(Constant)	1,156	1,839		,629	,663
	KKK	,382	.132	,342	2,901	<.001
	L.P	,610	.126	,570	4,837	

Based on the table above, it can be seen from the VIF value in the Collinearity Statistics column, which is 3.020, which means the VIF value is less than 10 and the Tolerance number is $0.331 > 0.10$. Thus, it can be stated that the model formed does not contain any symptoms of multicollinearity between the independent variables in the regression model.

6. Regression Analysis

Regression analysis is an analysis that aims to determine the effect of a variable on other variables. In regression analysis, the variable that influences is called the independent variable and the variable that influences is called the dependent variable.

Table 16 Results of Multiple Linear Regression Analysis

Coefficients										
Model		Unstandardized B	Coefficients Std. Error	Standardized coefficient Beta	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
							Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	1,156	1,839		,629	,532	-2,534	4,846		
	KKK	,382	.132	,342	2,901	.005	.118	,647	,331	3,020
	L.P	,610	.126	,570	4,837	<.001	,357	,863	,331	3,020

The test results above obtained a linear regression equation of $1.156 + 0.382X_1 + 0.610X_2$. In the linear regression model, the constant value of worker productivity is 1.156, this means that if the value of the independent variable is 0, then the value of the dependent variable is 1.156. The regression coefficient for the independent variable is positive, meaning that worker productivity at PT. Arteria Daya Mulia Cirebon can be influenced by occupational safety and health and the work environment.

7. Coefficient of Determination

The coefficient of determination (R²) essentially measures how far the model's ability to explain the dependent variables (Ghozali, 2016:95). In this multiple linear regression model, we will see the magnitude of the contribution of the independent variable to the dependent variable by looking at the total coefficient of determination (R²). If (R²) obtained is close to 1 (one), it can be said that the stronger the model explains the relationship between the independent variable and the dependent variable.

Table 17 Coefficient of Determination Test Results

Model Summary b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	,872 a	,761	,752	2,183	,761	82,690	2	52	,000

a. Predictors: (Constant), LP, KKK

b. Dependent Variable: PK

Based on the table above, it can be seen that the coefficient of determination R² (Adjust R Square) is 0.761, meaning that the contribution of occupational health and safety and the work environment together to worker productivity is 76.1% and the remaining 23.9% is influenced by other factors outside the research.

8. T Test (Partial)

The T test is carried out to test whether each independent variable has a significant influence on the dependent variable. The partial test can be determined by using a comparison of t count > t table then the research hypothesis is partially accepted (significant) and if t count < t table then the research hypothesis is partially rejected (not significant).

Table 18 First Hypothesis Test Results

Coefficients										
Model	Unstandardized B	Coefficients Std. Error	Standardized coefficient Beta	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics		
						Lower Bound	Upper Bound	Tolerance	VIF	
1	(Constant)	6,604	1,733		3,810	<.001	3,127	10,081		
	KKK	,904	,090	,808	9,991	<.001	,722	1,085	1,000	1,000

a. Dependent Variable: PK

Based on the table above, it can be concluded that variable X1 has an influence on variable X2. This is proven by the p-value (Sig) < 0.05, namely 0.000 < 0.05 and the calculated t value > t table, namely 9.991 > 1.674, so H_a is accepted and H₀ is rejected. So it can be concluded that occupational health and safety variables have a positive and significant effect on worker productivity.

Table 19 Second Hypothesis Test Results

Coefficients										
Model	Unstandardized B	Coefficients Std. Error	Standardized coefficient Beta	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics		
						Lower Bound	Upper Bound	Tolerance	VIF	
1	(Constant)	,859	1,960		,423	,663	-3,073	4,791		
	L.P	,910	,078	850	11,735	<.001	,754	1,065	1000	1000

Based on the results of the table above, it can be concluded that variable H_a is accepted and H₀ is rejected. So it can be concluded that work environment variables have a positive and significant effect on worker productivity.

9. F Test (Simultaneous)

The discussion in the research uses two independent variables, namely occupational health and safety and the work environment, using one dependent variable, namely worker productivity.

Table 20 Third Hypothesis Test Results

ANOVA					
Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	787,816	2	393,908	82,690	<.001b
Residual	247,711	52	4,764		
Total	1035.527	54			

a. Dependent Variable: PK
 b. Predictors: (Constant), LP, KKK

Based on the results of the table above, it can be seen that variable X1 and variable .17 means that Ha is accepted and Ho is rejected, which means that the variables of occupational health and safety and the work environment together have a positive and significant influence on worker productivity.

10. Description of Research Data

The description of research data is a description of the words that have been obtained during the research. After the data has been collected, the next step is to tabulate the data, this is done to determine the level of perception that the researchers have made, namely regarding occupational health and safety and the work environment on worker productivity. Where each statement item 1 to 5 with a total of 55 respondents, will be calculated using SPSS 23.0 for Windows. The highest average is 5 and the lowest average is 1. To find out the value is categorized as follows:

Table 21 Frequency Distribution of Occupational Health and Safety Variables (X1)

No	Answer												Average
	SS		S		CS		T.S		STS		Amount		
	5	4	3	2	1	F	X	F	X	F	X		
P1	2	10	21	84	23	69	9	18	0	0	55	181	3.29
P2	2	10	17	68	29	87	7	14	0	0	55	179	3.23
P3	3	15	20	80	24	72	8	16	0	0	55	183	3.33
P4	5	20	7	28	26	78	17	34	0	0	55	160	2.90
P5	1	5	12	48	28	84	11	22	3	3	55	162	2.94
P6	4	20	10	40	21	63	19	38	1	1	55	162	2.94
Total												18.63	
Average												3.10	

Information:

P: Statement

F: Total statement score

X: Total statement score x statement score

Based on the table above, it can be seen that variable X1 PT workers. Arteria Daya Mulia Cirebon has an average weighted score of around 3.13. With the lowest average value of 2.95 and the highest average value of 3.33. Thus, it can be concluded that the occupational health and safety variable is included in the quite good category because it is in the interval 2.60 - 3.39.

The statement with the lowest score in point 6 (P6) is that the company handles work accidents well. The highest statement in point 3 (P3) is that the Company establishes standard rules for disciplining workers.

Table 22 Frequency Distribution of Work Environment Variables (X2)

No	Answer												Average
	SS		S		CS		T.S		STS		Amount		
	5		4		3		2		1				
	F	X	F	X	F	X	F	X	F	X	F	X	
P1	4	20	33	132	15	45	3	6	0	0	55	203	3.69
P2	7	35	33	132	14	42	1	2	0	0	55	211	3.84
P3	4	20	32	128	19	57	0	0	0	0	55	205	3.73
P4	4	20	34	136	13	39	4	8	0	0	55	203	3.69
P5	2	10	22	88	20	60	11	22	0	0	55	180	3.27
P6	5	25	13	52	30	90	7	14	0	0	55	181	3.29
P7	5	25	20	80	25	75	5	10	0	0	55	190	3.45
Total												24.96	
Average												3.57	

Information:

P: Statement

F: Total statement score

X: Total statement score x statement score

Based on the table above, it can be seen that variable X2 PT. Arteria Daya Mulia Cirebon has an average weighted score of around 3.57. With the lowest average value of 3.27 and the highest average value of 3.84. Thus, it can be concluded that the occupational health and safety variable is included in the good category because it is in the interval 3.40 – 4.19.

The statement with the lowest value in (P5) is that every room in the company has adequate lighting. The highest statement in point 2 (P2) is that the engine sound is noisy and quite disturbing to the hearing.

Table 23 Frequency Distribution of Worker Productivity Variables (Y)

No	Answer												Average
	SS		S		CS		T. S		STS		Amount		
	5		4		3		2		1				
	F	X	F	X	F	X	F	X	F	X	F	X	
P1	2	10	27	108	22	66	4	8	0	0	55	192	3.49
P2	1	5	27	108	22	66	4	8	0	0	55	1811	3.29
P3	4	20	35	140	12	36	4	8	0	0	55	204	3.71

P4	4	20	30	120	11	33	24	48	3	3	55	156	0.93
P5	2	10	13	52	20	60	17	34	3	3	55	159	2.89
P6	8	40	30	120	15	45	2	4	0	0	55	209	3.80
P7	2	10	32	128	15	45	6	12	0	0	55	195	3.55
Total Amount												21.66	
Average												3.09	

Information:

P: Statement

F: Total statement score

X: Total statement score x statement score

Based on the table above, it can be seen that variable Y PT. Arteria Daya Mulia Cirebon has an average weighted score of around 3.09. With the lowest average value of 0.93 and the highest average value of 3.80. Thus, it can be concluded that the worker productivity variable is included in the quite good category because it is in the interval 2.60 – 3.39.

The statement with the lowest score in point 4 (P4) is carrying out all orders/instructions from superiors. The highest statement in point 5 (P5) is Having a high commitment to working for the Company. Efforts can be made to increase worker productivity by providing opportunities for workers, and giving appreciation to those who work optimally, so that they will always try to produce good performance for the company.

CONCLUSION

Based on the results of data analysis regarding the influence of Occupational Health and Safety (X1) and Work Environment (X2) on Worker Productivity (Y) at PT. Arteria Daya Mulia Cirebon by testing three studies, it can be concluded as follows:

1. The research results show that occupational health and safety have a significant effect of $0.000 < 0.05$ and the calculated t value $> t$ table ($9.991 > 1.674$), meaning that H_0 is rejected and H_a is accepted. Occupational Health and Safety has a positive and significant effect on PT worker productivity. Cirebon Noble Power Arteria. This means that providing more adequate occupational health and safety will increase worker productivity.
2. The work environment has a positive and significant effect on worker productivity with a significant value of $0.000 < 0.05$ and a calculated t value $> t$ table ($11.735 > 1.674$), meaning that H_0 is rejected and H_a is accepted. The work environment has a positive and significant effect on the productivity of PT workers. Cirebon Noble Power Arteria. This means that the better the work environment provided by the company, the more worker productivity will increase.
3. Occupational health and safety and the work environment together (simultaneously) have a significant positive effect on worker productivity as seen from the significance value of $0.000 < 0.05$ and the calculated F value $> F$ table ($82,690 > 3.17$), meaning that H_0 is rejected and H_a is accepted with an adjusted R square value of 76.1%. Occupational health and safety and the work environment together (simultaneously) have a positive and significant influence on the productivity of PT workers. Cirebon Noble Power Arteria. This means that the more adequate occupational health and safety provided by the company and the work environment is good and clear, the two variables will have an impact on increasing worker productivity.

REFERENCES

- Anggraeini, OS (2014). The Influence of Occupational Safety and Health (K3) and Work Discipline on Work Productivity. *Journal of Business Administration*.
- Busyairi, M., Tosungku, LOAS, & Oktaviani, A. (2014). Busyairi, M., Tosungku, LOAS, & Oktaviani, A. (2014). The Influence of Occupational Safety and Occupational Health on Employee Work Productivity. *Scientific Journal of Industrial Engineering*, 4(09), 112–124. The Influence of Occupational Safety and Occupational Health on Products. *Scientific Journal of Industrial Engineering*, 4(09), 112–124.
- Hidayatullah, A., & Tjahjawati, S. (2017). 938-Article Text-2543-1-10-20190305 (2). Department of Business Administration, Bandung State Polytechnic, Indonesia, 3(2), 104–111. <https://jurnal.polban.ac.id/ojs-3.1.2/an/article/view/938>
- Ihwanul Muthohirin. (2019). The Influence of Occupational Safety and Health on Employee Work Productivity. *Business Sketches*, 4(2), 85–96. <https://doi.org/10.35891/jsb.v4i2.1599>
- Ihwanul Muthohirin. (2021). The Influence of Occupational Safety and Health on Employee Work Productivity at PT Restu Prima Mandiri Bekasi. *Business Sketches*, 4(2), 85–96.
- Kartikasari, RD, & Swasto, B. (2019). The Influence of Employee Occupational Safety and Health on Employee Performance (Study of Production Department Employees of PT. Surya Abses Cement Group Malang). *Journal of Business Administration (JAB)*, 44(1), 89–95. [https://garuda.kemdikbud.go.id/article.php?article=636761&val=6468&title=The Influence of Employee Occupational Safety and Health on Employee Performance Study of Production Department Employees of Pt Surya Asbestos Cement Group Malang](https://garuda.kemdikbud.go.id/article.php?article=636761&val=6468&title=The%20Influence%20of%20Employee%20Occupational%20Safety%20and%20Health%20on%20Employee%20Performance%20Study%20of%20Production%20Department%20Employees%20of%20Pt%20Surya%20Asbestos%20Cement%20Group%20Malang)
- Parashakti, RD, & Putriawati. (2020). The Influence of Occupational Safety and Health (K3), Work Environment and Workload on Employee Performance. *Journal of Applied Management Science*, 1(3), 290–304. <https://doi.org/10.31933/jimt.v1i3.113>
- Wahyuni, N., Suyadi, B., & Hartanto, W. (2018). The Influence of Occupational Safety and Health (K3) on Employee Work Productivity at Pt. Kutai Timber Indonesia. *JOURNAL OF ECONOMIC EDUCATION: Scientific Journal of Education, Economics and Social Sciences*, 12(1), 99. <https://doi.org/10.19184/jpe.v12i1.7593>
- Aeni, HF, & Fermania, NR (2020). Factors Related to Occupational Safety and Health (K3) Behavior. *Journal of Medicine*, 6(2), 682–692. <https://doi.org/10.38165/jk.v6i2.148>
- Ihwanul Muthohirin. (2019). The Influence of Occupational Safety and Health on Employee Work Productivity. *Business Sketches*, 4(2), 85–96. <https://doi.org/10.35891/jsb.v4i2.1599>
- Ihwanul Muthohirin. (2021). The Influence of Occupational Safety and Health on Employee Work Productivity at PT Restu Prima Mandiri Bekasi. *Business Sketches*, 4(2), 85–96.
- Indocement, PT, Prakarsa, T., & Citereup, TBK (2023). The relationship between occupational safety and health (K3) programs and the performance of production employees at PT Indocement Tunggal Initiative, Tbk Citereup.
- Khalid, MY, Rashid, A. Al, Arif, ZU, Ahmed, W., & ... (2021). Natural fiber reinforced composites: Sustainable materials for emerging applications. In *Results in ... Elsevier*. <https://www.sciencedirect.com/science/article/pii/S2590123021000645>
- Sedarmayanti. (2011). *Work Procedures and Work Productivity*. CV. Mandar Forward.
- Utama, DM, & Widodo, DS (2021). An energy-efficient flow shop scheduling using hybrid harris hawks optimization. *Bulletin of Electrical Engineering and Informatics*, 10(3), 1154–1163. <https://doi.org/10.11591/eei.v10i3.2958>
- Gramedia.com <https://www.gramedia.com/literasi/pengertian-direktur/>
- Arida.co.id <https://arida.co.id/>



© 2024 by the authors. Submitted for possible open access publication under the terms and conditions of the Creative Commons Attribution (CC BY SA) license (<https://creativecommons.org/licenses/by-sa/4.0/>).