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The effect of stress and workload on employee performance in the division maintenance department PT Indominco Mandiri In Bontang

Tri Utari[1], Tuti Wediawati[2], and Fareis Althalets[3]

[123]Department of Administration Business, Faculty of Social and Political Sciences, Mulawarman University, Indonesia

triutaribontang@gmail.com[1], tutiwediawati@fisip.unmul.ac.id[2], fareisalthalets@fisip.unmul.ac.id[3]

Abstract. This experiment was conducted to test and analyze the effect of stress and workload partially and simultaneously on the performance of employees in the maintenance department at PT Indominco Mandiri, Bontang City. The sample used is 45 respondents who are employees of the maintenance department at PT Indominco Mandiri in Bontang. Data analysis used multiple linear regression equations and hypothesis proofing through t-test, F test and coefficient of determination (R^2) and dominant test. The results of the t-test of the work stress variable are the t-count value of 3.540 2.018 and a significance value of 0.001 0.05, which means that work stress has a significant effect on employee performance. The results of the t-test of the workload variable are the t-count value of 2.706 2.018 and a significance value of 0.010 0.05, meaning that the workload has a significant effect on employee performance. The statistical test results (F test) are 6.168 0.311 and a significance value of 0.004 0.05, meaning that simultaneously stress and workload have a significant effect on the performance of employees in the maintenance department at PT Indominco Mandiri in Bontang. The dominant test results show that the work stress variable has a dominant effect on employee performance. So, it can be concluded that the work stress variable has the most significant influence on the performance of employees in the maintenance department at PT Indominco Mandiri in Bontang. So, it can be suggested that the order flow should be by the structure not to confuse employees. Furthermore, the company should pay special attention to employees who feel they have conflicts that interfere with work; then, the company should change shifts or transfer employees to reduce the monotony experienced by employees, and this research still has shortcomings. Therefore, it is recommended for further researchers to improve by adding other variables that can improve employee performance.

Keywords. Work stress, workload, and employee performance

A. Introduction

Most companies nowadays are very concerned about the condition of their human resources. The company's development is determined not only by the assets owned or the sophistication of the technology used. However, it can also be seen from the quality of the company's human resources, such as expertise or competence. So that can contribute towards achieving company goals effectively and efficiently. Thus, human resource management is not just an administrative job but a strategic activity. This is due to future-oriented and is an

inseparable part of all company activities, which means that human resource management has a role in determining the company's future.

Performance is an ability that employees must carry out the tasks and responsibilities (Suwanto & Priansa, 2011). Performance is also the output produced by several functions and indicators of a job or profession (Wirawan, 2009). One of the factors that influence employee performance is workload. (Gibson, 2009) states that the workload is an obligation to do too many tasks or the time available is not enough to do the work. The excessive workload can cause employees to feel pressure, resulting in work stress; this is in line with expert opinion (Winarsunu, 2008). Employees who have a heavy workload are straightforward to feel mentally tired and stressed. According to Tarwaka (2011), the workload is a work situation with a description of the tasks completed within the specified time limit.

Stress can occur by discomfort in the existing situation; this discomfort can arise from within the individual or external environment. Excessive work stresses that employees' experience can make the company lose because the employee's performance decreases and can impact high absenteeism levels. According to Michael (Mulyadi, 2018), stress is an adaptive response moderated by individual differences, which are a consequence of each act, situation, event, and place's unique demands on a person.

According to the estimates, the International Labor Organization's cost of work stress reaches 200 billion dollars per year. These costs include salaries for daily illness, hospitalization and outpatient costs, and costs associated with decreased productivity. In the United States, the cost of stress is predicted to be 200 to 300 billion dollars per year. One of several studies in the United States revealed that 54% of work absenteeism was predicted to be related to stress. Another report is that 75% of 90% of doctor visits are due to complaints and various stress-related diseases (Ekawarna, 2018).

Suppose individuals who feel stressed doing work will hinder stability in doing work. Individuals who feel stressed in doing work will not be able to complete their duties correctly. According to Umam (2010), work stress is very detrimental to employees and companies. For employees, the consequences can be decreased work enthusiasm, high anxiety, frustration and others. If employees who are the most critical assets for a company cannot carry out their work properly due to stress, the employee's performance will decrease and harm the company. Therefore, a company needs to pay attention to this.

In Indonesia, there are several large companies engaged in various fields, one of which is mining. Coal mining is something that cannot be underestimated for today's energy availability. Coal is also classified as one of the mines that must be adequately mined. The constant demand from domestic to foreign proves that coal mining is one of several supporting mines; it takes the sound stages and processes in processing and mining the coal. As it is known that the mining and processing processes must be carried out effectively, efficiently and accurately, starting from the initial stage to the final stage.

One of several companies engaged in mining is PT Indominco Mandiri, located in Bontang, East Kalimantan. The mining process carried out at PT Indominco itself is influenced by the presence of several essential factors. For example, it is influenced by the machines used at all times while the department has the task of caring for and maintaining all types of machines and equipment throughout the production process, namely the maintenance department.

The Department maintenance has a critical task because it relates to all heavy equipment in the mine or all the tools used in the production process such as bulldozers, draglines and bucket wheel excavators. All these tools help support mining activities and become a form of corporate investment. The reason is that the value is very high. So, if properly maintained, heavy equipment will be able to operate efficiently and effectively. In addition, the safety of the tool

is guaranteed and lasts longer. That way, its utilization can generate more profits for the company.

Some of the tasks carried out by the department maintenance are carrying out periodic maintenance; in this case, the condition of heavy equipment is usually checked regularly after the equipment is working or used. This is useful to be safe and ready for use in the period next. Checks can be done every day or every week in the form of checking fuel adequacy, checking radiator water, checking oil before starting the engine, checking hydraulic functions, and checking batteries and cables. Furthermore, taking the oil regularly test the oil periodically to check the oil's condition. In addition, it also serves to check the condition of engine components. Furthermore, the department maintenance also has an overhaul schedule. This overhaul schedule is maintenance carried out to restore the overall engine situation to the initial state by standards factory within a predetermined period.

The department maintenance must carry out some examples of maintenance above not to hinder the mining business being carried out because heavy equipment is an investment. So, negligence in its maintenance can result in enormous losses for the company. Therefore, department maintenance has a vital role in the sustainability of the company. Therefore, it is essential to maintain employee performance so that it is always optimal. Below is the percentage of employee absenteeism for the last three months.
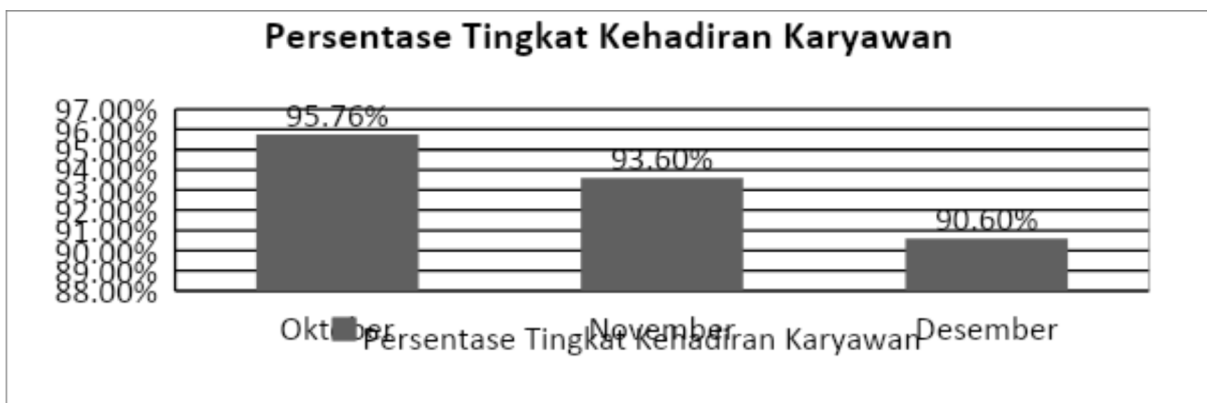

Figure Percentage of employee attendance
Source: PT Indominco, 2020

Based on this data, it can be seen that in the last three months the attendance rate of employee's department maintenance has decreased. Starting from October, the absentee rate was 95.76%; in November, it decreased to 93.60%, and in December, it continued to decline to 90.60%.

The workload that employees often experience in the department is maintenance, usually due to breakdowns. Breakdown maintenance is maintenance carried out when there has been damage to the machine or work equipment. The machine cannot operate normally, or its operation stops entirely in a sudden situation. So those employees are required to repair as quickly as possible even though they have to arrive overtime this usually makes employees experience stress. This can be seen from the attendance data above. Based on the graph above, it can be seen that the level of employee absenteeism continued to decline from October to December.

B.   Research Methods

The type of research uses a quantitative approach, which is expressed in numbers and aims to know causality between variables that describe a phenomenon. According to (Sugiyono 2018), the population is a generalization area composed of subjects/objects with specific qualities and characteristics that the researcher determines to study and then concludes. The population in this study are all employees who work in the department maintenance at PT Indominco, totalling 45 employees. The sample represents the population that the researcher has applied. Determining and selecting the sample is carried out through sampling saturation because all population members become the research sample. After all, the population is not significant (Sugiyono, 2018). The sample in this study amounted to 45 correspondents consisting of employee's department maintenance at PT Indominco Mandiri.

This study using a questionnaire or questionnaire. According to (Sugiyono, 2018) Questionnaires are questions or written statements to respondents to be answered. In this study, researchers used a Likert scale. According to (Sugiyono, 2018) the Likert scale is used to measure opinions, attitudes and views of individuals and groups of individuals regarding social phenomena. This study uses a scale of 1 to 4, namely point 1 for statements strongly disagree, point 2 for statements disagree, point 3 for statements agree and point 4 for enrichment strongly agree.

Use of the measurement scale with four choices to avoid respondents who choose moderate or neutral values. According to (Sukardi, 2009) from existing experience in Indonesian society, it was found that the tendency of the response would give the answer option in the middle or neutral category. This was due to humanitarian reasons; if all responses chose the middle category, the researcher would not get information or definite answers.

Test validity, Test Reliability, Normality Test, Multicollinearity Test, Heteroscedasticity Test, Multiple linear regression analysis, Correlation coefficient aims to measure the strength of the relationship between two dependent and independent variables. In addition to measuring the strength of the relationship between two or more variables, the correlation coefficient also shows the direction of the relationship between variables (Ghozali, 2013) test the coefficient of determination ($R^{2)}$. Hypothesis testing According to (Sanusi, 2017) hypothesis testing is an equation to test the significance of the partial and simultaneous multiple linear regression coefficients related to the research hypothesis statement, T-test (Partial), F-test (Significance simultaneously) and Test Dominant.

C.   Results
1.   Results Test Validity and Reliability
Table Test Result Validity

Variables Research	Code items Statement	Pearson Correlation	R table	Conclusion
Job stress (X1)	X1.1	0.586	0.294	Valid
	X1.2	0.586	0.294	Valid
	X1.3	0.604	0.294	Invalid
	X1.4	0.510	0.294	Invalid
	x1.5	0.423	0.294	Valid
	X1.6	0.374	0.294	Valid
	X1.7	0.296	0.294	Invalid
	X1.8	0.588	0.294	Valid
	X1.9	0.541	0.294	Valid

	X1.10	0.700	0.294	Valid
Workload (X2)	X2.1	0.549	0.294	Valid
	X2.2	0.537	0.294	Valid
	X2.3	0.587	0.294	Valid
	X2.4	0.796	0.294	Valid
	X2.5	0.860	0.294	Valid
	X2.6	0.476	0.294	Valid
	X2.7	0.483	0.294	Valid
Employee Performance (Y)	Y.1	0.532	0.294	Valid
	Y.2	0.532	0.294	Valid
	Y.3	0.328	0.294	Valid
	Y.4	0.367	0.294	Valid
	Y.5	0.500	0.294	Valid
	Y.6	0.500	0.294	Valid
	Y.7	0.436	0.294	Valid
	Y.8	0.640	0.294	Valid
	Y.9	0.456	0.294	Valid
	Y.10	0.447	0.294	Valid

Source: data processed 2021

2. Reliable Test

Table of Reliability Testing Results for

Statement Items	Cronbach Alpha	Conclusion
X.1	0.696	Reliable
X.2	0.744	Reliable
Y	0.611	Reliable

Source: Processed data, SPSS output v.23, 2021

3. Normality Test

Based on the test results, the Kolmogorov Smirnov statistical test value is 0.100 with a significance of 0.200 > 0.05. Conclusions can be drawn that the residual value is usually distributed or fulfils the normality of the residual according to the requirements of the classical assumption test. The results of the analysis can be continued to the regression analysis.

4. Multicollinearity Test

Based on the multicollinearity test results, the Tolerance value calculation results show no independent variable with a tolerance value of less than 0.10. This result indicates no correlation between the independent variable and the calculation results of the Variance Inflation Factor value (VIF). This shows that there is no single independent variable that has a value of more than 10. So, it can be concluded that there is no multicollinearity between the independent variables.

5.   Heteroscedasticity Test
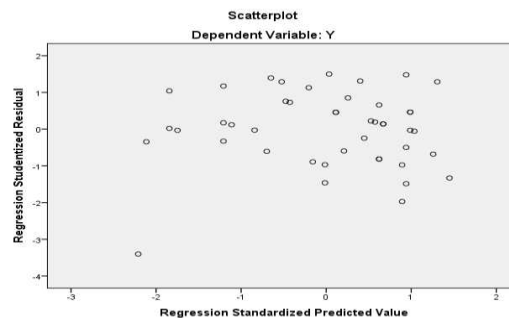
Source: data processed, output SPSS v23.2021
Picture of heteroscedasticity test

Based on the picture above, it can be seen that there is no clear pattern. Also, several points are scattered above and below the number 0 on the Y-axis. This picture indicates the occurrence of heteroscedasticity in the regression model, so the regression model. This is feasible to continue in the process of other statistical tests.

6.   **Results Of Multiple Linear Regression Equation**
   a.   The constant value of 21,844 shows a positive effect on the independent variables of work stress (X1) and workload (X2). If the independent variable increases or affects one unit, then the employee performance variable will increase or be fulfilled.
   b.   Affect regression coefficient value of 0.349 states that if the effect (Y1) increases by one unit, then employee performance (Y) will increase by 0.349, assuming other variables are held constant.
   c.   The workload regression coefficient of 0.052 states that if the workload (X2) increases by one unit, then the employee's performance (Y) will increase by 0.052, assuming the other variables are constant.

7.   Correlation Coefficient (R)

According to the results of data processing, the correlation coefficient value (R) is 0.476; it shows the level of relationship between the independent variables of work stress and workload on employee performance, including the medium category because it is in the coefficient interval range of 0.400 – 0.599 relationship level currently. So, it can be concluded that there is a moderate and positive relationship between the independent and dependent variables, which means that if the independent and dependent variables are increased, the productivity performance will increase.

8.   **The coefficient of determination (R2)**

Based on the test results, the coefficient of determination ($R^{2)}$ can be known as that obtained by the coefficient of determination R Square amount of 0.227. This shows that the dependent variable employee performance department maintenance on Indominco is independently influenced by independent variables of job stress and workload of several 22.7%. In comparison, the remaining 77.3% is influenced by other factors not discussed in this study.

9.   T-Test (Partial)

Based on testing the independent variable work stress (X1) on the dependent variable performance (Y). The t-count value of the work stress variable (X1) in the table is 3.540, and the significance value is 0.001 and then compared with the t-table value of 2.018 and the research significance value of 0.05, the t-count value is 3.540 2.018, and the significance value is 0.001 0.05. This means that H_0 is rejected and H_a accepted. Therefore, the work stress variable has a partial effect on employee performance at PT Indominco Mandiri.

It is based on testing the independent variable workload (X2) on the dependent variable performance (y). The t-count value of the workload variable (x2) in the table is 2.706. The significance value is 0.010, then compared with the t-table value of 2.018 and the research significance value of 0.05, the t-count value is 2.706 2.018, and the significance value is 0.010 0.05. This means that H_0 is rejected and H_a accepted. Therefore, the work stress variable has a partial effect on employee performance at PT Indominco Mandiri.

10.   F Test (Simultaneous)

Based on the results F-test, it was found that Fount of 6.168 and a significance value of 0.004, then compared with Ftable value of 0.311 and a significance value of 0.05, the obtained count of 6.168 0.311 and a significance value of 0.004 0, 05. This means that H0 is rejected and ha is accepted. Thus, it can be concluded that work stress and workload variables simultaneously significantly affect employee performance at PT Indominco Mandiri.

11.   Dominant Test

Based on the dominant test standardized coefficients beta results, the highest value is the work stress variable (X1) of 0.433. So, it can be concluded that the work stress variable has the dominant or most influential effect on employee performance at PT Indominco Mandiri.

D.   Discussion
1.   The Influence of Work Stress and Workload on Employee Performance

The research results were obtained about work stress and workload on employee performance in the maintenance department at PT Indominco Mandiri. The ANOVA (Analysis of Variance) test in the table shows that the calculated F is 6.168 0.311, and the significance value is 0.004 0.05. This means that H_0 is rejected and H_a accepted. So it can be concluded that work stress and workload variables significantly influence employee performance in the maintenance department at PT Indominco Mandiri.

The results of this study are in line with research conducted by (Chandra, Riny & Adriansyah, 2017), (Wahdaniah & Gunardi, 2018) and (Nazila & Yuliana, 2019), concluding that "work stress and workload have a significant influence on employee performance". Therefore, work stress and employee workloads are essential things that the company must give attention to to achieving good performance and work performance from employees in achieving company goals. Due to quality resources and quality resources need the human resources desired by an organization. have the spirit and passion for working to achieve optimal work performance.

Work stress experienced by employee's department maintenance is derived from the organizational structure, where some employees still feel the line of command is not clear. Some employees said that they still received orders from other superiors, thus making employees confused about the clarity of the organizational structure in the company. Furthermore, regarding the appearance of workers' homes with conflict sub-indicators, some employees feel that the family or personal conflicts they feel can interfere with concentration and focus.

Workload experienced by employee's department maintenance is derived from the work condition, where most employees feel monotonous work every day than employees often work outside working hours that have been defined. It happens because the company suffered a breakdown, or there is damage to the machine suddenly, so that employees are required to promptly correct these so that there will be no delays or long-stalled products.

2. Work And Partially on Employee Performance Workload

The workload is an obligation to perform too many tasks or the availability of insufficient time to do their work. The excessive workload can cause employees to feel pressure which results in experiencing work stress; this is in line with expert opinion, namely, according to (Winarsunu, 2008) employees who have a heavy workload are very susceptible to mental fatigue and stress. Based on the results of hypothesis testing through a comparison between t arithmetic and t table, it is obtained as follows:

a. Effect Of Work Stress on Employee Performance

According to Rivai and Sagala (Umam 2010), work stress is a tense situation that causes physical and psychological imbalances that affect emotions, thought processes, and employee situations.

Based on the research results above, there is a relationship between work stress and employee performance in the department maintenance at PT Indominco Mandiri. Obtained t arithmetic 3.540 t table 2.018 and has a significant number of 0.001 0.05. This means that H_0 is rejected and H_a received, which shows a positive and significant correlation between job stress on employee performance in the department maintenance at Indominco independently. The value of the regression coefficient, which is 3.718 work stress variable, can then be assumed with the statement that if there is an increase of 1 from the work stress variable, there is a decrease of 3.719 from the value of the work variable.

The results of this study are in line with the results of research conducted by (Chandra, Riny & Adriansyah, 2017), (Wahdaniah & Gunardi, 2018) and (Nazila & Yuliana, 2019), which concluded that "work stress has a significant effect on employee performance".

Work stress experienced by employee's department maintenance is derived from the organizational structure, where some employees still feel the line of command is not clear. Some employees said that they still received orders from other superiors, thus making employees confused about the clarity of the organizational structure in the company. Furthermore, regarding the appearance of workers' homes with conflict sub-indicators, some employees feel that the family or personal conflicts they feel can interfere with concentration and focus.

b. Effect Of Workload on Employee Performance

According to Sunarso (2010), the workload is a series of several activities that must be completed by an organizational unit or position holder within a period.

Based on the research results above, the workload on the performance of employees and the department maintenance at PT Indominco Mandiri. Obtained t arithmetic 2.706 2.018 and a significance value of 0.010 0.05. H_0 is rejected, and H_a received, which showed that part there is positive and significant workload between the performance of employee's department maintenance in the Indominco independently.

The results of this study are in line with research conducted by (Wahdaniah & Gunardi, 2018) and (Nazila & Yuliana, 2019), which concluded that workload has a significant effect on employee performance. Nevertheless, this research is not aligned with (Chandra, Riny & Adriansyah, 2017), which stated that the workload has no significant effect on employee performance. This is because the research object (Chandra, Riny & Adriansyah, 2017) is engaged in the service sector, namely, PT Mega auto central finance, Langsa branch. The object

is the total currently available employees. It is sufficient to handle the current work, the targets that must be achieved in work are clear, and the time to do the work is clear enough.

Workload experienced by employee's department maintenance is derived from working conditions. Some employees feel a monotonous work every day than employees sometimes work outside the working hours that have been set. This is happening because the company has a breakdown or a sudden machine Employees must repair the damage quickly so that there are no delays or production stops for a long time.

2. Variables With Dominant Influence

Based on the study results, it is known that the work stress variable has the most significant influence on the performance of employees in the maintenance department. Work stress experienced by employee's department maintenance is derived from the organizational structure, where some employees still feel the line of command is not clear. Some employees said that they still received orders from other superiors, thus making employees confused about the clarity of the organizational structure in the company. Furthermore, regarding the appearance of workers' homes with conflict sub-indicators, some employees feel that the family or personal conflicts they feel can interfere with concentration and focus.

E. Conclusion

The researchers conclude that based on the results, simultaneously stress and the stress of work and the workload is the performance of employees in the department of maintenance in Indominco independently. Workload has a positive and significant impact on the performance of employees in the department of maintenance at PT Indominco Mandiri; then, based on the results of the study, partially work stress has a positive and significant effect on employee performance in the maintenance department at PT Indominco Mandiri. According to the study results, the dominant work stress variable has the largest (dominant) effect on employee performance in the maintenance department at PT. Indominco is independent because the stress level of employees is higher than the employee's workload at the company. This is because some employees still receive orders from superiors from other departments to create ambiguity in the organizational structure and family or personal conflicts of employees that sometimes make the concentration and focus of employees decrease.

It is better if the order flow is by the structure so as not to confuse employees. Furthermore, the company should pay special attention to employees who feel they have conflicts that interfere with work; then, the company should change shifts or transfer employees to reduce the monotony experienced by employees, and this research still has shortcomings. Therefore, it is recommended for further researchers to improve by adding another variable that can improve employee performance.

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