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Analysis of the effect of job stress and work conflict on employees spirit in palm oil mills

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Abstract
Palm oil mill is a processing unit to produce palm oil. The operation of this processing unit requires a large number of employees. At a processing capacity of 30 tons of FFB per hour requires at least 110 employees.
Objective: Environmental interactions between tools and machines as well as fellow employees and leaders often result in conflicts that tend to trigger stress on employees. In such conditions, stress and conflict will affect employee Spirit.
Methods: The purpose of this study was to determine the effect of job stress, work conflict on employee Spirit in palm oil mills. Data collection using a questionnaire distributed to all employees of the palm oil mill.
Results: The results show that the job stress variable (X_1) had a negative and significant effect on employee Spirit at the Palm Oil Mill. The work conflict variable (X_2) has a positive and significant effect on employee Spirit at the Palm Oil Mill. While the job stress variable (X_1) and work conflict (X_2) simultaneously have a significant effect on employee Spirit at the Palm Oil Mill.

Keywords: job stress, work conflict, spirit, palm oil mill

Introduction

Indonesia is one of the largest palm oil producers in the world. Statistical data from the Directorate General of Plantations [9], stated that the provisional area of Indonesian oil palm plantations in 2020 was 14,858,300 hectares, while the number of workers involved in managing oil palm plantations amounted to 4,427,273 people. The yield of oil palm plants is in the form of fresh fruit bunches (FFB) which are then processed in a processing unit called the Palm Oil Mill [1].

The FFB processing at the Palm Oil Mill involves a number of employees, both those who work directly in the process section and those who work indirectly in the administration section. Working conditions at MCC are stressful. The pressure comes from the work environment where employees/operators will be directly exposed to noise-generating equipment and machine activities. Naeini R.L. and S. B. Tamrin [2], stated that there are at least 7 (seven) stations in the Palm Oil Mill which are sources of noise that can cause stress to workers. Job stress is an adaptive response, limited by individual differences and psychological processes, namely the consequences of each activity (environment), external situation or event that imposes excessive psychological or physical demands on someone where the individual is located. Positive stress is called eustress, while excessive and harmful stress is called distress.

The source of stress, also called a stressor, is a stimulus that is perceived as a threat and causes negative feelings. Almost any job condition can cause stress, depending on how the employee reacts to it. For example, an employee will be able to easily accept and learn new work procedures, while other employees do not know or will even reject it. How people react to stress determines the level of stress experienced [4].

A. Prabu Mangkunegara stated that: "A feeling of pressure experienced by employees in dealing with work. Based on the definition of experts, it can be concluded that job stress is a condition that reflects a feeling of pressure, tension, which affects the emotions and thought processes of an employee to do his work so that it hinders organizational goals [5].

On the other hand, the relationship between fellow employees and employees with the leadership often causes conflicts so that it will affect the work spirit of employees. According to A.A. Prabu Mangkunegara stated that conflict is a conflict that occurs between what a person expects of himself, other people and the organization with the reality of what he expects [4].

In Palm Oil Mill A, the dominant problems that can affect employee Spirit can be seen from the late arrival of work, leave, and high absenteeism due to a tedious workload. Employees tend to be more sensitive, easily angry with their surroundings if the leadership gives excessive work demands by giving limited time. Besides, employees seem to tend to delay or avoid work because they experience fatigue due to stress due to the large workload. Good health and comfort at work can reduce employee stress [6].

The decline in work Spirit includes a decrease in attendance and the number of employees who tend to come to work not on time. According to Tohardi, there are several factors that affect work Spirit, namely: 1) The pride of the worker or job and satisfaction in doing a good job, 2) Attitude towards the leader, 3) Desire to move forward, 4) Feelings have been treated well, 5) Ability to work well. Coworkers, 5) Awareness of responsibility for his work [4].

The purpose of this study is to determine the effect of stress and work conflict on employee Spirit at palm oil mill A by

determining the following hypothesis;
H_1: it is suspected that job stress has a significant positive effect on Employees spirit.

H_2: it is suspected that work conflict has a significant positive effect on Employees spirit.

H_3: it is suspected that job stress and work conflict together have a positive effect on employee Spirit.

Material and Method

Location and time of research

The study was conducted at Palm Oil Mill A with a capacity of 30 tons of FFB per hour in Kandis District, Siak Regency, Riau Province, Indonesia. During February – March 2021.

Data Collection

The data needed to solve the problem in this study was obtained by recording the results of the company (secondary data), observations, interviews with the company related to the problems faced and employees. Palm Oil Mill A employs as many as 115 people who are respondents in this study.

Data collection tools

The questionnaire is a primary data collection tool with a survey method to obtain respondents' opinions in the form of personal information such as attitudes, opinions, hopes and desires of respondents. All workers (respondents) answered the questions or statements in the research questionnaire.

Questionnaires were distributed to respondents in the following ways: directly by the researcher (independent), sent by post (mail question air), sent via computer such as electronic mail (e-mail).

Data Processing

The data needed in this research comes from two main sources, namely 1) primary data and 2) secondary data. Primary data comes from a list of questions (Questioners) directed to all employees who work in Palm Oil Mill A. Secondary data is research data which includes reference evidence such as documents related to this research. This data processing uses a likret scale and for processing it uses SPSS Software version 17.0.

Data Analysis

Validity and Reliability Test

The validity test is used to measure the extent to which the accuracy and precision of the measuring instrument in the form of a question instrument performs its measuring function. This validity test uses product moment correlation. An indicator of a question is said to be valid if the indicator is able to achieve the measurement objectives of the appropriate construct of observation, that is, if the correlation coefficient is greater than the critical value of the specified table.

Reliability test is used to measure the extent to which indicators incorporated in a question dimension can be relied upon for a larger sample size. Reliability testing using Cronbach alpha. A question dimension is said to be reliable if it has a high level of reliability. The accuracy of the measuring instrument in the form of a question instrument in carrying out its measuring function.

T Test

T test is used to partially test each variable. The results of the t test can be seen in the coefficients table in the sig (significance) column. If the probability of t value or significance < 0.05, it can be said that there is an influence between the independent variables on the dependent variable partially. However, if the probability of t value or significance > 0.05, it can be said that there is no significant effect between each independent variable on the dependent variable.

F Test

The F test is used to determine the effect of the independent variables simultaneously (simultaneously) on the dependent variable. Significant means that the relationship that occurs can apply to the population. The use of the significance level varies, depending on the wishes of the researcher, namely 0.01 (1%); 0.05 (5%) and 0.10 (10%). The results of the F test are seen in the ANOVA table in the sig column. For example, we use a significance level of 5% (0.05), if the probability value is <0.05, it can be said that there is a jointly significant effect between the independent variables on the dependent variable. However, if the significance value is > 0.05 then there is no significant effect jointly between the independent variables on the dependent variable.

Result and Discussion

Validity and Reliability Test

The results of testing the validity and reliability are presented in the following table:

Table 1: Validity and Reliability Test Results Job stress (X_1)

Item Question	r count	r table	Description	Cronbach's Alpha	Description
X1.1	0.581	0,432	Valid	,877	
X1.2	0.840	0,432	Valid	,877	
X1.3	0.845	0,432	Valid	,877	
X1.4	0.593	0,432	Valid	,877	
X1.5	0.575	0,432	Valid	,877	Reliable
X1.6	0.720	0,432	Valid	,877	
X1.7	0.611	0,432	Valid	,877	
X1.8	0.845	0,432	Valid	,877	
X1.9	0.845	0,432	Valid	,877	
X1.10	0.593	0,432	Valid	,877	

The table shows the calculated r value and Cronbach's Alpha for each question, namely for questions 1 to 10 for the job stress variable (X_1). Concluded that each question is valid because the calculated r value for each question item is greater than the r table value (0.432) and the data is reliable because Cronbach's Alpha > 0.6.

Table 2: Work Conflict Validity and Reliability Test Results (X_2)

Item Question	r count	r table	Description	Cronbach's Alpha	Description
X2.1	0.889	0,432	Valid	,898	
X2.2	0.753	0,432	Valid	,898	
X2.3	0.934	0,432	Valid	,898	
X2.4	0.594	0,432	Valid	,898	
X2.5	0.656	0,432	Valid	,898	Reliable
X2.6	0.481	0,432	Valid	,898	
X2.7	0.656	0,432	Valid	,898	
X2.8	0.745	0,432	Valid	,898	
X2.9	0.650	0,432	Valid	,898	
X2.10	0.889	0,432	Valid	,898	

Table 3: Validity and Reliability Test Results Work Spirit (Y)

Item Question	r count	r table	Description	Cronbach's Alpha	Description
Y.1	0.924	0,432	Valid	,878	
Y.2	0.506	0,432	Valid	,878	
Y.3	0.450	0,432	Valid	,878	
Y.4	0.488	0,432	Valid	,878	Reliable
Y.5	0.720	0,432	Valid	,878	
Y.6	0.892	0,432	Valid	,878	
Y.7	0.924	0,432	Valid	,878	
Y.8	0.826	0,432	Valid	,878	

Table 3 is a test of the validity and reliability of the instrument on the questions used. In the table, the calculated r value and Cronbach's Alpha for each question are obtained, namely for questions 1 to 10 for the variable Spirit (Y). Concluded that each question is valid because the calculated r value for each question item is greater than the r table value (0.432) and the data is reliable because Cronbach's Alpha > 0.6.

Multiple Linear Regression Analysis

Multiple linear regression analysis is a linear relationship between two or more independent variables (X_1, X_2,….Xn) with the dependent variable (Y). This analysis is to determine the direction of the relationship between the independent variable and the dependent variable whether each independent variable is positively or negatively related and to predict the value of the dependent variable if the value of the independent variable increases or decreases. The data used are usually interval or ratio scale.

Multiple linear regression equation as follows:

$$Y' = a + b1X1 + b2X2 + \ldots.. + bnXn$$

Where:

Y' = Dependent variable (predicted value)

X1 and X2 = Independent variables

A = Constant (value Y' if X1, X2…..Xn = 0)

B = Regression coefficient (increase or decrease value)

Table 4: Multiple Linear Regression Analysis Results

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3,423	4,223		,811	,428
	Job stress	-,320	,401	-,328	-,799	,434
	Work conlict	1,044	,351	1,219	2,971	,008

The constant value is 3,423 units, meaning that if there is a change in the job stress and work conflict variables (the X_1 and X_2 values are 0) then the employee Spirit of Palm Oil Mill A is 3,423 units. The coefficient of job stress is -0.320, meaning that if the job stress variable (X_1) increases by 1% assuming the work conflict variable (X_2) and the constant is 0 (zero). Then the Spirit of employees at Palm Oil Mill A will decrease by -0.320. This shows that the provided job stress variable contributes negatively to employee Spirit, so the higher the job stress that occurs at Palm Oil Mill A, the lower the employee Spirit. The value of the work conflict regression coefficient is 1.044, meaning that if the work conflict variable (X_2) increases by 1% assuming the job stress variable (X_1) and the constant is 0 (zero). Then the Spirit of employees at Palm Oil Mill A increased by 1,044. This shows that work conflict contributes positively to employee Spirit, so the higher the work conflict, the higher the employee Spirit.

T-Test Results (Partial)

Table 5: T-Test Results (Partial)

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	3,423	4,223		,811	,428
	Job stress	-,320	,401	-,328	-,799	,434
	Work conlict	1,044	,351	1,219	2,971	,008

Based on Table 5 by observing the row, column t and sig. can be explained as follows:
The job stress variable (X_1) has a negative and significant effect on employee Spirit in the factory. Based on data analysis using SPSS 17.0, the results of the regression equation are as follows:

$$Y' = 3.423-0.320X1+1.044X2+e$$

The regression equation above shows the relationship between the independent variable and the dependent variable partially, from the equation it can be concluded that, the constant value is 3,423, meaning that if there is a change in the job stress and work conflict variables (X_1 and X_2 values are 0) then the employee Spirit at Palm Oil Mill A increases. This can be seen from the significant job stress (X_1) 0.434 <0.05.
And t table = t (α/2: nk-1 = t (0.05/2:22-2-1) = (0.025:19) = 2.09302. It means that the value of t count is smaller than t table (-0.799< 2.09302. So Ho is accepted and H1 is rejected, so the hypothesis which reads that there is an effect of job stress on employee Spirit is partially rejected. The same results were obtained by Manihuruk and Tirtayasa [8] who found that job stress partially had a significant effect on spirit. Work.
Work conflict variable (X_1) has a positive and significant effect on employee Spirit at Palm Oil Mill A. This can be seen from the significant job stress (X1) 0.008 <0.05 and t table = t (α/2: nk-1 = t (0.05/2:22-2-1) = (0.025:19) = 2.09302. It means that the value of t count is smaller than t table (2.971> 2.09302). So Ho is rejected and H2 is accepted. The effect of work conflict on employee Spirit is partially accepted.

F Test Results (Simultaneous)
This test is carried out by comparing the significance of the calculated F value > F table, then the model formulated is correct. If the calculated F value > F table, it can be interpreted that the regression method is correct, meaning that it affects together, by looking at the value of F table = f (k; nk), F = (2; 22-2), F table = (2; 20) = 3.49 with an error rate of 5% The F test performed can be seen in the following table:

Table 6: F Test Results (Simultaneous)

ANOVA[b]						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	267,088	2	133,544	42,642	.000[a]
	Residual	59,503	19	3,132		
	Total	326,591	21			

Based on the test results in the table above, the calculated F value is: 42.642 with the F table value is 3.49 so that the calculated F value > F table or 42.642> 3.49, and the significant level is 0.000 <0.05. Then H0 is rejected and H3 is accepted. It was concluded that the variable job stress (X_1) and Work Conflict (X_2) simultaneously had a significant effect on employee Spirit at the Palm Oil Mill. A. Hendri [7] stated that good organization and mediation were needed to improve employee performance.

Determination Coefficient Test Results

Table 7: Coefficient of Determination Test Results

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.904[a]	,818	,799	1,770

Based on Table 7, it can be seen that the value of the coefficient of determination is found in the Adjusted R Square value of 0.799. This means that the ability of the independent variable in explaining the dependent variable is 79.9%, the remaining 20.1% is explained by other variables that are not discussed in this study such as location distance, weather, and geographical conditions and others. In addition to these factors psychologically stress and conflict affect employee performance in palm oil mills [3].

Conclusion
From the discussion carried out, it can be concluded as follows: Job stress variable (X_1) has a negative and significant effect on employee Spirit at Palm Oil Mill A. This can be seen from the t-count value which is smaller than t-table (0.799<2.09302).So Ho is accepted and H_1 is rejected, so the hypothesis which states that there is an effect of job stress on employee Spirit is partially rejected.
The work conflict variable (X_2) has a positive and significant effect on employee Spirit at Palm Oil Mill A. This can be seen from the t-count value which is smaller than the t-table (2.971>2.09302). Then Ho is rejected and H_2 is accepted. So the hypothesis which states that there is an effect of work conflict on employee Spirit is partially accepted.
Based on the test results in the table above, the calculated F value is: 42.642 with the F table value is 3.49 so that the calculated F value is > F table or 42.642> 3.49, and the

significant level is 0.000 <0.05. So Ho is rejected and H3 is accepted, where the variables of job stress (X_1) and Work Conflict (X_2) simultaneously have a significant effect on employee Spirit at Palm Oil Mill A.

Conflict of interest

The authors do not declare any conflict of interest

Contributions by authors

Mr. Rafael Remit Winardi have had full access to all data from the study and they take responsibility for the integrity of the data and the accuracy of the analysis of the data.

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