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The impact of work environment and work stress on employee performance in navigation district type a class ii Tanjung Emas port Semarang

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Abstract

The development of the business sector goes hand in hand with the increase in business competition, so companies must increase their competitiveness through increasing employee performance to maximize company performance. Employee performance can be affected by the environment and work stress. Navigation District Type A Class II Tanjung Emas Port Semarang has a fairly high demand for navigation services so that employees are required to work optimally, impactively and efficiently in order to meet all demands. The purpose of this research is to determine the impacts of work environment and work stress partially or simultaneously on employee performance of Navigation District Type A Class II Tanjung Emas Port Semarang. The study was conducted using a quantitative method on the population of all employees of Navigation District Type A Class II Tanjung Emas Port Semarang with a selected sample of 100 people. The instrument used was a questionnaire for IBM SPSS 25 data collection to analyze the data. The results showed that work environment and work stress each had a positive and partially significant impact on employee performance ($\beta_1 = 0.340$; sig. = 0.003 and $\beta_2 = 0.245$; sig. = 0.033). Work environment and work stress also had a significant simultaneous impact on employee performance (sig. = 0.001) with a large contribution of 12.7% ($R^2 = 0.127$).

Keywords: work environment, work stress, employee performance

1. Introduction

The development of the business sector goes hand in hand with the increase in business competition between companies to provide excellent service or superior products. Companies must improve their competitiveness to maintain their existence through improving company performance. Human resources as the driver and implementer of a system are very vital assets and will determine the outputs produced by the company. Therefore, employee performance will determine the company's success in achieving its goals. If the level of employee performance is optimal, the quality of the output will be maximized (Darmaputra, 2016) ^[2].

Employee performance is the result of quality and quantity of work achieved by an employee in carrying out his duties in accordance with the responsibilities given to him (Mangkunegara, 2011) ^[7]. Every performance achieved by employees is very important in the continuity of the organization in the company (Yulianti and Liana, 2022) ^[14]. Every company expects employees to have achievements in order to make optimal contributions to the company (Yulianti and Liana, 2022) ^[14]. Employee performance can be assessed from the aspects of work quality, quantity, as an individual, punctuality, impactiveness and independence (Robbins, 2016) ^[9]. Employee performance can be affected by the work environment and work stress. A conducive work environment can increase employee focus at work, while work stress can affect a person in functioning. Research by Heruwanto, *et al.* (2020) ^[4] shows that work environment and work stress have a positive and significant impact partially or simultaneously on employee performance.

Work environment is all circumstances that occur related to work relationships, both relationships with superiors and relationships with fellow colleagues, or relationships with subordinates (Sedarmayanti, 2001) ^[10]. A condition can be said to be ideal when it meets the aspects of health, safety, and comfort (Sofyan, 2020) ^[13]. The work environment needs to be considered so that employees are enthusiastic about working so that they can produce good outcomes for the company (Yulianti and Liana, 2022) ^[14]. The work environment has indicators, including: lighting, environmental temperature, noise interference, color usage, room demand, work skills, and interpersonal dynamics between employees (Siagian, 2014) ^[11]. The work environment has a positive and significant impacts on employee performance at PT. Intimas Lestari Nusantara (Prahawan and Simbolon, 2014) ^[8].

A conducive work environment is an environment that avoids work stress. Work stress can have a negative impact on a person's psychology and biology (Heruwanto *et al.*, 2020) ^[4]. Stress is something that needs to be avoided by employees because it can result in a decrease in performance that has an impact on the impactiveness of the company's production (Yulianti and Liana, 2022) ^[14]. Work stress is a tense condition that affects an individual's emotions, way of thinking and physical condition (Siagian, 2016) ^[12]. Job demands are one of the causes of stress and will affect work if it is not in accordance with the benefits received from the company (Djalupi, Makkasau and Bachri, 2023) ^[3]. Work-related stress can lead to dissatisfaction at work (Heruwanto *et al.*, 2020) ^[4]. Employees who have a burden of problems and interfere with the company's performance, the boss can take action so as not to affect the company's goals (Aturrizki, Martini and Puspitadewi, 2022) ^[1]. Work stress consists of pressure and impacts from colleagues, superiors and customers; mismatch between the needs and resources available in the job; synchronized in work; work that involves risk, boredom, boredom or routine; the load level exceeds normal; and internal factors (Igor, 2016) ^[5].

The Navigation Department is a Government Institution under the auspices of the Ministry of Transportation of the Republic of Indonesia which is engaged in shipping navigation. It has the task of carrying out management functions for shipping navigation aids, shipping telecommunications, as well as marine observation activities, hydrographic surveys, channel and crossing monitoring using installation facilities for the sake of shipping safety. Navigation District Type A Class II Tanjung Emas Port Semarang has a working area of Central Java Province with a coastline length of 971 km, while the water working area consists of 645 km from the North coastline and 326 km from the South coastline. By overseeing the main port in Central Java, employees of this Navigation District are required to carry out navigation services with an average of up to 25 ship visits per day. One of the navigation services is a guide service with a service time of approximately 90 minutes. The high number of ship visits will increase the demand for navigation services, as well as the number of jobs that risk creating job stress, especially if the work environment is not supportive. Therefore, a study was conducted to examine the impacts of the environment and work stress on employee performance.

Methods

The research was conducted in the Type A Class II

Navigation District of Tanjung Mas Port Semarang, Central Java, Indonesia in February – May 2024. This research is a causal associative research with a quantitative approach. The population of this study is all employees of Navigation District Type A Class II Tanjung Emas Port Semarang as many as 132 people and a sample of 100 people was taken using a simple random sampling technique. The instruments used were questionnaires and IBM SPSS applications. The independent variables of this study are work environment and work stress while the dependent variable is employee performance. The data analysis techniques used are descriptive analysis and multiple linear regression analysis.

Results

Respondent Characteristics

This analysis was carried out on 100 employees of Navigation District Type A Class II Tanjung Emas Port Semarang to find out the characteristics of the research respondents including: gender, age, last education, and length of work. The results of the analysis (table 1) showed the dominant characteristics of the research respondents according to their respective categories, including: male gender (74%), age group 26-30 years (40%), last education Diploma (47%), and length of work 1-2 years (47%).

Table 1: Descriptive Analysis Result of Respondent Characteristics

Characteristics	Frequency	Percentage
Gender		
Male	74	74
Female	26	26
Total	100	100%
Age		
26-30 years old	40	40
31-35 years old	25	25
35-40 years old	23	23
>40 years old	12	12
Total	100	100%
Last Education		
SMA	35	35
Diploma	47	47
S1	18	18
Total	100	100%
Length of Work		
< 1 years	8	8
1-2 years	47	47
> 2 years	45	45
Total	100	100%

Variable Category Description

The variable category describes the respondents' responses to the research variables which are categorized into high, medium, and low. The results of the categorization (table 4) show that mostly: the workload of the respondents is moderate (84%); the work environment of respondents is moderate (68%); and employee performance is moderate (80%).

Table 2: Descriptive Analysis Results of Variable Data Distribution

Variable	Min	Max	Mean	SD
Work Environment	3,14	4,29	3,8000	0,26630
Work Stress	3,17	4,33	3,7833	0,26004
Employee Performance	3,20	4,40	3,7680	0,31104

Table 3: Variable Categorization

Category	Interval Score	Frequent	Percentage
Work Environment			
High	$X > 4,0663$	18	18%
Medium	$4,0663 > X > 3,5337$	72	72%
Low	$X < 3,5337$	10	10%
Total		100	100%
Work Stress			
High	$X > 4,04334$	15	15%
Medium	$4,04334 > X > 3,52326$	64	64%
Low	$X < 3,52326$	21	21%
Total		100	100%
Employee Performance			
High	$X > 4,07904$	14	14%
Medium	$4,07904 > X > 3,45696$	66	66%
Low	$X < 3,45696$	20	20%
Total		100	100%

Analysis Prerequisite Test

1. Normality Test

Normality test using the Kolmogorov-Smirnov test. The results of the data normality test (table 5) show that the significance value is 0.200 which is greater than 0.05 so that the data is normally distributed.

Table 4: Normality Test Result

Variable	Asymp. Sig (2-tailed)	Keterangan
Residual variable employee performance, work environment, work stress	0,200	Normal

2. Linearity Test

Linearity test was carried out on a variable independent of the dependent variable. The results of the statistical test (table 6) show that the significance of each independent variable is greater than 0.05 so that all independent variables are linear with dependent variables.

Table 5: Linearity Test Result

Variable	Significant	Keterangan
Work Environment	0,100	Linear
Work Stress	0,120	Linear

3. Multicollinearity Test

Multicollinearity Test was carried out between independent variables in the study. The results of the static test (table 7) showed a tolerance value of > 0.1 and a VIF value of < 10 . So it can be concluded that there are no symptoms of multicollinearity.

Table 6: Multicollinearity Test Result

Variable	Tolerance	VIF
Work Environment	1,000	1,000
Work Stress	1,000	1,000

6. Heteroscedastisity Test

Heteroscedasticity test was carried out using the Gleiser test. The results of the statistical test (table 8) show a significance level of > 0.05 so it can be concluded that there are no symptoms of heteroscedasticity.

Table 7: Heteroscedastisity Test Result

Variable	Significant
Work Environment	0,102
Work Stress	0,270

Hypothesis Test

Hypothesis yang diajukan pada penelitian ini adalah:

Hypothesis I: Work environment has a positive and significant impact on employee performance of Navigation District Type A Class II Tanjung Emas Port Semarang.f

Hypothesis II: Work stress has a positive and significant impact employee performance Navigation District Type A Class II Tanjung Emas Port Semarang

Hypothesis III: Work environment and work stress has a significant siltmutaneously impact employee performance Navigation District Type A Class II Tanjung Emas Port Semarang

The results of the regression analysis test (table 8) showed the value of the regression coefficient (β) of each variable independent of the dependent variable so that a regression equation was obtained:

$$Y = 1,548 + 0,340 X_1 + 0,245 X_2$$

Through the hypothesis test, it will be known whether each hypothesis is accepted or rejected. The results of hypothesis I (table 8) test on the line of work environment variables obtained a value of sig. 0.003 which is less than 0.05 so that hypothesis I is accepted. The results of hypothesis II test (table 8) in the line of the Work Stress variable were obtained with a value of sig. 0.033 which is less than 0.05 so that hypothesis II is accepted. The results of hypothesis III test (table 8) show that the significance value of the F test is 0.001 which is less than 0.05 so that hypothesis III is accepted. Large determinant coefficient (R^2) of the simultaneously impact is 0,127.

Table 8: Multiple Linear Regression Analysis Result

Variable	β	t	Sig.
Constant	1,548		
Work Environment	0,340	3,070	0,003
Work Stress	0,245	2,159	0,033
F	7,043		0,001
R^2	0,127		

Discussions

The Impact of Work Environment on Employee Performance of Type A Navigation District Class II Tanjung Mas Port Semarang

Based on the results of the study, it is known that hypothesis I is acceptable so that it can be concluded that the work environment has a positive and significant impact on employee performance of the Type A Class II Navigation District of Tanjung Mas Port Semarang. This means that if the work environment increases, employee performance will also increase. A conducive work environment can encourage employees to work optimally. The work environment plays an important role in improving the performance of the Type A Class II Navigation District of Tanjung Mas Port Semarang. This is in line with the research of Darmaputra (2022) and Sofyan (2020) ^[13] that the work environment has a positive and significant impact on employee performance. *The Impact of Work stress on Employee performance of Type*

A Class II Navigation District, Tanjung Mas Port Semarang
Based on the results of the study, it is known that hypothesis II is acceptable so that it can be concluded that work stress has a positive and significant impact on employee performance of the Type A Navigation District Class II of Tanjung Mas Port Semarang. This means that if work stress increases, employee performance will also increase. Employees of the Type A Navigation District Class II Tanjung Mas Port Semarang can respond well to work stress so that it is a job challenge and can actually improve employee performance. Employees who can consider stress to be a work challenge will improve their performance (Mahaputra and Ardana, 2020) ^[6]. This is supported by the research of Mahaputra and Ardana (2020) ^[6] and Aturrizki, et al (2022) ^[1] that work stress has a positive and significant impact on employee performance.

The Impact of Work Environment and Work Stress on Employee Performance of Type A Navigation District Class II Tanjung Mas Port Semarang

Based on the results of the study, it is known that hypothesis III is acceptable, so it is concluded that work environment and work stress simultaneously have a significant impact on employee performance of the Type A Navigation District Class II of Tanjung Mas Port Semarang. This simultaneous impacts contributed by 12.7% ($R^2 = 0,12$). This is in line with research at PT. Nusamulti Centralestari that work environment and work stress have a simultaneous impact on employee performance (Heruwanto *et al.*, 2020) ^[4]. Employees need to have the ability to manage stress in themselves so that their self-development is well maintained so that they can contribute to creating a conducive work environment. Stress management is necessary in organizations to cope with stress (Heruwanto *et al.*, 2020) ^[4].

Conclusion

The results of the study on the impacts of work environment and work stress on employee performance of Navigation District Type A Class II Tanjung Emas Port Semarang resulted in a conclusion:

1. Work environment has a positive ($\beta = 0.340$) and significant (sig. $0.003 < 0.05$) impacts on employee performance so that hypothesis I is accepted. Therefore, the work environment has a positive and significant impact on employee performance Navigation District Type A Class II Tanjung Emas Port Semarang.
2. Work stress has a positive ($\beta = 0.245$) and significant (sig. $0.033 < 0.05$) impacts on employee performance so that hypothesis II is accepted. So, work stress has a positive and significant impact on employee performance Navigation District Type A Class II Tanjung Emas Port Semarang.
3. Work environment and work stress have a significant impact (sig. $0.001 < 0.05$) on employee performance so that hypothesis III is accepted. So, work environment and work stress have a significant impact simultaneously on employee performance Navigation District Type A Class II Tanjung Emas Port Semarang. The magnitude of the simultaneous impacts of work environment and work stress is 12,7% ($R^2 = 0,127$).
4. From the results of the research, it is recommended that the Navigation District Type A Class II Tanjung Emas Port Semarang can maintain the work environment and attitude in dealing with work stress for the future so that this will form a culture and corporate values in driving

the organizational system in the Navigation District Type A Class II Tanjung Emas Port Semarang.

5. Limitations of this study only examine the relationship between work environment and work stress on employee performance. Researchers can then examine the relationship between other factors that contribute to employee performance with a quantitative approach such as organizational culture, work motivation, and others.

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