

THE INFLUENCE OF WORK ENVIRONMENT AND JOB STRESS ON THE PERFORMANCE OF CAREER SAILORS ON BOARD WITH JOB SATISFACTION AS A INTERVENING VARIABLE

(A Study on Sailors Participating in Navigation Skill Training at Politeknik Ilmu Pelayaran Semarang)

Norma Rahmatika Hadi Armika¹, Tristiana Rijanti²
Universitas Stikubank Semarang, Indonesia
Politeknik Ilmu Pelayaran Semarang, Indonesia
Email: armika@pip-semarang.ac.id, tristianar@edu.unisbank.ac.id

ABSTRACT

The research aims to examine the influence of the work environment and job stress on the performance of seafarers in their careers aboard ships, with job satisfaction as an intervening variable. The method applied is a census. The research population consists of all sailors participating in maritime skills training at the Maritime Polytechnic of Semarang, totaling 90 people. Data collection technique involves surveys. The analysis process includes instrument testing, model testing, F-test, multiple regression test, and hypothesis testing. The research results indicate that: (1) the work environment has a significantly positive influence on job satisfaction; (2) job stress has a significantly negative influence on job satisfaction; (3) the work environment has a significantly positive influence on performance; (4) job stress does not have a significant influence on performance; (5) job stress indirectly influences performance negatively through job satisfaction.

KEYWORDS Work environment, job stress, Job Satisfaction, Employee Performance



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INTRODUCTION

The development of the maritime sector in Indonesia is crucial to support various economic, social, and political objectives. Maritime transportation is key to achieving these goals, with sailors playing a central role in maritime operations.

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The quality of skilled and competitive sailors is essential for shipping companies to achieve their business objectives and remain competitive both locally and internationally. To enhance the qualifications and abilities of sailors worldwide, they must meet the standards set forth in the Standards of Training, Certification, and Watch-keeping for Seafarers (STCW) Convention established by the International Maritime Organization (IMO) in 1996. The STCW not only helps ensure minimum training standards, certification, and watch duties for sailors but also aims to ensure safety, environmental protection, security, and comfort for ship crew, cargo, and the vessels themselves. This is aimed at preventing accidents at sea, as emphasized by (Baylon et al., 2011).

However, maritime accidents still frequently occur during navigation. Based on data from the National Transportation Safety Committee (KNKT), the number of ship accidents over the past five years is as follows: 34 incidents reported in 2017, 39 incidents in 2018, 25 incidents in 2019, 12 incidents in 2020, 19 incidents in 2021, 13 incidents in 2022, and the latest figures show 6 incidents in 2023. Figure 1 illustrates cases of ship accidents.

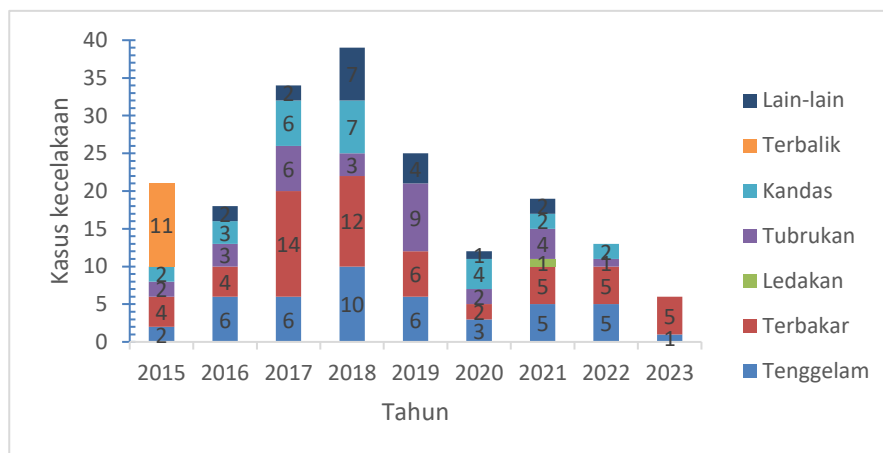


Figure 1. Diagram of the Number of Maritime Accidents in Indonesia

The occurrence of ship accidents has drawn the attention of many parties because it is not in line with the Ministry of Transportation's program to achieve Zero Accidents in maritime transportation, as stated by Inspector General of the Ministry of Transportation, Wahyu Satrio Utomo, on December 18, 2018 (Naomy, Beritatrans.com), downloaded on August 24, 2023. According to (Mangkunegara, 2017), an employee's performance or work achievement is the end result of their efforts to complete tasks on time while maintaining high standards of quality and quantity. In other words, performance reflects the extent to which someone successfully meets or even exceeds the standards set in carrying out their duties at the workplace.

Supporting this theory, (Budiasa, 2021) asserts that performance is the ability to effectively utilize all available resources to achieve goals in a timely manner while maintaining high standards of quality and quantity.

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As stated by Simanjuntak (2020:117), Individual competence, organizational support, and managerial support are three categories included in the factors influencing performance. Mental disorders due to irritation and socio-economic problems, inconsistency, and lack of concentration, are in line with competence factors.

One of the factors that can affect a sailor's performance, according to these experts, is the working conditions. Pay close attention to the working environment because if it is poor, more than 80% of workers will quit (Bintoro & Daryanto, 2017). The surroundings of workers and employees, including things like work facilities that facilitate task completion, can impact worker and employee job satisfaction and, further, their ability to reach their full potential in their jobs (Widyaningrum, 2019). The cost a company has to pay to its employees to increase productivity.

Research by Ayunasrah & Diana, (2022) and Heruwanto et al., (2020) shows that the work environment has a positive and significant impact on performance, similar findings have also been found by other researchers. So far, scientists have studied the relationship between the workplace and employee productivity. Therefore, the business world should pay attention to ship interior design to foster cooperation among employees and between supervisors and subordinates, and ensure the physical and mental well-being of ship crew so that they can perform their duties well.

Research by F. Saputra et al., (2023) found contradictory findings, especially that the workplace factor does not affect productivity. In other words, the research results do not align with what is often anticipated or indicated by previous studies. This may indicate variations in other factors that may affect performance, or there may also be specific contextual factors in the workplace environment being studied.

Another factor that can affect a sailor's performance is job stress, working at sea may feel somewhat monotonous. Fatigue and workplace stress may result from long-term contracts with heavy workloads and frequent workplace conflicts. Stress is a state of tension that affects a person's emotional, mental, and physical health (Siagian, 2018). Negative social and professional interactions often stem from poorly managed stress. Workplace stress is defined as "a dynamic condition characterized by expectations, obstacles, or pressures related to an uncertain yet meaningful goal" (Robbins & Judge, 2017).

According to research, workplace stress significantly impacts productivity (Heruwanto et al., 2020). Similar findings regarding the impact of stress on performance have been achieved by (Riefky et al., n.d.). Although this study did not find a correlation between stress and job performance, previous research conducted by Mangkunegara & Puspitasari, (2015) and Isnanto & Indrawati, (2020) support this idea.

In addition to workplace environment and stress factors, shipping companies also need to pay attention to job satisfaction factors for ship crews in their company, so that the sailors are comfortable working and have a positive impact on their performance on board. According to Robbins in (Agustini, 2019), job satisfaction is an individual's overall perspective on their work. Among the many aspects of any job are contact with colleagues and superiors as well as organizational regulations,

performance expectations, and the work environment. Attitudes that lead to positive feelings about one's job indicate job satisfaction, while attitudes that lead to negative feelings indicate job dissatisfaction.

Hanafi & Yohanna, (2017) state in their research that job satisfaction towards employee performance has a significant influence. Unlike the study by Fauziek & Yanuar, (2021) stating that job satisfaction has no effect on performance.

Literature Review

Performance

(Budiasa, 2021) asserts that performance is the ability to utilize available resources maximally to achieve predetermined goals in a timely manner while maintaining high standards of quality and quantity. (Bintoro & Daryanto, 2017) succinctly state that performance is simply the end result of an employee's efforts, regardless of how good or bad the outcome may be.

As stated by Simanjuntak (2020:117), factors influencing performance are categorized into three groups: the skills of those involved, support from the company, and support from top-level management. Another opinion by (Kasmir, 2022) suggests that factors affecting performance, both in terms of outcomes and work behavior, include "1) competence and skills, 2) understanding of content, 3) task descriptions, 4) unique character traits, 5) intrinsic motivation in work, 6) managerial sharpness, 7) leadership methods, 8) organizational culture, 9) satisfaction with one's position, 10) workplace arrangements, 11) dedication, 12) loyalty, 13) self-control in the workplace." According to (Mangkunegara, 2017), performance assessment indicators consist of Quantity of work, quality of work, cooperation, responsibility, and initiative.

Job Satisfaction

According to (Hasibuan, 2017), job satisfaction is the feeling of contentment that arises from enjoying one's work. Workers experience job satisfaction when they are emotionally engaged in their work, and it can be either pleasurable or unpleasurable (T. H. Handoko, 2016). When an employee feels happy with their job, it reflects their feelings towards their work. According to (Robbins & Judge, 2017), job satisfaction indicators include the job itself, pay, promotion, and supervision.

Work Environment

According to Mangkunegara (2015:17), the work environment consists of clear roles and responsibilities, ambitious goals, efficient communication methods, a conducive atmosphere, and practical facilities. The term "work environment" refers to the overall interaction of workers with their immediate physical environment, the resources they can access, the processes they use, and how they collaborate with others.

According to Sedarmayanti, (2017), There are two types of workplace environment indicators. One type includes the physical space itself, which encompasses factors such as lighting, noise, temperature, humidity, air circulation,

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color, unpleasant odors, and mechanical vibrations. A worker's social environment, social status, work relationships, and company information systems are all aspects of the non-physical work environment.

Job stress

According to (Sinambela, 2019), job stress is the emotion experienced by workers when faced with their job tasks. Symptoms of job-related stress include mood and behavioral changes, reluctance towards social situations, difficulty sleeping, excessive smoking, difficulty relaxing, restlessness, tension, anxiety, high blood pressure, and digestive issues.

Job stress, as stated by (Robbins & Judge, 2017), is a negative mental state that develops as a response to external demands. Employee stress indicators in the workplace, as identified by (Robbins & Judge, 2017), include:

1. Psychological indicators
2. Physiological indicators
3. Behavioral indicators

RESEARCH METHOD

This study employs a quantitative method based on the Likert scale and falls into the category of explanatory research. The population of this study consists of 90 individuals participating in the seafarer skills training program at the Semarang Marine Science Polytechnic. All samples are drawn from this group, using a census sampling method. The questionnaire serves as the primary data collection source and contains questions about the respondents' attributes and thoughts regarding the work environment, workplace stress, job satisfaction, and sailing performance. A questionnaire approach is used for data collection. Multiple linear regression, validity and reliability tests, as well as Sobel's mediation test, are all conducted as part of the data analysis using the SPSS statistical analysis tool. Factors such as the work environment, stress levels, job satisfaction, and productivity are examined. Instrument testing, model testing, hypothesis testing, mediation testing, and multiple linear regression analysis are the procedures performed for the data analysis process.

RESULT AND DISCUSSION

The research was conducted in January 2024 by distributing questionnaires directly to each participant. A total of 90 questionnaires were distributed, and out of this number, 85 questionnaires were returned, but only 72 could be processed. The research respondents consisted of 64 males (88.9%) and 8 females (11.1%). The majority of respondents were in the age range of 20-30 years (55.6%), followed by 31-40 years (31.9%), 41-50 years (8.3%), and >51 years (4.2%). Based on the type of training, the majority of respondents came from BTOCT (31.9%), followed by ERM (22.2%), ATOT (15.3%), CMT (16.7%), and RADAR (13.9%). The majority of respondents (63.9%) had sailing experience of <5 years. In terms of departments on board, the majority of respondents came from the Deck department (66.7%), followed by Engine (27.8%), and Galley (5.6%).

The work environment variable had a mean value of 6.29, indicating that respondents tended to agree that the work environment on board was good. The job stress variable had a mean value of 4.12, indicating that respondents tended to be neutral about the level of stress in their workplace. Meanwhile, the job satisfaction variable had a mean value of 6.1, indicating that respondents tended to agree that they were satisfied with their jobs. Some aspects considered to influence job satisfaction levels include fair wages, career opportunities, and fair performance evaluations.

Instrument Testing

Validity Test

To determine how well a measuring instrument measures a particular concept, researchers conduct a validity test. Factor analysis is used to assess validity. Questions in a questionnaire can be considered valid if they can reveal the construct being tested by the questionnaire. If the KMO value > 0.50 then the sample adequacy has been met. Based on the Role of Thuns, loading factor (component matrix) has a value of > 0.4, then the item is valid. (Ghozali, 2016)

Table 1. Validity Test Results

Variable	KMO	Indicator	Component Matrix	Loading factor	Information
Work Environment (X1)	0,820	X1.1	0,620	0,4	Valid
		X1.2	0,734	0,4	Valid
		X1.3	0,729	0,4	Valid
		X1.4	0,734	0,4	Valid
		X1.5	0,746	0,4	Valid
		X1.6	0,489	0,4	Valid
		X1.7	0,631	0,4	Valid
		X1.8	0,738	0,4	Valid
		X1.9	0,740	0,4	Valid
		X1.10	0,536	0,4	Valid
Job stress	0,862	X2.1	0,797	0,4	Valid
		X2.2	0,769	0,4	Valid
		X2.3	0,867	0,4	Valid
		X2.4	0,844	0,4	Valid
		X2.5	0,915	0,4	Valid
		X2.6	0,895	0,4	Valid
		X2.7	0,820	0,4	Valid
		X2.8	0,883	0,4	Valid
Job Satisfaction	0,856	Y1.1	0,807	0,4	Valid
		Y1.2	0,812	0,4	Valid
		Y1.3	0,762	0,4	Valid
		Y1.4	0,788	0,4	Valid
		Y1.5	0,659	0,4	Valid

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		Y1.6	0,702	0,4	Valid
		Y1.7	0,715	0,4	Valid
		Y1.8	0,517	0,4	Valid
		Y1.9	0,642	0,4	Valid
		Y1.10	0,746	0,4	Valid
Performance	0,900	Y2.1	0,804	0,4	Valid
		Y2.2	0,842	0,4	Valid
		Y2.3	0,691	0,4	Valid
		Y2.4	0,798	0,4	Valid
		Y2.5	0,835	0,4	Valid
		Y2.6	0,845	0,4	Valid
		Y2.7	0,804	0,4	Valid
		Y2.8	0,733	0,4	Valid
		Y2.9	0,787	0,4	Valid
		Y2.10	0,664	0,4	Valid
		Y2.11	0,850	0,4	Valid
		Y2.12	0,787	0,4	Valid
		Y2.13	0,808	0,4	Valid

Source: Primary data processed in 2024,

The KMO value calculated from all variables in this study (X1, X2, Y1, Y2) from the SPSS results is >0.5 with a significant value of 0.000, indicating that the sample adequacy criteria are met and the research can proceed. The validity testing of all indicator variables in this study has a component matrix each meeting the required value, which is a loading factor >0.4 , thus it can be concluded that all questionnaire items in this study are deemed valid.

Reliability Test

Reliability testing is assessing the reliability of a measuring instrument by comparing its findings when given to the same individuals or at different time periods to ensure that the instrument remains stable and accurate over time.

Table 2. Reliability Test Results

NO	Variable	Alpha cronbach	Realibility standards	Criteria
1.	Working environment (X1)	0,861	0,7	Reliable
2.	Job stress (X2)	0,943	0,7	Reliable
3.	Job Satisfaction (Y1)	0,892	0,7	Reliable
4.	Performance (Y2)	0,949	0,7	Reliable

Source: Primary data processed 2024,

The results of the test obtained Cronbach alpha results which show α count $>$ α Cronbach, So, it can be concluded that the variables used in this study can be trusted.

Multiple Linear Regression Test

Through the use of multiple regression analysis methodology, this study seeks to demonstrate the validity of the research hypothesis regarding the influence of the

independent variable on the dependent variable. This study used SPSS version 22.0 for the purpose of performing statistical calculations. The results obtained from the processed data are as follows:

Table 3. Multiple Linear Regression Analysis Results

No	Regression Model	Model Test			Hypothesis Test			Info
		Adjusted R2	F Test Fcount	Sig	B	t	Sig	
1	Regression Model I	0,400	24,644	0,000				
	The Effect of Work Environment and Job stress on Job Satisfaction $Y1=0,549X1-0,302X2+e$				0.549	5,951	0,000	H1 Accepted
	The Effect of Work Environment on Job Satisfaction							
	The Effect of Job stress on Job Satisfaction				-0,302	-3,273	0,002	H2 Accepted
2	Regression Model II	0,712	59,541	0.000				
	The Effect of Work Environment, Job stress and Job Satisfaction on Performance. $Y2=0,212X1-0,095X2+0,672Y1+e$							
	The influence of the work environment on performance				0,212	2,696	0,009	H3 Accepted
	The effect of job stress on performance				-0,095	-1,380	0,172	H4 Rejected
	The effect of job satisfaction on performance				0,678	8,131	0,000	H5 Accepted

Source: primary data processed 2024

In the multiple linear regression equation for model 1, the regression equation can be included as follows:

$$Y1=0,549X1-0,302X2+e$$

From the regression equations above, it can be perceived that:

1. Job satisfaction correlates positively with the factor of the work environment, meaning that a person's level of job satisfaction is directly proportional to how well their work environment is.
2. A person's job satisfaction decreases as the level of their job increases because the variable of job stress negatively affects job satisfaction.

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In the multiple linear regression equation for model 2, the regression equation can be included as follows:

$$Y_2 = 0,212X_1 - 0,095X_2 + 0,678Y_1 + e$$

From the regression equation above, it can be perceived that:

1. Variables related to the work environment have a good influence on performance; meaning that those who work in favorable environments will perform better overall.
2. There is a negative relationship between job stress and performance; meaning that the more stressed someone is at work, the lower their performance will be.
3. There is a positive relationship between job satisfaction and performance; meaning that individuals who are more satisfied with their jobs will perform better.

Model Testing

R² Test (Coefficient of Determination)

The determination test, in regression analysis, measures how well the regression model can explain the variation or variability of the dependent variable (the variable to be predicted) based on the independent variables (the variables used to make predictions).

Multiple linear regression analysis indicates that factors such as R2 value, workplace stress, and working conditions all play a role in how satisfied an employee is with their job.

The corrected squared value is 0.400, as seen in Table 3. This indicates that other variables contribute 60% of the variance in job satisfaction, while the remaining 40% is explained by factors related to the work environment and stress.

We know the adjusted squared value is 0.712 from Table 3. This indicates that workplace-related factors, including stress and job satisfaction, account for 71.2% of the variance in performance, while other variables account for 28.8%.

F Test

To demonstrate if all independent variables in this research regression model collectively influence the dependent variable, researchers often use a simultaneous test called an F-test (Ghozali, 2016). After conducting simultaneous testing, the following table will display the results of the regression calculation:

Based on the data in Table 3, it can be seen that the model meets the Goodness of Fit criteria because the significance level is $0.000 < 0.05$, indicating the influence of the work environment and stress on job satisfaction.

From the results of the regression test on the model shown in Table 3, it can be stated that the model meets the Goodness of Fit criteria because the ANOVA significance level is 0.000, less than 0.05. The impact of factors such as working atmosphere, stress level, and job satisfaction on an individual's productivity.

The results indicate that job satisfaction, stress, and the work environment all play a role in determining performance.

Parsial Test (t test)

H1 : Work Environment has a positive effect on job satisfaction

In accordance with the calculations presented in table 3, the impact of the work environment on job satisfaction was found to have a beta value of 0.549, indicating a statistically significant level of significance ($p < 0.05$). using a significance level of less than 0.05, then **Hypothesis 1 is accepted.**

H2: Job stress negatively affects job satisfaction

The effect of auditor integrity on the consideration of the level of materiality is determined by a Beta value of job stress of -0.302 with a significance level of 0.002 ($p < 0.05$). This is based on calculations made using table 3 which can be seen here. If the significance level is less than 0.05, then **Hypothesis 2 is accepted.**

H3: Work environment has a positive effect on performance

Using the calculations presented in table 3, it can be determined that the effect of the work environment on performance is statistically significant, with a Beta value of 0.212 and a significance level of 0.009 ($p = 0.05$). using a significance level of less than 0.05, then **Hypothesis 3 is accepted.**

H4: Job stress negatively affects performance

A beta value of -0.095 and a significance level of 0.172 ($p > 0.05$) are the calculation findings presented in table 3 which show that the effect of job stress on performance obtained a beta value. Because the significance level is higher than 0.05, **Hypothesis 4 is rejected.**

H5 : Job satisfaction has a positive effect on performance

Based on the calculation findings presented in table 3, the effect of job satisfaction on performance is determined by a beta value of 0.678 which is statistically significant at the level of 0.000 ($p < 0.05$). using a significance level of less than 0.05, then **Hypothesis 5 is accepted.**

Sobel Test

In this study, the Sobel test was conducted to test for mediation. The following are the results of the Sobel test that has been conducted:

Table 5. Sobel Test

Variable	Value	Sig(two)	Significance Value	Information
Work Environment to performance through job satisfaction	0,5847	0,000	<0,05	Significance
Job stress on performance through job satisfaction	-,0,112	0,003	<0,05	Significance

Based on the table, the following conclusions can be drawn:

1. The influence of the work environment on performance through job satisfaction

The calculation findings of the indirect effect of the work environment (X1) on performance (Y2) through job satisfaction (Y1) indicate that job satisfaction is an intervening variable, with a significant value (0.000, <0.005). This suggests that improving job satisfaction and the work environment together enhances the performance of sailors.

2. The influence of job stress on performance through job satisfaction

The calculation results of the indirect effect of job stress (X2) on performance (Y2) through job satisfaction (Y1) show a significant result of 0.003, which means <0.005 . Therefore, it can be concluded that job satisfaction is an intervening variable, and job stress synergizes with job satisfaction to enhance the performance of sailors.

Discussion

Drawing conclusions from the above data processing results, the analysis description can be provided as follows:

The Influence of the Work Environment on Job Satisfaction

Regression analysis findings indicate a positive and significant influence of the work environment on job satisfaction, with a regression coefficient value of 0.548 and a significance level of $0.000 < 0.05$. This means that the work environment contributes to individual job satisfaction. Therefore, we can conclude that H1 is true. This is consistent with previous research conducted by Saputra (2022), Vahera and Onsardi (2021), and Ariansy and Kurnia (2022), all of which reached the same conclusion: job satisfaction is positively and significantly influenced by the work environment.

The Influence of Job Stress on Job Satisfaction

The regression test results show that job stress has a significant negative impact on job satisfaction, with a regression coefficient of -0.303 and a significance level of $0.002 < 0.05$. This leads us to accept hypothesis number two, or H2. The findings of this study corroborate previous research conducted by Handayani & Daulay (2021), Sandiarta & Suwandana (2020), and Rifky, Haryati, Anggareni (2021), which concluded that job satisfaction is significantly negatively affected by job stress.

The Influence of the Work Environment on Sailor Performance

Regression analysis results indicate a significant and beneficial influence of the work environment on performance, with a regression coefficient of 0.222 and a significance level of $0.005 < 0.05$. This suggests that each employee's work environment has a small impact on their performance. Our conclusion is based on the third hypothesis, or H3. Job stress has a significant negative impact on job satisfaction, according to the research by (Setyaji & Rijanti, 2022); Setiani & Febrian, 2023; and Ratnasari et al., 2020. These findings are reinforced by the results of this study.

The Influence of Job Stress on Sailor Performance

Regression analysis indicates that job stress influences performance, with a significance level of $0.172 > 0.05$ and a regression coefficient of -0.062, indicating that job stress does not affect performance. As a result, the fourth hypothesis (H4) is refuted. This research finding is consistent with previous research by

(Mangkunegara & Puspitasari, 2015), which found that job stress does not affect performance but has a significant negative impact on performance through job satisfaction. The maritime profession often involves high pressure and unstable environmental conditions, such as weather changes, being far from family and friends, and heavy workloads. These conditions may lead to high levels of stress among sailors. In some cases, sailors may be trained to cope with this stress as part of their job and can handle pressure effectively. Therefore, even though they experience stress, their performance may not be directly affected by it.

The Influence of Job Satisfaction on Sailor Performance

With a regression coefficient of 0.652 and a significance level of $0.000 < 0.05$, regression analysis results indicate that job satisfaction significantly affects performance positively. Therefore, we know that H5 is true. Job satisfaction has a positive and significant impact on productivity, according to previous research conducted by Sembiring (2021), Gani (2020), and Syahidin (2022).

CONCLUSION

The following conclusions can be drawn from the analysis conducted by the author: 1. The work environment where someone works has a positive and significant influence on the level of job satisfaction they experience. When both the physical and non-physical work environments are well maintained, sailors report higher levels of job satisfaction compared to when other environments are maintained. 2. Workplace-related stress has a significant and detrimental impact on job satisfaction. Therefore, the level of stress faced by sailors in their work is directly related to the level of job satisfaction they experience. 3. The overall quality of the work environment has a direct correlation with sailor performance. As a result, a better work environment is associated with higher performance among sailors. 4. There is no relationship between sailor performance and job stress. 5. A sailor's performance on board correlates positively and significantly with their level of job happiness. In other words, a sailor's job satisfaction level determines how well they perform their duties. 6. For the work environment to affect performance, job satisfaction acts as a mediator. 7. Job satisfaction also acts as a mediator between job stress and performance.

Here are some recommendations based on the analysis outlined above: 1. The job satisfaction variable has the greatest influence on sailor performance with a beta value of 0.678 and the lowest average mean value on indicator Y1.8 at 5.74, so to improve sailor performance, ship management needs to provide emotional support to the crew on board when needed and when problems occur with the crew. 2. The work environment variable has the greatest influence on sailor job satisfaction with a beta value of 0.549 and the lowest average mean value on indicator X1.4, so to improve job satisfaction, it is necessary to improve the facilities of the work environment on board by paying attention to cooling and heating facilities on board to effectively maintain temperature and provide a comfortable working environment. According to the investigation, both the physical and non-physical aspects of sailor job satisfaction are positively and significantly influenced by the work

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environment. Conversely, job satisfaction is negatively influenced by workplace stress. Job satisfaction mediates the impact of the work environment and job stress on performance, although workplace stress does not directly affect sailor performance. However, this study has limitations in explaining the relationship between variables, where other variables outside the model contribute most of the explanation. Therefore, further research is recommended to add variables to test their effects on job satisfaction and performance. It is also recommended for shipping companies to implement physical and mental health programs for sailors and to pay attention to sailor welfare as an integral part of management strategy to improve their performance on board.

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