

The Influence of Job Stress and Rewards on Shipping Safety in with Job Satisfaction as a Variable Intervening (Case Study of PIP Makasar Alumni Sailors Batch XXXVIII)

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ABSTRACT

This research aims to analyze the influence of work stress and rewards on shipping safety, with job satisfaction as an intervening variable. The method used in this research is quantitative. The sample in this research were alums of the Makassar Maritime Science Polytechnic class XXXVIII who had worked with as many as 234 respondents. The analysis uses the Partial Least Square Structural Equation Model (PLS-SEM) method using the SmartPLS 3.0 application. SmartPLS. The results of this research are that work stress, rewards, and job satisfaction have a significant effect on shipping safety. Job stress and rewards have a significant effect on job satisfaction. Job stress and rewards have an indirect effect on shipping safety, with job satisfaction as a connecting variable.

INTRODUCTION

Shipping workers in Indonesia are a vital part of Indonesia's rapidly growing maritime industry. They are professionals who play a role in operating ships, maintaining shipping security, and handling various logistics and trade activities in Indonesia's vast waters. Shipping workers in Indonesia face a variety of challenges, including harsh working conditions on board ships, long journeys that often separate them from their families, and safety and security risks at sea. This low level of shipping safety can be caused by weak human resource management, including education, competence, working conditions, working hours and process management, resulting in increased economic costs and medical costs, inefficient use of energy and pollution (Suryani et al., 2018).

Shipping safety cannot be separated from the behaviour and negligence of sailors on board. If they follow and comply with existing work procedures in fulfilling the rules and SOPs for K3 Facilities, work accidents, both crew accidents and ship accidents, can be minimized so that the smooth operation of transport can get maximum results, which of course will have an impact on the company and the seafarers who work. There. Work accidents occur due to interrelated factors, namely the social environment (work conditions), which includes a person's background, such as lack of knowledge, human negligence, which includes low motivation, conflict of inappropriate skills and stress. Then behaviour and conditions such as unsafe behaviour (carelessness), not using PPE, not following work procedures, and not complying with workplace signs (Heinrich et al., 1980).

Several factors influence work safety itself, one of which is work stress. According to Putri & Tualeka (2014), "Work stress causes as many as 14,000 industrial workers to die due to work accidents every year (almost 55 people per day or seven people per working hour) and approximately 100,000 workers are permanently disabled every year." According to Hilman et al. (2022), "Work stress is a condition of tension that affects a person's emotions, thought processes and condition." Job stress can be caused by workload, role conflict, poor working conditions, lack of control, poor relationships with colleagues or superiors, job insecurity, lack of recognition or appreciation, and poor work-life balance (Vallasamy et al., 2023). Work stress will directly affect the workers themselves so that workers lose concentration, get bored and become careless, which will ultimately result in work accidents. In research conducted by Purnaningratri et al. (2022), "Work stress has an indirect effect through seafarers' performance on shipping safety". In Maulana et al.'s research. (2022), "Work stress experienced by workers has a significant effect on work accidents". However, in another study conducted by Maulidiah Suhma et al. (2020), where it was found that "There is no significant influence between work stress and the incidence of work accidents".

Rewards are also no less important in motivating employees always to pay attention to work safety. According to Putri and Martiana (2018), "Rewards are positive consequences given to workers with the aim of developing, supporting and maintaining expected behaviour. If rewards are used properly, they can form feelings of self-confidence, self-esteem, self-control, optimism

and a sense of belonging." Rewards given to employees as a form of recognition for good safety behaviour can be a strong motivation for employees to continue to comply with safety procedures in the workplace. This can increase awareness and compliance with safety rules.

Another factor that needs to be considered in fulfilling work safety by employees is employee job satisfaction. According to Rarindo and Satata (2021), "Job satisfaction is a positive feeling resulting from an evaluation of job characteristics." A person's level of job satisfaction can influence how seriously they take workplace safety issues. Satisfied employees tend to pay more attention to safety procedures, use personal protective equipment, and comply with safety rules. In previous research conducted by Purnaningratri et al. (2022), it is known that "Job satisfaction has an indirect effect on seafarers' performance on shipping safety". According to Muslih & Pratama (2022), "Job satisfaction can influence work behaviour such as being lazy, diligent, proactive, etc., or has a relationship with several types of behaviour that are very important in the company." This behaviour will then make workers think that personal protective equipment is not important at work, thus making workers ignore safety factors at work.

This research is a modification of previous research conducted by Purnaningratri et al. (2022), who studied shipping safety in terms of job satisfaction and work stress with seafarers' performance as an intervening variable. Modifications in this research are changes in the intervening variable from seafarer performance to job satisfaction and the addition of reward variables as well as changes to the objects studied. The author attempts to review the influence between work stress and reward through the variable job satisfaction and shipping safety. Therefore, the researchers gave the title of this research, "The Effect of Job Stress and Rewards on Shipping Safety with Job Satisfaction as an Intervening Variable".

LITERATURE REVIEW

The Influence of Job Stress on Shipping Safety

When a person experiences high levels of stress, the ability to concentrate and focus on certain tasks can decrease. According to Hasibuan and Susilawati (2023), "Stress factors such as time pressure, excessive responsibility, and a risky work environment can disrupt workers' concentration and motivation." Job Stress can increase the risk of work accidents because workers may need to pay attention to warnings or dangers around them. In research conducted by Purnaningratri et al. (2022), "Work stress influences shipping safety". Based on this, the researcher formulated the following hypothesis:

H1: Job Stress Influences Shipping Safety.

The Influence of Job Stress on Job Satisfaction

Employees who experience stress can have an impact on satisfaction in doing work at work. According to Yasa & Dewi (2019), "Job stress has a significant effect on job satisfaction." Then, according to Fardah and

Ayuningtyas (2020), "Work stress has a significant negative effect on employee satisfaction." Stress can cause decreased work performance due to impaired focus, fatigue, or anxiety. When the level of work stress increases, it can cause a decrease in the level of job satisfaction and vice versa (Sanjaya, 2021). Job stress is a serious problem related to satisfaction at work (Bara, 2023). Based on this, the researcher formulated the following hypothesis:

H2: Job Stress Influences Job Satisfaction.

The Influence of Rewards on Shipping Safety

Providing rewards can be an incentive for ship crew to comply with shipping safety procedures. When crew feel appreciated and recognized for their compliance with safety rules, they are more likely to better comply with safety procedures. As stated by Fauzi et al. (2019) in their research, "Rewards have a positive and significant effect on workers' K3 discipline". Giving awards can motivate an employee to work better and increase compliance with occupational safety and health (Sari, 2020). Crews who feel valued and incentivized to pay attention to safety will be more likely to participate in the identification and mitigation of potential risks actively. Adequate rewards can help reduce the negative impact of work stress on shipping safety (An et al., 2020). Based on this, the researcher formulated the following hypothesis:

H3: Rewards Influence Shipping Safety.

The Influence of Rewards on Job Satisfaction

Rewards provide recognition for employee contributions and efforts. When employees feel appreciated and recognized, they tend to feel more satisfied with their work. According to Aini and Frianto (2020, "The higher the level of bonuses and allowances received from the company, the higher the job satisfaction will be." Rewards have a significant effect on employee job satisfaction (Fitri & Setyaningrum, 2024). When employees feel that rewards are given fairly based on performance, they are more likely to feel satisfied with their work and have more trust in management. With rewards, there will be employee satisfaction, which will ultimately make employees more productive and will prevent frustration and low employee job satisfaction (Saudagar & Pradana, 2020). Based on this, the researcher formulated the following hypothesis:

H4: Rewards Influence Job Satisfaction.

The Influence of Job Satisfaction on Shipping Safety

Workers who are satisfied with their jobs tend to be more motivated to comply with established safety procedures. They feel that their work is valued and has a positive impact, so they are more likely to pay attention to safety rules and maintain a safe work environment. According to Muslih & Pratama (2022), "Job satisfaction can influence work behaviour such as being lazy, diligent, proactive, etc., or has a relationship with several types of behaviour that are very important in the company. Workers who feel satisfied with their jobs tend to do their jobs better, including in terms of safety (Andora & Ermita, 2019). They may be more careful, more focused, and more responsive to

potentially dangerous situations. Based on this, the researcher formulated the following hypothesis:

H5: Job Satisfaction Influences Shipping Safety.

Indirect Effect of Job Stress on Shipping Safety with Job Satisfaction as a Linking Variable

High levels of work stress can disrupt the concentration, decision making and general performance of the crew on board. Work stress can increase the risk of accidents and incidents at sea. In research conducted by Purnaningratri et al. (2022), "Work stress has an indirect effect through seafarers' performance on shipping safety". Meanwhile, employees who experience stress can have an impact on satisfaction in doing work at work. As said by Yasa & Dewi (2019), "Job stress has a significant effect on job satisfaction". According to Yuen et al. (2018), "the amount of stress associated with working on a ship and the attractiveness of rewards are determining factors of job satisfaction". When a person experiences high levels of stress, the ability to concentrate and focus on certain tasks can decrease. Meanwhile, workers who feel satisfied with their jobs tend to do their jobs better, including in terms of safety (Andora & Ermita, 2019). Based on this, the researcher formulated the following hypothesis:

H6: Job stress has an indirect effect on shipping safety, with job satisfaction as a connecting variable.

Indirect Effect of Rewards on Shipping Safety with Job Satisfaction as a Linking Variable

When employees feel appreciated and recognized, they tend to feel more satisfied with their work. Giving awards can motivate an employee to work better and increase compliance with occupational safety and health (Sari, 2020). High job satisfaction can increase compliance with safety procedures on ships. In previous research conducted by Purnaningratri et al. (2022), it is known that "Job satisfaction has an indirect effect on seafarers' performance on shipping safety". Rewards that are commensurate with contribution and good performance can increase job satisfaction and strengthen motivation to do work safely and efficiently. Workers who feel valued and satisfied with their working conditions are more likely to comply with established safety rules and procedures. Based on this, the researcher formulated the following hypothesis:

H7: Rewards have an indirect effect on shipping safety, with job satisfaction as a connecting variable.

According to Sekaran and Bougie (Purwohedi, 2022), "The theoretical framework describes the relationship between one variable (concept) and other variables". Every thought requires a flow or concept to make it easier to develop a thought pattern. Therefore, a framework for thinking needs to be created." This research examines the relationship between job stress and job satisfaction through reward variables related to shipping safety. The following is an image of the framework of thinking compiled in this research:

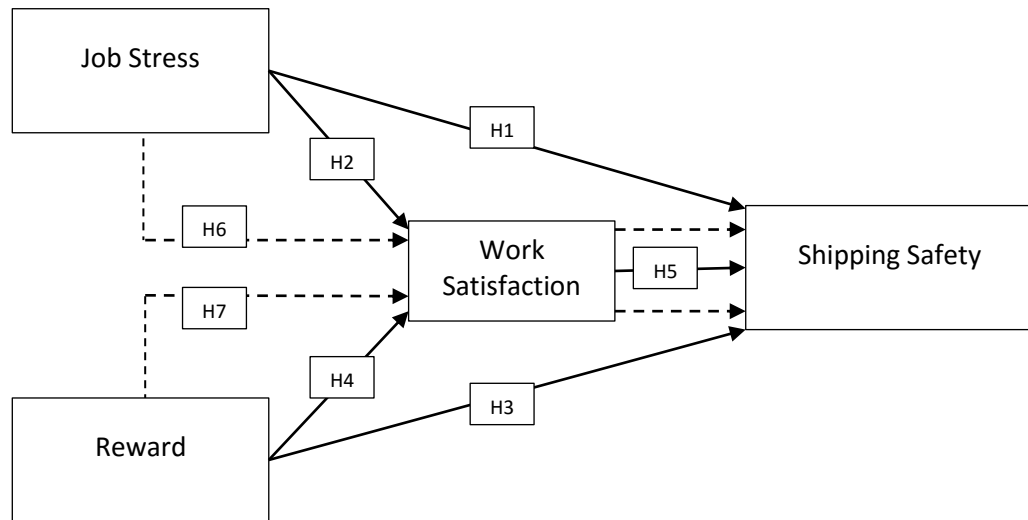


Figure 1. Conceptual Framework

METHODOLOGY

The type of research used is a causal study. Causal research itself is research that has a relationship between independent variables (independent variables) and dependent variables (dependent variables), which have a cause-and-effect relationship in the process. Sugiyono (2019) stated that "causal is a relationship based on cause and effect on independent and dependent variables". Meanwhile, causal studies, according to Sekaran & Bougie (2017), are "one variable causes another variable to change or not". In causal studies, one or more factors that cause a problem.

The method used in this research is a quantitative method with the aim of creating a systematic description of the facts and characteristics of the object to be studied and then combining the relationships between the variables used. Quantitative research, according to Sekaran and Bougie (2017), is "a scientific method in which data is in the form of numbers or numbers that can be processed and analyzed using mathematical or statistical calculations". This research places greater emphasis on the analysis of numerical data (numbers), which are processed using statistical methods. Researchers use a quantitative approach; according to Sugiyono (2019), "quantitative methods have fulfilled the rules of a systematic scientific method".

This research consists of several activities, starting with the preparation of a research proposal to a trial of research results, and will be carried out from May 2024 to July 2024. The population in this research is alums of the Makassar Maritime Science Polytechnic class XXXVIII, who have worked in the shipping sector, totalling 559 people based on data. Graduate of the Makassar Maritime Science Polytechnic. PIP Makassar is a tertiary institution in Makassar City, South Sulawesi, which the Ministry of Transportation of the Republic of

Indonesia manages. The sample size in this study will be determined using the Slovin formula with the following formula:

$$n = \frac{N}{1+Ne^2} \quad (1)$$

So, the sample calculation in this study based on the Slovin formula is as follows:

$$n = \frac{559}{1+559(0.05)^2} = 233,16 \text{ rounded up to } 234 \text{ respondents.}$$

In this research, the author used the Partial Least Square Structural Equation Model (PLS-SEM) method using the SmartPLS 3.0 application. SmartPLS is software created as a project at the Institute of Operation Management and Organization (School of Business) University of Hamburg, Germany. The number of samples required for the analysis is relatively small. The use of PLS-SEM is used because this research has a limited number of samples while the model built is quite complex.

RESEARCH RESULT

Gender, employment position, place of employment, and duration of service were among the many factors used to categorise the participants in this research. The following table displays information about the study's respondents' demographics:

Table 1. Characteristics Of Respondents

Criteria	Total	%
Gender		
Man	158	67,52
Woman	76	32,48
Total	234	100
Job Status		
Working in Shipping	207	88,46
Working in Non-Sailing	27	11,54
Total	234	100
Working Location		
Indonesia/Domestic	125	53,42
Overseas	109	46,58
Total	234	100
Years of Service		
< 6 Months	15	6,41
6 Months - 1 Year	128	54,70
1 Year - 2 Years	37	15,81
2 Years - 4 Years	41	17,52
> 4 Years	13	5,56
Total	234	100,00

Based on gender, there were 158 male respondents or 67.52% of the total respondents, while there were 76 female respondents or 32.48% of the total respondents. Table 1 shows that male respondents dominated the respondents in this study. Based on employment status, respondents who worked in the shipping sector amounted to 207 respondents or 88.46% of the total respondents. In comparison, respondents who worked in the non-shipping sector amounted to 27 respondents or 11.54% of the total respondents. Table 1 shows that the respondents in this study were dominated by respondents who worked in the shipping sector.

Based on work location, respondents who worked in Indonesia or domestically amounted to 125 respondents or 53.24% of the total respondents, while respondents who worked abroad amounted to 109 respondents or 46.58% of the total respondents. Table 1 shows that the respondents in this study were dominated by respondents who worked in Indonesia or domestically. Based on their work period, respondents who worked for less than six months amounted to 15 respondents or 6.41% of the total respondents, respondents who worked for more than six months to 1 year amounted to 128 respondents or 54.70% of the total respondents, respondents who worked more than one year to 2 years amounted to 37 respondents or 15.81% of the total respondents, respondents who worked more than two years to 4 years amounted to 41 respondents or 17.52% of the total respondents while respondents who worked more than four years amounted to 13 respondents or 5.56% of total respondents. Table 1 shows that the respondents in this study were dominated by respondents who worked for more than six months to 1 year. In this section, each statistical test you perform should be thoroughly explained. This section is very important to describe the research methodology used. Each statistical finding should be summarized and presented in a table or graph; not just copy-paste from your statistics tool.

Outer Model Analysis

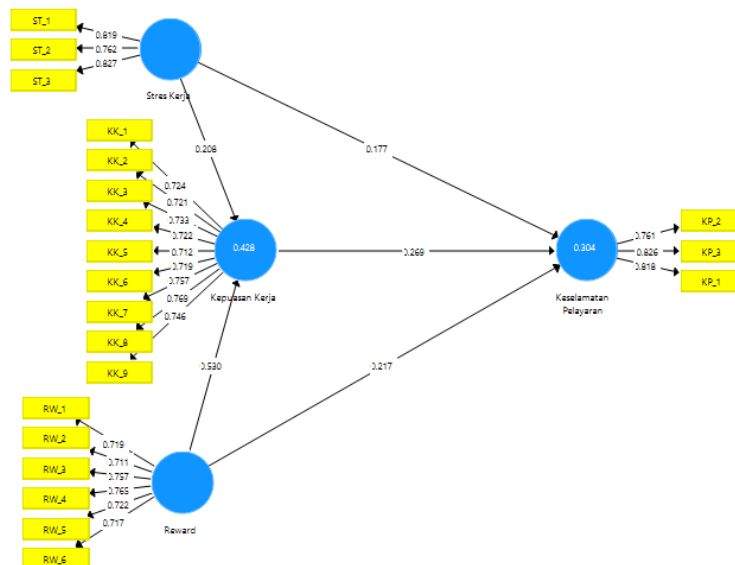


Figure 2. Outer Model

The purpose of outer model analysis is to guarantee that the measurements are valid and dependable before using them. From the forming indicators to the latent construct and composite reliability, convergent and discriminant validity are used to evaluate the outer model with reflexive indicators. Cronbach's alpha is also used for the indicator block.

Table 2. Convergent Validity

Variable	Indicator	Loading Factor	AVE	Criteria
Work Satisfaction	KK_1	0.724	0.539	Valid
	KK_2	0.721		Valid
	KK_3	0.733		Valid
	KK_4	0.722		Valid
	KK_5	0.712		Valid
	KK_6	0.719		Valid
	KK_7	0.757		Valid
	KK_8	0.769		Valid
	KK_9	0.746		Valid
Shipping Safety	KP_1	0.818	0.643	Valid
	KP_2	0.761		Valid
	KP_3	0.826		Valid
Reward	RW_1	0.719	0.536	Valid
	RW_2	0.711		Valid
	RW_3	0.757		Valid
	RW_4	0.765		Valid
	RW_5	0.722		Valid
	RW_6	0.717		Valid
Job Stress	ST_1	0.819	0.645	Valid
	ST_2	0.762		Valid
	ST_3	0.827		Valid

All loading factor values in the table above are greater than 0.7, and the Average Variance Extracted (AVE) value for each construct with a correlation between other constructs greater than 0.5, so it can be explained that the outer model value or correlation between the construct and the latent variable has met convergent validity, according to the calculation results in the table above.

Table 3. Discriminant Validity

Variable	Work Satisfaction	Shipping Safety	Reward	Job Stress
Work Satisfaction	0.734			
Shipping Safety	0.487	0.802		
Reward	0.628	0.470	0.732	
Job Stress	0.459	0.404	0.475	0.803

Fornell-Larcker criterion testing reveals that maximum correlation with other constructs is less significant than the square root of the AVE with latent variable correlation.

Table 4. Discriminant Validity

Variable	Cronbach's Alpha	Composite Reliability	Criteria
Work Satisfaction	0.893	0.913	Reliable
Shipping Safety	0.724	0.844	Reliable
Reward	0.827	0.874	Reliable
Job Stress	0.725	0.845	Reliable

All variables satisfy the criteria for collecting research data, as shown in Table 4, as their total Cronbach Alpha and Composite Reliability values are greater than 0.6 or 0.7, respectively. This indicates that the data is reliable and has internal consistency.

Structural Model Evaluation (Inner Model)

Table 5. Coefficient of Determination (R-Square)

Variable	R Square
Work Satisfaction	0.428
Shipping Safety	0.304

Table 5 displays the results, which show that the work satisfaction variable has a weak R-Square value of 0.428, or 42.8%. Work stress and reward account for 42.8% of the variance in job satisfaction, according to the data, while other variables account for 57.2%. Next, we have the shipping safety variable, which falls into the weak category with an R-Square value of 0.304, or 30.4%. According to the data in the table, other variables account for 69.6% of the variation in work happiness, whereas job satisfaction, job stress, and job rewards each account for 30.4%.

Table 6. Effect Size (F-Square)

Variable	Work Satisfaction	Shipping Safety
Work Satisfaction	-	0.060
Shipping Safety	-	-
Reward	0.380	0.038
Job Stress	0.058	0.033

The following computation results demonstrate that the F-Square value for the incentive variable is 0.380 and for the work stress variable, it is 0.058. According to the data in the table, job satisfaction is strongly impacted by the reward variable and moderately by the work stress variable. Next, for the shipping safety variable, we have an F-Square value of 0.038 for the incentive

variable, 0.033 for the work stress variable, and 0.033 for the job satisfaction variable. Shipping safety is moderately affected by the following variables: reward, work stress, and job satisfaction, as shown in the table.

Table 7. Predictive Relevance (Q-Square)

Variable	SSO	SSE	Q ² (=1-SSE/SSO)
Work Satisfaction	2.106.000	1.650.893	0.216
Shipping Safety	702.000	571.443	0.186
Reward	1.404.000	1.404.000	
Job Stress	702.000	702.000	

The model has moderate predictive significance, as shown in Table 7, because the job satisfaction variable has a Q-Square value of 0.216, or 21.6%. Work stress and reward account for 21.6% of the variance in job satisfaction, according to the table, while other variables account for 78.4%. Next, the shipping safety variable has a Q-Square value of 0.186, which is 18.6%, indicating that the model has modest predictive relevance. Table data demonstrates that other variables account for 81.4% of the variance in job satisfaction, with work stress, reward, and satisfaction accounting for 18.6%.

Table 8. Path Coefficient

Path	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
Work Satisfaction -> Shipping Safety	0.269	0.269	0.101	2.661	0.008
Reward -> Work Satisfaction	0.530	0.523	0.063	8.445	0.000
Reward -> Shipping Safety	0.217	0.217	0.084	2.574	0.010
Job Stress -> Work Satisfaction	0.208	0.208	0.061	3.415	0.001
Job Stress -> Shipping Safety	0.177	0.177	0.074	2.402	0.017

In light of the information provided by the table, the following can be said about the correlation between the research variables:

1. The effect of work stress on shipping safety is significant, with a p-value of $0.017 < 0.05$.
2. The effect of work stress on job satisfaction is significant, with a p-value of $0.001 < 0.05$.
3. The effect of rewards on shipping safety is significant, with a p-value of $0.010 < 0.05$.
4. The effect of rewards on job satisfaction is significant, with a p-value of $0.000 < 0.05$.
5. The effect of job satisfaction on shipping safety is significant, with a p-value of $0.008 < 0.05$.

Table 9. Indirect Effect

Path	Original Sample	Sample Mean	Standard Deviation	T Statistics (O/STDEV)	P Values
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	(O)	(M)	(STDEV)		
Reward -> Work Satisfaction -> Shipping Safety	0.143	0.141	0.056	2.528	0.012
Job Stress -> Work Satisfaction -> Shipping Safety	0.056	0.055	0.026	2.161	0.031

Here is an explanation for the association between the research variables based on the data in the table above:

1. The effect of work stress on shipping safety through job satisfaction as a connecting variable is significant, with a p-value of $0.031 < 0.05$.
2. The effect of rewards on shipping safety through job satisfaction as a connecting variable is significant, with a p-value of $0.001 < 0.05$.

DISCUSSION

The Influence of Job Stress on Shipping Safety

The results of hypothesis testing state that work stress significantly influences shipping safety. In this case, the first hypothesis is accepted by the t-statistic value of $2.402 > 1.96$ and the p-value of 0.017 . The results of this research are in line with research conducted by Purnaningratri et al. (2022), where the results state that work stress affects shipping safety. According to Hasibuan and Susilawati (2023), "Stress factors such as time pressure, excessive responsibility, and a risky work environment can disrupt workers' concentration and motivation." work stress can increase the risk of work accidents because workers may need to pay attention to warnings or dangers around them.

The Influence of Job Stress on Job Satisfaction

The results of hypothesis testing state that work stress significantly influences job satisfaction. In this case, the second hypothesis is accepted by the t-statistic value of $3.415 > 1.96$ and the p-value of 0.001 . The results of this research align with research conducted by Yasa & Dewi (2019), where the study's results stated that work stress significantly affects job satisfaction. The research conducted by Fardah and Ayuningtyas (2020) also stated that work stress significantly affects employee satisfaction. Stress can cause decreased work performance due to impaired focus, fatigue, or anxiety. When the level of work stress increases, it can cause a decrease in the level of job satisfaction and vice versa (Sanjaya, 2021). *Job stress* is a serious problem related to job satisfaction (Bara, 2023). Employees who experience stress can impact satisfaction in doing work at work.

The Influence of Rewards on Shipping Safety

The results of hypothesis testing state that rewards significantly influence shipping safety. In this case, the third hypothesis is accepted by the t-statistic value of $2.574 > 1.96$ and the p-value of 0.010 . This research's results align with those of Fauzi et al. (2019), who stated, "Rewards have a positive and significant effect on workers' K3 discipline". Giving awards can motivate

employees to work better and increase compliance with occupational safety and health (Sari, 2020). Crews who feel valued and incentivized to pay attention to safety will be more likely to participate in identifying and mitigating potential risks actively. Adequate rewards can help reduce the negative impact of work stress on shipping safety (An et al., 2020). Providing rewards can incentivize ship crew to comply with shipping safety procedures. When crew members feel appreciated and recognized for their compliance with safety rules, they are more likely to comply better with safety procedures.

The Influence of Rewards on Job Satisfaction

The results of hypothesis testing state that rewards significantly influence job satisfaction. In this case, the fourth hypothesis is accepted by the t-statistic value of $8.445 > 1.96$ and the p-value of 0.000. The results of this research align with research conducted by Fitri and Setyaningrum (2024), whose research results show that rewards significantly affect employee job satisfaction. According to Aini and Frianto (2020, "The higher the level of bonuses and benefits received from the company, the higher the job satisfaction will be." Rewards provide recognition for employee contributions and efforts. Employees who feel appreciated and recognized tend to feel more satisfied with their work.

The Influence of Job Satisfaction on Shipping Safety

The results of hypothesis testing state that job satisfaction significantly influences shipping safety, so in this case, the fifth hypothesis is accepted by the t-statistic value of $2.661 > 1.96$ and the p-value of 0.008. This result is in line with what Andora and Ermita (2019) said: Workers who feel satisfied with their work tend to do their work better, including in terms of safety. Crews who are satisfied with their work tend to be more motivated to comply with established safety procedures. They feel their work is valued and positively impacted, so they are likelier to pay attention to safety rules and maintain a safe work environment.

Indirect Effect of Job Stress on Shipping Safety with Job Satisfaction as a Linking Variable

The results of hypothesis testing state that work stress indirectly affects shipping safety with job satisfaction as a connecting variable, so in this case, the sixth hypothesis is accepted by a t-statistic value of $2.161 > 1.96$ and a p-value of 0.031. The results of this research are in line with research conducted by Yasa & Dewi (2019), whose research results show that work stress has a significant effect on job satisfaction, while workers who feel satisfied with their work tend to do their work better, including in terms of safety (Andora & Ermita, 2019). High levels of work stress can disrupt the concentration, decision-making, and general performance of the crew on board. High levels of work stress can increase the risk of accidents and incidents at sea.

Indirect Effect of Rewards on Shipping Safety with Job Satisfaction as a Linking Variable

The hypothesis testing results state that rewards indirectly affect shipping safety with job satisfaction as a connecting variable, so in this case, the seventh hypothesis is accepted by a t-statistic value of $2.528 > 1.96$ and a p-value of 0.012. The results of this research are in line with research conducted by Sari (2020), where giving awards can motivate an employee to work better and increase compliance with occupational safety and health. Rewards commensurate with contribution and good performance can increase job satisfaction and strengthen motivation to do work safely and efficiently. Workers who feel valued and satisfied with their working conditions are more likely to comply with established safety rules and procedures.

CONCLUSIONS AND RECOMMENDATIONS

Based on the results of the analysis carried out previously, work stress, rewards and job satisfaction have a significant effect on shipping safety. Job stress and rewards have a significant effect on job satisfaction. Job stress and rewards have an indirect effect on shipping safety, with job satisfaction as a connecting variable. Sailors, primarily alums of the Makassar Maritime Science Polytechnic class XXXVIII, are recommended to increase their knowledge of essential factors regarding shipping safety. Adequate knowledge of international maritime regulations and conventions, such as STCW and the ISM Code, is essential for seafarers to ensure safe maritime operations. For sailors, primarily alums of the Makassar Maritime Science Polytechnic class XXXVII, who experience behavioral symptoms at work, such as changes in habits since working in shipping, it is recommended that their lifestyles be better regulated.

ADVANCED RESEARCH

Data collection sometimes necessitates that respondents reveal their true opinions in questionnaires. This is due to the fact that, among other things, such as the respondents' level of candour when answering the questionnaire, every responder brings their own unique set of experiences, perspectives, and knowledge to the table. To get better findings, we hope that researchers in the future can apply other approaches.

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