TECHNIUM
SOCIAL SCIENCES JOURNAL

Vol. 12, 2020

A new decade for social changes

www.techniumscience.com

ISSN 2668-7798

Technium Social Sciences Journal
Vol. 12, 137-149, October 2020
ISSN: 2668-7798
www.techniumscience.com

Psychological well being, Stress at Work and Safety Behaviour at Sea of Seafarer on Shipping Company

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Abstract. In the shipping industry, safety is the main concern for the management of the shipping industry organization. Several studies have shown that one of the causes of ship accident at sea is caused by human error, in this case unsafe behaviour carried out by seafarer. Research studies have shown that one of the factor of accident at sea is caused by human error, which means unsafe behaviour carried out by seafarer. The work environtmental at the sea that are full of risk, and vulnerable to work stress, can cause unsafe behaviour. Related to it, seafearer who have good psychological well being, and can manage the stress of work experienced well, can improve safety behaviour. This study aims to determine the effect of psychological well being, work stress on safety behaviour at sea on seafarers of shipping companies in Indonesia. This research uses a quantitative approach. Data collection was carried out through a survey of 107 seafarers of PT. Pelni Surabaya. Sampling techniques uses incidental sampling. Analysis of research data was conducted using multiple linear regression analysis. The result showed that there was an influence between psychological well being, work stress on safety behaviour partially or simultaneously. Safety behaviour at sea can be seen from safety participation and safety compliance, where it can be improved if psychological well being is good and work stress experienced by seafarers can be a motivator to carry out safety behaviour. The result of this study also indicate that researchers advice to shipping companies is to create effective programs to improve psychological well being of seafarers and releave work stress to improve safety behaviour at sea.

Keywords. Psychological, Work and Safety Behaviour, Seafare

1. Introduction

The marine transportation industry has evolved as an international trade route. The ship is the only alternative to shipping an enormous amount of goods on world trade. Thus, the shipping trade to date contributes about 90% of global trade which serves as a major contributor in global economic development[1]. Although maritime transport plays a key role in the economic and political development of many countries, there are still negative impacts of marine transportation activities for marine ecosystem sustainability, human health and growth economic. One of these negative impacts is one of which is caused by an accident in the sea. The occurrence of oil spills due to accidents or disposal of residual fuel oil in the ocean makes the ecosystem damage in the sea. The International Maritime Organization (IMO) makes regulations governing safety in sea transportation in order to effectively manage maritime safety, safety, vessel efficiency and marine protection, both in terms of the ocean itself or shipping operation activities[2].

Technium Social Sciences Journal
Vol. 12, 137-149, October 2020
ISSN: 2668-7798
www.techniumscience.com

Shipping is an industry with a higher risk than on land. Characteristics of harsh physical environments that interact directly during the work process, remoteness of the working environment that makes the lack of social contact and social alienation especially during the period of duty and the nature of hierarchy traditional of the ship team that combines the civil type structure with the norms of semi military, makes its own uniqueness. Accordingly, each member state of the International Maritime Organization (IMO) is expected to implement the ISM Code (International Safety Management Code) regulation in fulfilling the vessel operation safety standards and pollution prevention and the rules of SOLAS1974 (Safety of Life at Sea) to ensure the safety of transportation in the sea. Safety at sea includes safety of navigation, technological and operational of ships, and the safety of the people in it, in the situation of emergence, and protection against marine pollution. Safe transportation cruise occurs when the lack of accidents, or risks that harm the company as well as individuals such as injuries, death, so that the shipping process runs effectively[3,4].

Accidents in Indonesia's voyage is still common, although there are regulations from the Government that govern the importance of implementing safety management systems on all Indonesian shipping companies. Based on data from Komite Nasional Keselamatan Transportasi (KNKT) indicates that the occurrence of a cruise accident has increased fluctuations and declines annually around 2-10%, so there needs to be particular attention of each shipping company to prevent accidents[5]. These types of accidents include: fire, impact, drowning and drown. In 2019, the most number of accidents were drowning (46%), the total (22%), the collision (18%) (e.maritim.com, 2019)[6]. Based on the outcome of the accident, it can be known that the cause of the accident is human error, such as the occurrence of excess freight, less standard ship conditions, lack of crew adherence to operational procedure system that does not conduct a thorough examination of the ship's condition, the handling of the condition of slow emergence, etc.[5].

Human error ship accidents pose a high risk with the occurrence of casualties, pollution, and a large level of loss. Although over the years of improvements in technology, ship design and navigational aids can reduce the risk of ship accidents, but the potential risk of human error 90% is a major cause in ship accidents[7]. In relation to the standard of occupational safety in the sea or the criteria of the vessel carrier seafarer personnel, indicating that the main factor that is influential in the accident is due to human behaviour that is less precise in acting on board (80%) than other[8]. Results from some studies have also shown that nearly 70 to 80% of accidents in the sea are caused by humans. Some accidents occurred due to violations of the rules, errors in the operation of the work, or irregularities of behaviour [9]. Also, about 75% to 96% of the accidents occurring in the sea are caused by human error[10]. According to the Domino Theory[11], there were five consecutive factors that caused an accident. The five factors are: 1) social environment. Negative characters can enlarge the likelihood that someone behaves unsecured. One's own character is a result of social environment and heredity/ancestry, 2) human error. Negative characters both derived as well as environmental influences, are the reasons why a person behaves unsafe and why unsafe conditions can be created, 3) unsafe actions or unsafe conditions. Unsafe actions are done by humans and pose mechanical or physical hazards that are the direct cause of accidents, 4) accidents. In general, accidents resulting in injuries caused by falling or dropping by moving objects, 5) injuries. Including in injuries, among others, falling, moving objects, being cut off, burning, getting hit, trapped in confined spaces, buried, and drowned. The weakness in human safety behaviour is the potential cause of accidents in the sea. One of the efforts to be considered in preventing work accidents, is to pay attention to safety behaviour by employees is a key aspect to be considered in preventing work accidents[12]. Safety behaviour is an implication

of the management policy that is shown to be adequate knowledge of employees to their work, control management function of good work, rapid response to emergency, and positive employees' personality that supports safety behaviour. In addition, safety behaviour can reduce the accident cost so that the image and good name of the company can be maintained[11].

Personal factors that affect the safety behaviour, namely mental and physical status. This mental and physical status can be said to be a psychic and psychological condition that supports related working conditions inherent in the characteristics of a person's work[11]. Characteristics of the seafaring's work at high risk, stress prone, or pressure that can affect the seafarer mental and psychological conditions[13]. Such depressing psychological conditions include: authoritative leadership, severe mental and physical workloads, long working hours, lack of exercise and a less healthy diet[14], separation from the family, loneliness on the ship, fatigue, sleep deprivation, multinationalism, limited recreational opportunities[15]. According to the condition of the work that is full of pressure, it is necessary for individual qualifications that have positive psychological mental resistance. So that the seafarer can work optimally through safety behaviour to prevent accident. Individuals who can function fully (full functional), called psychological well being. Psychological well-being as a condition when individuals can function optimally and can receive a positive and negative sense of self, having a positive relationship with others, can control its own behaviour, able to control the environment, have a life purpose, and have a desire to continue to develop self-potential[16]. The concept of psychological well being is a construct that is strongly influenced by the environment, so that the development of instrument measurement should pay attention to the context of culture and development of individuals[17]. Psychological well-being is not only a life satisfaction and a balance between positive effects and negative effects but also involves a perception of involvement with challenges throughout life. Thus, psychological well being is included in a person's personality aspect[16]. Personality is one factor that can affect the safety behaviour[18]. Research results of shows that individuals experiencing low psychological distress in this regard are able to respond positively to the conditions occurring in him, prone to low psychological distress[19]. Conversely, a person who has a low psychological well being, tends to experience high psychological distress. Well being is one positive approach to be able to support safety behaviour. The concept of well being in the context of safety, defined as a well-being organizational model consisting of economic well being, human well being, and environmental well being. Thus, the concept of safety is the sustainability of the three elements of well being organization, which includes economic well being, human well being and environmental well being. The explanation of human well being can be interpreted as the psychological condition of a person experiencing happiness as found in the theory of hedonism[20]. Research also showed that high mental resilience of employees to the stress contained in the work is attributed to psychological well being, conversely low mental endurance, where demonstrated with a high level of stress, attributed to the low psychological well being[21]. Kerr also states that the low psychological well being in the working environment leads to stress and decreased safety behaviour[21]. Thus, the organizational condition and the psychological condition of a person, in this case psychological well being can cause occupational risk, including occupational accidents[22]. The results of the study showed that there was a positive link between psychological well-being and safety behaviour in Indonesian pilots, indicating that high psychological condition or mental endurance in the conditions of pressure high work on the characteristics of aviation industry needed to improve the safety behaviour of pilots[21].

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Vol. 12, 137-149, October 2020
ISSN: 2668-7798
www.techniumscience.com

All aspects of the potentially stressful marine work that the respondent experienced, about 24% of the samples, were often experienced while a small portion of seafarers reported constant stress. Stress levels range from high (at 40% sample) to low (at 11% samples). Later, the majority of seafarers reported experiencing stress with occasional or frequent frequencies (~ 85%) and moderate to high stress levels (~ 60%). This suggests that working at sea, regardless of his job, has a strong relationship to stress[23]. Seafaring is a work of mental stress with psychosocial factors underlying it, so that the working conditions considered as stressors and psychological effects of stress interacted and mutually influential in a variety of ways. Thus the relationship occurs between the variables as follows: The relationship between work environment and environmental perception of work by seafarer, stress and behavioural changes, as well as physiological functions and health conditions of seafarer[24].

Based on some scientific references, stress is usually understood by a person through three ways, i.e. 1) as an external stimulus received by an individual, 2) stress as an individual's psychological and physical response to external forces or called model response, and 3) stress as a stimulus and response interaction, i.e. an interaction or cognitive model[13]. The term used in research related to this stress is to use the stressor to identify external stimuli or events, and tension or pressure to identify individual responses or reactions. Thus, the term stress includes a common interaction process that includes stressors, overcoming stressors and stress effects. The essence of the discussion about stress is the personal assessment of the situation that occurred as a valuation of the level of risk experienced against the stressor[13].

Some aspects of stress that can affect safety behaviour are: job demands (covering work demands), symptom (covering complaints from within sick workers), noise, and shift work[25]. This is if it is associated with the safety behaviour of the seafarer, these aspects are related to all the work of the seafarers experienced by the seafarer such as: complaints from inside the sick seafarer, poor noise on working efficiency of and the division of work shifts that are too long. The stress caused by the seafarer's work is referred to as the stressor, which includes separation with family and home, life and environmental conditions in the ship, lack of wages earned, absence of opportunities for promotion or career-level advancement, monotonous ship life, minimal interpersonal relationships, policy changes in the maritime sector that demand greater responsibility in implementing safety rules[26]. Working stress models that can be described as the stressor in the voyage that includes high workloads and long working hours, the level of control that seafarer have on the job, the support received from management and colleagues, the relationship interpersonal roles in the workplace, the role of seafarers in the organization, changes in management systems, and occupational safety in relation to employment contracts)[27]. A management policy that can make the stressful condition that affects the mental health of seafarers is a global change in the shipping industry that always demands economic efficiency efforts. A reduction in the number of crew members as an effect of process automation on board, improvements in navigation techniques, reduction in the number of crew in the vessel for efficiency is expected to increase the workload which can cause potentially distress to the crew fatigue[28]. In addition to these factors, there is a phenomenon related to the uncertainty of short-term employment contracts in the commercial, or multicultural sectors, making its own burden for seafarers[14]. Harsh environmental characteristics are regarded as stressor. The condition of duty for a long period, isolated from the social environment, long working hours with high workload and number of crew members are limited, lack of holiday time, fatigue, high occupational stress, accidents and marine disasters, risk of exposure to harmful substances, or the dangers of piracy, is a risk factor of work. In addition, such unique environmental factors, ship movements, noise, and

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ISSN: 2668-7798
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vibration that can affect the performance of the working safety, are the stressor factors that come from the environment[26].

Environmental factors regarded as a stress trigger consist of vessel movements, noise and vibration perceived as pressure, especially during bedtime[14]. Stressor caused by the work that has been described above as psychological stress. A person working in a depressed condition can lower the quality of life of a seafarer, psychological wellbeing and negatively affect physical health condition[15]. Stress caused by a work that develops into a condition of burnout, may affect safety behaviour[29]. The occupational pressure conditions inherent in the characteristics of the work as these seafarers are the environmental factors that affect the aspect of safety behaviour[11]. In addition to technical training, psychological skills are needed for seafarers as a precautionary measure to stress with the aim of developing interpersonal competencies, relating to ability to resolve personal conflicts aboard, as well as provide and receive support for managing stress[14]. The systematic approach in managing stress is called Crew Endurance Management System to control the stress on the ship[23].

The relationship between the variables mentioned above, may be summarized in the model in outlined in figure 1. The seafarers who has a good psychological well being and a low level of stress at work, may enhance safety behaviour.

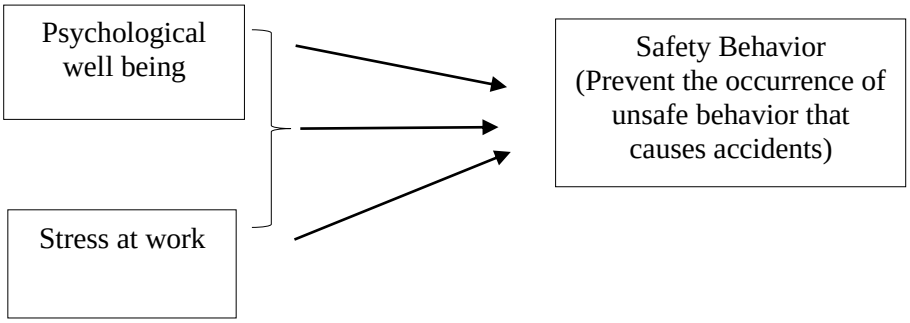

Figure 1: The hypothesized variables effect on safety behaviour

2. Methods

2.1. Participant

This research was conducted in PT. Pelni Surabaya with research subjects as many as 107 seafarers consisting of organic seafarers and pioneer seafarers. The research samples used are incidental sampling, i.e. the technique of sampling by chance, i.e. anyone who coincidentally met with the researcher can be used as a sample, if it is seen by the person who happened to be found suitable as a data source[30]. Respondents demographic data can be seen in the following table 1:

Table 1. Demographic data for respondents

Category	Item	Frequency	Percentage
Gender	Male	102	95 %
	Female	5	5 %
Age	25-35	25	24 %
	36-45	66	61 %
	>46	16	15 %
Experience	5-9	29	27 %
	10-14	26	24 %
	15-19	22	21 %

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ISSN: 2668-7798
www.techniumscience.com

	20-24	18	17 %
	>24	12	11 %
Departement	Departemen Deck	47	43%
	Departemen Mesin	40	37%
	Departement Catering	20	20%

Thus the conclusion of the subject of research was reviewed from a demographic aspect dominated by ages ranging from 36-45 years (61%), male gender (95%), working for 5 – 9 years (27%), and deck department (43%). Based on the research sample already representative represents the seafarer population of PT. Pelni Surabaya.

2.2. Measures

The data collection techniques used in this study use the instrument in the form of a questionnaire. Research questionnaires are organized by favourable and unfavourable. Favourable is a statement – a statement that, when approved, demonstrates a positive attitude or likes an object that targets attention. Unfavourable is a statement – the statements that when approved indicate a negative attitude or dislike an object that is subject to attention. The measuring instruments used in this study consist of three scales that include: psychological well-being scale, stress at work scale and scale of safety behaviour. The instrument design, is 5 point Likert Scale format which ranges from to 1 to 5 (1 = completely disagree; 2 = somewhat disagree; 3 = neither agree nor disagree, 4 = somewhat agree, 5 = completely agree).

The Psychological well being scale, developed based on Ryff's [16] which covers aspects of self-acceptance, positive relationships, autonomy, environmental mastery, personal growth, and purpose in life. The reliability test results using Cronbach's Alpha against 58 item showed a value of 0.935, so the items on this scale is reliable.

The stress at work scale, is the development of the Igor's [31] which includes: resisting change; reduced productivity and efficiency; loss of motivation, memory, and control; lack of sleep, loss of appetite and decreased sex appetite; and disliked the place of work and the people who worked together. The reliability test results using Cronbach's Alpha against 35 item showed a value of 0.925, so the items on this scale is reliable.

The scale of safety behaviour, is the development of the Borman & Motowidlo's[32] which includes safety compliance and safety participation. The reliability test results using Cronbach's Alpha against 38 item showed a value of 0.964, so the items on this scale is reliable.

Data analysis in this study used multiple linear regression to test the influence between psychological well being, stress at work and safety behaviour simultaneously and partially. Data processing by using SPSS 23 program.

3. Result

The results by using multiple analytical techniques to test whether there is any influence between psychological well being, occupational stress and safety behavior and the magnitude of contributing influence between psychological well being, stress at work and safety behavior can be seen in table 1 and the following table 2:

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Table 2. The Influence between psychological well being, stress at work and safety behaviour simultaneously

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7493.449	2	3746.724	9.780	.000[b]
	Residual	39840.794	104	383.085		
	Total	47334.243	106			

a. Dependent variable: Safety Behaviour
b. Predictors: (Constant), Stress at work, PWB

Based on the table 2 above, the value F (9.780), with the value of significance (0.000) < 0.05. Thus, it shows that there is a positive and significant influence simultaneously between Psychological well being, and stress at work of safety Behaviour.

Table 3. Model Summary Psychological Well Being, Stress at Work on Safety Behaviour

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.398[a]	.158	.142	19.573

a. Predictors: (Constant), Stres at work, PWB

According to the table 3, it can be noted that R square = 0.158. This means the contribution of Psychological well-being and stress at work to safety behaviour of 15.8%%, while the other 84.2%% is influenced by other factors that are not examined in this study.

The result of the psychological well-being variable hypothesis test and stress at work against safety behaviour can be partially seen in table 4.

Table 4. The influence of Psychological well being and stress at work on safety Behaviour Partially

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	212.983	26.537		8.026	.000
	PWB	.299	.153	.182	1.951	.054
	Stres at work	-.261	.079	-.309	-3.306	.001

a. Dependent variable: Safety Behaviour

According to table 4, it is known that the test results on each of the variables can be explained as follows: T test result on the variable psychological well being (1.951) with a status of significance (0.054). When compared to t table shows that t (1.951) and t table (1.6596), where t > t table (1.951 > 1.6596) with a significance level (0.054 < 0.05). t test results on variable work stress (-3.306) with a significance level (0.01). When compared to t table shows that t (3.306) and t table (1.983), where t > t table (3.306 > 1.983). These results

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ISSN: 2668-7798
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indicate there is a significant and negative influence between working stress on safety behaviour. The description of the result of Psychological well-being, stress at work and safety behaviour on PT. Pelni Surabaya can be seen in table 5.

Table 5. The description of psychological well being, stress at work and safety behaviour

Factors	Range	N	%
Psychological well being			
High	> 148	30	28,03%
Moderate	135 – 148	59	55,14%
Low	< 135	18	16,83%
Stress at work			
High	> 144	49	45,80%
Moderate	119 – 144	26	24,30%
Low	< 119	32	29,9%
Safety behaviour			
High	> 231	26	24,2 %
Moderate	210 – 231	55	51,4%
Low	< 210	26	24,4 %

According to table 5, it may be noted that psychological well being of the majority seafarers are in the average category (55.14%), while the stress at work majority is in the high category (45.80%), and the majority safety behaviour is in the category moderate (51.4%).

The descriptions of the aspects of each variable are explained as follows: safety behaviour variables consist of safety compliance (66%), and safety participation (34%). In the variable psychological well being consists of self acceptance (12%), positive relationships (17%), autonomy (14%), environmental mastery (20%), personal growth (20%), and purpose in life (17%). Stress at work variables consist of resisting changes (14%), reduced productivity and efficiency (26%), loss of motivation (26%), lack of sleep (18%), dislike of place of work and people working together (16%).

4. Discussion

The results of this study test the theory of factors affecting the behaviour of the marine safety on the seafarer PT. Pelni Surabaya in order to improve the safety and safety of marine transportation in the shipping operation activity[2,3,4]. Human behaviour is considered the main factor that causes accidents as human error[7,8,10]. Human error is said to be the cause of unsafe behaviour[7,10,11,33]. Thereby efforts to increase safety behaviour carried out by shipping companies through factors affecting the behaviour of safety behaviour is always improved as a material evaluation of the effectiveness of safety management. This is because safety behaviour is expected to reduce the accident cost that causes the company to lose[11]. In addition, safety behaviour is also an implication of management policy, so it needs to be evaluated. The first factor tested in this study relating to safety behaviour is the personality or personal characteristic[11,18]. A personality factor that is an emphasis on the study of safety behaviour is how individuals face pressure affecting their mental and physical status. A person's perception of the pressure of the work faced makes a person can behave positively in an effort to prevent accidents. Individual qualifications that have a positive psychological

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ISSN: 2668-7798
www.techniumscience.com

mental endurance in view of the work as a seafarer where there are pressures of work, such as family separation, loneliness, alienation, fatigue, sleep deprivation, mental workload and physical, poor interpersonal communication because multinational crew factors are needed to support safety behaviour at sea[13,14,15,27]. Psychological mental condition like this is called psychological well being. Psychological well-being is a condition when individuals can function optimally and can receive a positive and negative sense of self, having a positive relationship with others, can control his own behaviour, able to control the environment, have a purpose of life, and have a desire to continue to develop self-potential. The limitation of such definitions is the extent to which individuals have a purpose in his life, whether the individual realizes the potential possessed, the quality of the relationship with others, and the extent to which the individual feels accountable with his life[16]. The concept of psychological well-being is a construct that is strongly influenced by the environment, so that the development of instrument measurement must pay attention to the context of culture and individual development[17]. With regards to psychological well being on the seafarer profession, it has been extensively researched on previous research. This is because the life risk of a hard seafarer with a variety of mental, physical and psychological pressures as the profession consequence makes the profession of the vulnerable seafarer's stress. A seafarer who manages to control its stressing and able to work well (safety behaviour), it will decrease the risk level due to unsafe behaviour and instead[15,16,22]. High mental resilience of employees to the stress that is present in the work, attributed to psychological well being required on work that demands resilience under high working pressure conditions, such as pilots[21] or seafarer[15].

The second factor tested on this study to be seen its influence on safety behaviour is the environmental factor[11,18]. Environmental factors are a stressor that interacts with humans to determine the response of a person in the face of the environment[13]. Stress at work is defined as a response or internal and external process that reaches the level of physical and psychological tension to the limit or exceed the subject's ability limit. In other words, stress is a personal judgment of the situation that occurs as an assessment of the level of risk experienced against the stressor[13]. The profession of the seafarer in the shipping industry is in an environment full of mental, physical, and psychological pressures[24]. Aspects of stress that affect safety behaviour include demands job, mine consisting of complaints in sick workers, noise, and long working shifts[25]. Separation factor with family and home, life and environmental conditions on board[26]. In addition, high workloads and long working hours, the level of control that seafarers have on work, the support received from management and colleagues, interpersonal relationships in the workplace, role of seafarers in the organization, changes in system Management, and occupational safety relating to employment contracts[27]. Such unique environmental factors, ship movements, noise, and vibration that can affect the review performance of safety in the work, are the stressor factors originating from the environment[26]. Environmental pressure conditions related to the management policy that influence the seafarers is a reduction in the number of crew members as an effect of the process automation on board, improvements in navigation techniques, reduction in the number of crew in the vessel for efficiency, it is expected to increase the workload that can cause potentially distress to crew fatigue[28]. In addition, the uncertainty of short-term employment contracts of seafarers in the commercial, or multicultural sectors, makes its own burden on seafarers[14]. The next aspect is the lack of wages gained, the absence of opportunities for promotion or level improvement of career, life on a monotonous ship, minimal interpersonal relationships, change in policy in the maritime sector that demands responsibility in implementing safety rules[26]. Stressor caused by the work that has been

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described above as psychological stress. A person working in a depressed condition can lower the quality of life of a seafarer, psychological wellbeing and negatively affect physical health condition[15]. Stress caused by a work that develops into a condition of burnout, may affect safety behaviour[29]. The results of this research proved that the simultaneous and partial safety behaviour indicated by the safety compliance and safety participations influence on psychological well-being and stress at work. Safety compliance that is the behaviour of employees in implementing safety rules in daily work. Safety participation which is the behaviour of employees in realizing safety in a working environment that includes participation in assisting colleagues, promoting workplace safety programs, initiatives in demonstrating the conduct of safety. Safety behaviour seek to improve safety and safety in the workplace[32], to be seen its influence on psychological well being measured by self-acceptance, positive relationships, autonomy, environmental mastery, personal growth, and purpose in life[16]; and stress at work include rejecting changes; reduced productivity and efficiency; loss of motivation, memory, and control; lack of sleep, loss of appetite and decreased sex appetite; and disliked the place of work and the people who worked together[31]. The results of this study also showed that the condition of the seafarer with a moderately good psychological well being and high working stress level, only affects about 15.8% of the safety behaviour. Other 84.2% are influenced by other factors not examined in this study.

Based on the analysis of variables description in respondents, indicating that the level of safety behaviour of the seafarer in PT. Pelni Surabaya is in medium category. This indicates that the have been able to apply safety compliance and safety participation. The seafarers are able to realize the safety of the working environment which includes participation in assisting associates promoting workplace safety programs, initiatives to demonstrate safety behaviour, and to strive to improve workplace safety and safety. Reviewed from both aspects of safety behaviour, more dominated by the safety compliance aspect. This shows that the working focus of seafarers is still on the implementation of personal performance in accordance with the prevailing rules and procedures, and still not fully participate in realizing the working environment of the overall safety.

In the second test factor that affects the safety behaviour, shows that the level of psychological well being seafarer in PT. Pelni Surabaya is in medium category. This indicates that the seafarer PT. Pelni has been able to internalize his work and all the consequences that exist in it. The seafarer is able to accept positive and negative sense of self, have a positive relationship with others, can control its own behaviour, able to control the environment, have a purpose of life, and have a desire to continue to develop the self-potential demonstrated by self-acceptance behaviour, positive relationships, autonomy, environmental mastery, personal growth, and purpose in life[16] can improve safety behaviour[32]. Thus there is a positive influence between psychological well-being and safety behaviour, where the more positive psychological well being then the better the safety behaviour and vice versa.

In the third test factor showed that the stress at work on the Seafarer PT. Pelni Surabaya is in high category. This indicates that the environmental aspects that are considered stressor in the work, have interacted physically, mentally and psychologically on the seafarer, thereby affecting the response to the work. The seafarer's conception of the work environment reaches the level of physical and psychological tension that is thought to be at the limit of tolerance or even exceeding its ability to deal with it, so its behaviour demonstrates the level of stress high. This is in accordance with the opinion stating that work stress can be interpreted as a source or stressor work that causes individual reactions in the form of physiological, psychological and behavioural reactions that have been to the limit or even exceed its ability

limit[34]. The symptoms of stress at work that implicates safety behaviour is resisting change; reduced productivity and efficiency; loss of motivation, memory, and control; lack of sleep, loss of appetite and decreased sex appetite; and disliked the place of work and the people who worked together[31]. Although the level of stress experienced by seafarers is in high category, it still affects quite positively on safety behaviour. This suggests that seafarers can still tolerate stressors that result in physical, mental and psychological aspects, so as to maintain safety behaviour in preventing accidents. Thus there is a negative influence between stress at work and safety behaviour, where the higher stress at work then the worse the safety behaviour and vice versa. The better the seafarer in controlling the stressal, it can lower the risk of unsafe behaviour[15].

5. Conclusion

The results of this study showed that psychological well being and work stress only acted around 15.8% in improving safety behaviours. This shows that there needs to be a study of other factors that influence the safety behaviour such as safety climate to get a picture of a seafarer on safety management that has been managed by the company in relation to safety behaviour. It is also necessary to research the competency factor relates to safety behaviour or fatigue[35] to get a more specific picture of the environmental effect of the work on safety behaviour. This refers to the safety behaviour component of the seafarer in PT. Pelni is still limited to the performance of individual tasks in preventing accidents, such as using personal protective equipment and carrying out work in accordance with the prevailing rules. In addition, with regard to the high level of stress on potential seafarers for unsafe behaviour, at least the company needs to conduct training to improve the ability of in coping with stress in alleviates their stressful behaviour. It can be through psychoeducation approaches in order to internalize the stressor in its work and implement an effective coping with strategy.

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Vol. 12, 137-149, October 2020
ISSN: 2668-7798
www.techniumscience.com

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