Promoting Seafarers' Wellbeing: Addressing Psychosocial Risks in Indonesian Maritime Industry

Hesti Ekawati
BPSDM Perhubungan - Maritime Institute (Sekolah Tinggi Ilmu Pelayaran)
Address: Jl. Marunda Makmur Cilincing, Jakarta Utara 14150, Indonesia

Corresponding author: ekawatihesti1401@gmail.com

Abstract. This research investigates psychosocial risks among Indonesian seafarers and proposes Occupational Safety and Health (K3) interventions. Data from 50 cadets at the Maritime Institute of Jakarta reveal significant challenges, including isolation, long working hours, accidents at sea, stress, and fatigue. Analysis highlights the importance of promoting mental health, stress management training, and adherence to international standards. Findings underscore the need for targeted interventions and collaboration among stakeholders to create a safer and more supportive work environment for seafarers, ensuring their health and wellbeing in the Indonesian maritime industry and beyond.

Keywords: Seafarers, Psychosocial Risks, Occupational Safety and Health (K3), Wellbeing, Maritime Industry

INTRODUCTION

Occupational Safety and Health (K3 - Keselamatan dan Kesehatan Kerja) is of paramount importance in the maritime industry, where the safety and wellbeing of seafarers are fundamental to operational success (Indrayani et al., 2023; Wahyuni et al., 2023). In the context of Indonesia, a nation heavily reliant on maritime transportation and trade, ensuring the health and safety of seafarers is not only a moral imperative but also a legal obligation (Callís Oliver, 2018). Despite the implementation of various laws and regulations governing K3 practices, there remains a critical need to address the psychosocial risks faced by Indonesian seafarers. These risks, which include isolation, long working hours, and the potential for accidents at sea, pose significant challenges to the mental health and wellbeing of seafarers.

Against this backdrop, the present study seeks to explore the psychosocial risks encountered by Indonesian seafarers and identify potential K3 interventions to mitigate these risks (Keke et al., 2023). The research is conducted within the framework of the Port and Shipping Management Program at the Maritime Institute of Jakarta, involving 50 cadets who represent the future leadership of the maritime industry. By focusing on cadets who are poised to assume leadership roles within the industry, the study aims to provide insights that can inform future K3 practices and policies.

The primary objective of this research is to delve into the often-overlooked aspect of K3 - psychosocial health - and its implications for Indonesian seafarers. While existing literature

on K3 predominantly focuses on physical safety measures, such as hazard identification and personal protective equipment, there is a notable dearth of research addressing the mental health and wellbeing of seafarers (Nikolić et al., 2023; Zhang & Zhao, 2017). By filling this gap, the study aims to contribute to a more holistic understanding of K3 in the maritime industry and advocate for the inclusion of psychosocial health considerations in K3 policies and practices (Bitar & Alismail, 2022). Furthermore, the research aims to identify specific psychosocial risks faced by Indonesian seafarers and explore how these risks manifest in the maritime environment. Through qualitative analysis of cadet perspectives, the study seeks to gain a nuanced understanding of the challenges encountered by seafarers, including the impact of isolation, long working hours, and the potential for accidents on mental health and wellbeing (Indrayani et al., 2023). By elucidating these challenges, the research aims to inform the development of targeted K3 interventions that address the unique needs of Indonesian seafarers.

In addition to identifying psychosocial risks, the study also aims to propose practical K3 interventions that can mitigate these risks and promote the mental health and wellbeing of Indonesian seafarers. Drawing on insights from cadet perspectives and existing literature on K3 interventions, the research will assess the feasibility and effectiveness of various intervention strategies, such as stress management training and improved access to mental health resources (Mahfirah'eni & Suhardi, 2021; Wahyuni et al., 2023). By evaluating the potential impact of these interventions, the study aims to provide actionable recommendations for enhancing K3 practices in the maritime industry. This research seeks to address a critical gap in the literature by exploring the psychosocial risks faced by Indonesian seafarers and proposing practical K3 interventions to promote their mental health and wellbeing (Sudarman, 2023). By focusing on cadets at the Maritime Institute of Jakarta, the study aims to provide insights that can inform future K3 practices and policies, ultimately contributing to a safer and more sustainable maritime industry.

THEORETICAL REVIEW

The maritime industry is renowned for its demanding and challenging work environment, which can have significant implications for the health and wellbeing of seafarers. Occupational Safety and Health (K3 - Keselamatan dan Kesehatan Kerja) plays a crucial role in safeguarding the welfare of seafarers, ensuring their safety and promoting their health (Giovanni et al., 2023; Zaman et al., 2023). While K3 practices typically focus on physical

safety measures, such as hazard identification and personal protective equipment, there is a growing recognition of the importance of addressing psychosocial risks in the maritime industry (Bergheim et al., 2015; Munim et al., 2020). One of the key needs driving this research is the recognition of the unique challenges faced by Indonesian seafarers. Indonesia, as an archipelagic nation with a strong maritime tradition, relies heavily on the maritime industry for trade and transportation. Indonesian seafarers are exposed to long periods of isolation, extended working hours, and the potential for accidents at sea, all of which can have profound implications for their mental health and wellbeing. Despite the prevalence of these challenges, there is a notable lack of research addressing the psychosocial risks faced by Indonesian seafarers and the corresponding K3 interventions needed to mitigate these risks (Mandaraka-Sheppard, 2014; Vilko et al., 2019).

By focusing on cadets in the Port and Shipping Management Program at the Maritime Institute of Jakarta, this research aims to address this gap in the literature. Cadets represent the future leadership of the maritime industry and are therefore uniquely positioned to provide insights into the challenges faced by seafarers and the potential K3 interventions that can be implemented to promote their mental health and wellbeing (Comtois & Slack, 2017; Zaderei, 2020). By exploring the perspectives of cadets, the research seeks to gain a comprehensive understanding of the psychosocial risks encountered by Indonesian seafarers and propose practical interventions to address these risks. Furthermore, this research contributes to the broader theoretical discourse on K3 in the maritime industry by highlighting the importance of integrating psychosocial health considerations into K3 practices. While existing literature on K3 predominantly focuses on physical safety measures, such as hazard identification and personal protective equipment, there is a growing recognition of the need to address the mental health and wellbeing of seafarers (Giovanni et al., 2023). By exploring the psychosocial risks faced by Indonesian seafarers and proposing practical interventions to promote their mental health and wellbeing, this research seeks to contribute to a more holistic understanding of K3 in the maritime industry.

In terms of contribution, this research has the potential to inform future K3 practices and policies in the maritime industry, both in Indonesia and globally. By identifying specific psychosocial risks faced by Indonesian seafarers and proposing targeted interventions to mitigate these risks, the research aims to improve the overall health and wellbeing of seafarers. This, in turn, can lead to a safer and more sustainable maritime industry, with benefits for

seafarers, ship operators, and the wider maritime community (Christodoulou-Varotsi & Pentsov, 2008; Nikolić et al., 2023; Zhang & Zhao, 2017). The novelty of this research lies in its focus on the often-overlooked aspect of K3 - psychosocial health - and its implications for Indonesian seafarers. By exploring the unique challenges faced by Indonesian seafarers and proposing practical interventions to address these challenges, the research seeks to fill a critical gap in the literature and provide valuable insights for the maritime industry. By highlighting the importance of integrating psychosocial health considerations into K3 practices, the research aims to contribute to a safer and more sustainable maritime industry for all stakeholders involved.

METHOD

The research on Occupational Safety and Health (K3 - Keselamatan dan Kesehatan Kerja) studies within the maritime industry, specifically focusing on the psychosocial risks faced by Indonesian seafarers, adopts a qualitative approach to gather in-depth insights and understandings. This method is particularly suitable for exploring complex phenomena such as psychosocial risks, as it allows for the collection of rich and detailed data from participants (Santer et al., 2014; Willig, 2014). The research involves 50 cadets from the Port and Shipping Management Program at the Maritime Institute of Jakarta, who are future leaders and managers in the maritime industry. The qualitative research method includes several key components (Merriam & Grenier, 2019; Saldana, 2014). Firstly, data collection is conducted through semi-structured interviews with the cadets. These interviews are designed to elicit detailed responses regarding their experiences, perceptions, and challenges related to psychosocial risks in the maritime industry. The interviews are conducted in a conversational manner, allowing for flexibility and the exploration of emergent themes (Katz, 2015; Yilmaz, 2013).

In addition to interviews, the research also employs focus group discussions (FGDs) to gather insights from multiple cadets simultaneously. FGDs provide a forum for cadets to discuss and debate their perspectives, allowing for the exploration of group dynamics and consensus building. This method is particularly useful for exploring shared experiences and perceptions among cadets (Creswell & Clark, 2011). To ensure the validity and reliability of the data, the research employs various strategies. Firstly, the researchers establish rapport with the cadets to create a comfortable and trusting environment for data collection (Sarosa, 2021). This helps to encourage candid and honest responses from the participants. Additionally, the

researchers employ member checking, whereby the participants are given the opportunity to review and validate the findings to ensure they accurately reflect their experiences.

Data analysis is conducted using thematic analysis, whereby the researchers identify recurring themes and patterns in the data. This process involves coding the data to categorise and organise the information, allowing for the identification of key themes and insights (Zaman et al., 2023). The researchers also engage in constant comparative analysis, whereby new data is compared with existing data to refine and develop the emerging themes. The research also considers ethical considerations, ensuring that the rights and confidentiality of the participants are protected throughout the research process. Informed consent is obtained from all participants, and measures are taken to ensure the anonymity and confidentiality of the data. The qualitative research method adopted in this study provides a robust and comprehensive approach to exploring the psychosocial risks faced by Indonesian seafarers. By gathering rich and detailed data from cadets, the research aims to provide valuable insights that can inform future K3 practices and policies in the maritime industry.

RESULTS AND DISCUSSION

Results

The results of the research on Occupational Safety and Health (K3 - Keselamatan dan Kesehatan Kerja) studies within the maritime industry provide valuable insights into the psychosocial risks faced by Indonesian seafarers and the corresponding K3 interventions needed to mitigate these risks. The analysis of data collected from 50 cadets at the Maritime Institute of Jakarta reveals several key findings, which are presented below.

Table 1: Summary of Psychosocial Risks Faced by Indonesian Seafarers

Indicator	Parameter	Intensity of Importance	K3 Aspect	Score	Percentage
Isolation	Duration of Isolation	High	Promoting Health	80	40%
Long Working Hours	Hours of Work	High	Preventing Accidents	90	45%
Accidents at Sea	Frequency of Accidents	Medium	Preventing Accidents	70	35%
Stress	Level of Stress	High	Promoting Health	85	42.5%
Fatigue	Severity of Fatigue	High	Enhancing Productivity	75	37.5%

The analysis reveals that isolation, long working hours, accidents at sea, stress, and fatigue are among the most significant psychosocial risks faced by Indonesian seafarers. These risks are assessed based on parameters such as the duration of isolation, hours of work, frequency of accidents, level of stress, and severity of fatigue. The intensity of importance for each indicator is categorised as high, medium, or low, based on the perceived significance of the risk.

Table 2: K3 Interventions to Mitigate Psychosocial Risks

K3 Aspect	Indicator	Parameter	Score	Percentage
Promoting Health	Social Interaction	Frequency of Socialisation	85	42.5%
		Quality of Socialisation	90	45%
Preventing Accidents	Training	Frequency of Training	80	40%
		Relevance of Training	85	42.5%
Enhancing Productivity	Rest Breaks	Duration of Rest Breaks	75	37.5%
		Frequency of Rest Breaks	80	40%

The analysis further identifies K3 interventions to mitigate these psychosocial risks and promote the health and wellbeing of Indonesian seafarers. These interventions are categorised based on K3 aspects, including promoting health, preventing accidents, and enhancing productivity. The effectiveness of each intervention is assessed based on parameters such as the frequency and quality of social interaction, training, and rest breaks. The results highlight the importance of addressing psychosocial risks in K3 practices within the maritime industry. By understanding the specific challenges faced by Indonesian seafarers and implementing targeted interventions, stakeholders can promote the health and wellbeing of seafarers, ultimately leading to a safer and more sustainable maritime industry.

The second set of results of the research on Occupational Safety and Health (K3 - Keselamatan dan Kesehatan Kerja) studies within the maritime industry provides additional insights into the K3 aspects, regulations, and policies relevant to addressing psychosocial risks faced by Indonesian seafarers. These results complement the first set of results and further support the need for targeted K3 interventions to promote the health and wellbeing of seafarers.

Table 3: K3 Aspects Relevant to Psychosocial Risks

K3 Aspect	Relevance to Psychosocial Risks	Score	Percentage
Promoting Health	Importance of Mental Health	90	45%
Preventing Accidents	Training on Stress Management	85	42.5%
Enhancing Productivity	Fatigue Management	80	40%

The analysis of K3 aspects relevant to psychosocial risks highlights the importance of promoting mental health, providing training on stress management, and managing fatigue. These aspects are crucial for addressing the specific challenges faced by Indonesian seafarers, such as isolation, long working hours, and the potential for accidents at sea. By focusing on these aspects, stakeholders can effectively mitigate psychosocial risks and promote the overall health and wellbeing of seafarers.

Table 4: K3 Regulations and Policies Relevant to Psychosocial Risks

K3 Regulation	Relevance to Psychosocial Risks	Score	Percentage
UU No. 1 Tahun 1970	Provision on Mental Health	85	42.5%
Permenaker No. 5 Tahun 1996	Guidelines on Stress Management	80	40%
PP No. 50 Tahun 2012	Implementation of Fatigue Management	85	42.5%

The analysis of K3 regulations and policies relevant to psychosocial risks reveals that existing regulations in Indonesia, such as UU No. 1 Tahun 1970, Permenaker No. 5 Tahun 1996, and PP No. 50 Tahun 2012, provide guidelines and provisions for addressing mental health, stress management, and fatigue management. These regulations lay the foundation for implementing targeted K3 interventions to mitigate psychosocial risks and promote the health and wellbeing of Indonesian seafarers.

Table 5: Relevance to STCW – IMO Standardized

STCW – IMO Standard	Relevance to Psychosocial Risks	Score	Percentage
Chapter V - Regulation 14	Guidelines on Fitness for Duty	90	45%
Chapter VI - Regulation 1	Hours of Rest	85	42.5%
Chapter VI - Regulation 2	Manning Levels and Hours of Work	80	40%

The analysis of relevance to the Standards of Training, Certification, and Watchkeeping for Seafarers (STCW) - International Maritime Organization (IMO) Standardized highlights the importance of fitness for duty, hours of rest, and manning levels in addressing psychosocial risks. These standards provide a framework for ensuring that seafarers are fit for duty, have adequate rest, and are not overworked, thus contributing to their overall health and wellbeing. The second set of results of the research further supports and empowers the first set of results by highlighting the importance of K3 aspects, regulations, and policies in addressing psychosocial risks faced by Indonesian seafarers. By focusing on promoting mental health, providing training on stress management, and implementing regulations on fatigue management, stakeholders can effectively mitigate psychosocial risks and promote the health and wellbeing of seafarers. Moreover, adherence to STCW - IMO Standardized ensures that

seafarers are fit for duty, have adequate rest, and are not overworked, further contributing to their overall health and wellbeing.

Discussion

The discussion of the research findings encompasses the analysis of both sets of results, focusing on the identification of psychosocial risks faced by Indonesian seafarers, the relevance of K3 aspects, regulations, and policies, and the implications for promoting the health and wellbeing of seafarers. The first set of results highlights the significant psychosocial risks faced by Indonesian seafarers, including isolation, long working hours, accidents at sea, stress, and fatigue. These risks are inherent to the maritime industry and can have profound implications for the mental health and wellbeing of seafarers (Ghosh et al., 2014; Keke et al., 2023; Zhang & Zhao, 2017). The analysis reveals that these risks are of high intensity of importance, indicating the urgent need for targeted interventions to mitigate them. The second set of results further elucidates the K3 aspects, regulations, and policies relevant to addressing psychosocial risks (Mazaheri et al., 2014). The analysis highlights the importance of promoting mental health, providing training on stress management, and implementing regulations on fatigue management. Additionally, adherence to STCW - IMO Standardized ensures that seafarers are fit for duty, have adequate rest, and are not overworked, further contributing to their overall health and wellbeing (Svilicic et al., 2019; Vilko et al., 2019).

The findings underscore the critical role of K3 practices and policies in promoting the health and wellbeing of seafarers. By addressing psychosocial risks and implementing targeted interventions, stakeholders can create a safer and more supportive work environment for seafarers (Giovanni et al., 2023). Moreover, adherence to regulations and standards ensures that seafarers' rights are protected and that they receive the necessary support to perform their duties effectively (IMO, 2018; Stępień & Pilarska, 2021). The relevance of the research findings extends beyond the maritime industry in Indonesia to the global maritime community. Psychosocial risks are prevalent across the maritime industry worldwide, and the findings of this research can inform K3 practices and policies in other countries as well (Indrayani et al., 2023). By sharing best practices and lessons learned, stakeholders can work together to address psychosocial risks and promote the health and wellbeing of seafarers on a global scale. Furthermore, the research findings have implications for education and training in the maritime industry. By integrating psychosocial health considerations into the curriculum, maritime institutes can better prepare cadets for the challenges they may face at sea. Training on stress

management, social interaction, and fatigue management can equip cadets with the skills and knowledge needed to cope with the demands of the maritime profession effectively.

The discussion also highlights the need for collaboration and cooperation among stakeholders in the maritime industry. Addressing psychosocial risks requires a multifaceted approach involving ship operators, maritime institutes, government agencies, and international organisations. By working together, stakeholders can develop comprehensive strategies to promote the health and wellbeing of seafarers and create a safer and more sustainable maritime industry (Gavalas et al., 2022; Zaderei, 2020). The research findings underscore the importance of addressing psychosocial risks in the maritime industry and implementing targeted interventions to promote the health and wellbeing of seafarers. By focusing on K3 aspects, regulations, and policies, stakeholders can create a supportive work environment that prioritises the mental health and wellbeing of seafarers. Moreover, adherence to international standards ensures that seafarers' rights are protected, contributing to a safer and more sustainable maritime industry on a global scale.

CONCLUSION

This research provides valuable insights into the psychosocial risks faced by Indonesian seafarers and the corresponding Occupational Safety and Health (K3 - Keselamatan dan Kesehatan Kerja) interventions needed to mitigate these risks. The analysis of data from 50 cadets at the Maritime Institute of Jakarta highlights the significant challenges of isolation, long working hours, accidents at sea, stress, and fatigue, all of which can have profound implications for the mental health and wellbeing of seafarers. Furthermore, the research identifies key K3 aspects, regulations, and policies relevant to addressing psychosocial risks, including promoting mental health, providing training on stress management, and implementing regulations on fatigue management. Adherence to international standards, such as the Standards of Training, Certification, and Watchkeeping for Seafarers (STCW) - International Maritime Organization (IMO) Standardized, further ensures the protection of seafarers' rights and contributes to their overall health and wellbeing. The findings of this research have important implications for the maritime industry in Indonesia and beyond. By implementing targeted interventions and promoting a supportive work environment, stakeholders can create a safer and more sustainable maritime industry that prioritises the health and wellbeing of seafarers. Moreover, collaboration and cooperation among stakeholders are

essential for developing comprehensive strategies to address psychosocial risks and promote the health and wellbeing of seafarers on a global scale.

REFERENCES

Bergheim, K., Nielsen, M. B., Mearns, K., & Eid, J. (2015). The relationship between psychological capital, job satisfaction, and safety perceptions in the maritime industry. *Safety Science*, *74*, 27–36.

Bitar, H., & Alismail, S. (2022). Exploring enablers and inhibitors of eHealth educational tools: The needs of women searching for HPV and cervical cancer information. In *DIGITAL HEALTH* (Vol. 8, p. 2147483647). SAGE Publications. https://doi.org/10.1177/20552076221130189

Callís Oliver, L.-M. (2018). *SOLAS Convention: Safety on Board*. Universitat Politècnica de Catalunya.

Christodoulou-Varotsi, I., & Pentsov, D. A. (2008). The STCW Convention and related instruments. *Maritime Work Law Fundamentals: Responsible Shipowners, Reliable Seafarers*, 422–639.

Comtois, C., & Slack, B. (2017). Sustainable development and corporate strategies of the maritime industry. In *Ports, Cities, and Global Supply Chains* (pp. 249–262). Routledge.

Creswell, J. W., & Clark, V. L. P. (2011). Choosing a mixed methods design. In *Designing and Conducting Mixed Methods Research* (pp. 53–106). Sage Publications, Inc.

Gavalas, D., Syriopoulos, T., & Roumpis, E. (2022). Digital adoption and efficiency in the maritime industry. *Journal of Shipping and Trade*, *7*(1), 11.

Ghosh, S., Bowles, M., Ranmuthugala, D., & Brooks, B. (2014). On a lookout beyond STCW: Seeking standards and context for the authentic assessment of seafarers. *15th Annual General Assembly of the International Association of Maritime Universities, IAMU AGA 2014-Looking Ahead: Innovation in Maritime Education, Training and Research*, 77–86.

Giovanni, A., Fathimahhayati, L. D., & Pawitra, T. A. (2023). Risk Analysis of Occupational Health and Safety Using Hazard Identification, Risk Assessment and Risk Control (HIRARC) Method (Case Study in PT Barokah Galangan Perkasa). *IJIEM (Indonesian Journal of Industrial Engineering & Management)*, *4*, 198–211.

IMO, S. C. E. (2018). *IMO*. London.

Indrayani, R. I., Syamila, A. I., Sujoso, A. D. P., & Hartanti, R. I. (2023). Aspects of Personal Safety while Sailing for Fishermen in Jember Regency. *Medical Technology and Public Health Journal*, *7*(1).

Katz, J. (2015). A theory of qualitative methodology: The social system of analytic fieldwork. *Méthod (e) s: African Review of Social Sciences Methodology*, *1*(1–2), 131–146.

Keke, Y., Krisnawati, S., Alfina, I., Sakti, R. F. J., & Thabah, A. A. (2023). Analysis of Health and Safety (K3), Working Environment and Employee Performance at The Container Depot. *Majalah Ilmiah Bijak*, *20*(2), 249–257.

Mahfirah'eni, R., & Suhardi, B. (2021). Correlation Overview between Knowledge and Attitudes towards Occupational Safety and Health (K3) with Occupational Accidents. *Asian Journal of Social Science and Management Technology*, 11–16.

Mandaraka-Sheppard, A. (2014). *Modern maritime law and risk management*. CRC Press.

Mazaheri, A., Montewka, J., & Kujala, P. (2014). Modeling the risk of ship grounding—a literature review from a risk management perspective. *WMU Journal of Maritime Affairs*, *13*, 269–297.

Merriam, S. B., & Grenier, R. S. (2019). *Qualitative research in practice: Examples for discussion and analysis*. John Wiley & Sons.

Munim, Z. H., Dushenko, M., Jimenez, V. J., Shakil, M. H., & Imset, M. (2020). Big data and artificial intelligence in the maritime industry: a bibliometric review and future research directions. *Maritime Policy & Management*, *47*(5), 577–597.

Nikolić, N., Haga, J. M., Tülsner, J., Årland, P. O., Horneland, A. M., Kavanagh, B., Seidenstucker, K., Briggs, S., Lund-Kordahl, I., & Pernilla, C. S. (2023). Medical training of seafarers: International Maritime Health Foundation (IMHF) Expert Panel Consensus Statement. *International Maritime Health*, *74*(1), 15–23.

Saldana, J. (2014). *Thinking qualitatively: Methods of mind*. SAGE publications.

Santer, M., Ring, N., Yardley, L., Geraghty, A. W. A., & Wyke, S. (2014). Treatment non-adherence in pediatric long-term medical conditions: systematic review and synthesis of qualitative studies of caregivers' views. *BMC Pediatrics*, *14*(1), 1–10.

Sarosa, S. (2021). *Analisis Data Penelitian Kualitatif*. Pt Kanisius.

Stępień, J., & Pilarska, M. (2021). Selected operational limitations in the operation of passenger and cargo ships under SOLAS Convention (1974). *Zeszyty Naukowe Akademii Morskiej w Szczecinie*, *65 (137*, 21–26.

Sudarman, D. (2023). THE INFLUENCE OF OCCUPATIONAL HEALTH AND SAFETY AND SUPERVISION ON EMPLOYEE PERFORMANCE OF PT. PAN MARITIME WIRA PAWITRA CREW MEMBERS. *JOURNAL OF MANAGEMENT, ACCOUNTING, GENERAL FINANCE AND INTERNATIONAL ECONOMIC ISSUES*, *2*(3), 729–741.

Svilicic, B., Kamahara, J., Rooks, M., & Yano, Y. (2019). Maritime cyber risk management: An experimental ship assessment. *The Journal of Navigation*, *72*(5), 1108–1120.

Vilko, J., Ritala, P., & Hallikas, J. (2019). Risk management abilities in multimodal maritime supply chains: Visibility and control perspectives. *Accident Analysis & Prevention*, *123*, 469–481.

Wahyuni, A., Kurniawan, A., & Yuliantini, Y. (2023). Analisis Faktor Keselamatan Dan Kesehatan Kerja (K3) Dan Organizational Citizenship Behavior (Ocb) Dalam Meningkatkan Kesiapan Operasional Prajurit Batalyon Infanteri 4 Marinir. *SCIENTIFIC JOURNAL OF REFLECTION: Economic, Accounting, Management and Business*, *6*(2), 416–425.

Willig, C. (2014). Interpretation and analysis. *The SAGE Handbook of Qualitative Data Analysis*, *481*.

Yilmaz, K. (2013). Comparison of quantitative and qualitative research traditions: Epistemological, theoretical, and methodological differences. *European Journal of Education*, *48*(2), 311–325.

Zaderei, A. (2020). Ensuring the sustainability of the human resources management system of maritime industry enterprises. *Access: Access to Science, Business, Innovation in Digital Economy*, *1*(2), 146–156.

Zaman, M. B., Pitana, T., Prastowo, H., Priyanta, D., Siswantoro, N., Maulana, F. S., & Busse, W. (2023). Occupational health and safety risk assessment of shipyard using HIRARC method. *AIP Conference Proceedings*, *2482*(1).

Zhang, P., & Zhao, M. (2017). Maritime health of Chinese seafarers. *Marine Policy*, *83*, 259–267.