ANALISIS HUBUNGAN KELELAHAN KERJA DAN TINGKAT KESADARAN SITUASIONAL (*SITUATION AWARENESS*) TERHADAP RISIKO KECELAKAAN PADA PENGEMUDI KAPAL PENUMPANG DI INDONESIA

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ABSTRAK

Kecelakaan kapal penumpang di Indonesia banyak disebabkan oleh human error, terutama akibat kelelahan kerja dan rendahnya situational awareness (SA). Penelitian ini bertujuan menganalisis pengaruh kelelahan terhadap SA dan tingkat risiko kecelakaan, serta menilai peran SA sebagai mediator. Penelitian dilakukan secara kuantitatif terhadap 30 pelaut melalui dua skenario simulasi pelayaran (normal dan terganggu), dilengkapi kuesioner kelelahan, pengukuran SA berbasis QUASA, dan kuesioner tingkat risiko kecelakaan. Analisis data menggunakan metode SEM–PLS. Hasil menunjukkan kelelahan berpengaruh signifikan terhadap SA ($p < 0,05$), namun baik kelelahan maupun SA tidak berpengaruh langsung terhadap kecelakaan. Kalibrasi SA menunjukkan pelaut ≤5 tahun memiliki SA lebih rendah (52%) dan false alarm lebih tinggi (94%) dibanding pelaut >5 tahun. Temuan ini menegaskan bahwa kelelahan berdampak pada penurunan kewaspadaan pelaut muda. Oleh karena itu, disarankan implementasi sistem shift kerja adaptif dan pelatihan kalibrasi SA untuk meningkatkan keselamatan pelayaran.

Kata Kunci: Kelelahan_Pelaut, Kesadaran Situasional, Kecelakaan, Keselamatan, SEM-PLS.

ANALYZING THE IMPACT OF WORK-RELATED FATIGUE AND SITUATIONAL AWARENESS ON ACCIDENT RISK AMONG PASSENGER SHIP OPERATORS IN INDONESIA

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ABSTRACT

Passenger ship accidents in Indonesia are largely caused by human error, particularly due to work-related fatigue and low situational awareness (SA). This study aims to analyze the effect of fatigue on SA and accident risk, as well as assess the mediating role of SA. A quantitative approach was applied involving 30 seafarers who participated in two simulated navigation scenarios (normal and disrupted). Data were collected through a fatigue questionnaire developed by the researcher, SA measurement using the QUASA method, and an accident risk questionnaire. Data analysis was conducted using the SEM–PLS method. The results indicate that fatigue has a significant negative effect on SA ($p < 0.05$), while neither fatigue nor SA had a direct significant impact on accident risk. SA calibration showed that seafarers with ≤5 years of experience had lower SA (52%) and higher false alarm rates (94%) compared to those with >5 years. Adaptive shift scheduling and SA calibration training are recommended to improve maritime safety.

Keywords: *Seafarer_Fatigue, Situational Awareness, Accidents,* Safety, SEM-PLS.