

ANALISA HUBUNGAN BEBAN KERJA MENTAL DAN PERILAKU OPERASIONAL TERHADAP PENURUNAN TINGKAT ATENSI PELAUT PADA PENGEMUDI KAPAL

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ABSTRAK

Keselamatan pelayaran sangat dipengaruhi oleh faktor manusia, khususnya kemampuan pelaut dalam mempertahankan tingkat atensi selama pengoperasian kapal. Dua faktor yang berpotensi memengaruhi tingkat atensi adalah beban kerja mental dan perilaku operasional. Penelitian ini bertujuan menganalisis hubungan kedua faktor tersebut terhadap tingkat atensi pelaut pada pengemudi kapal. Data diperoleh dari 35 pelaut bersertifikasi minimal ANT/ATT IV melalui simulasi tiga skenario pelayaran (*baseline*, skenario 1, dan skenario 2). Pengukuran dilakukan menggunakan *Rating Scale Mental Effort* (RSME), *Multidimensional Driving Style Inventory* (MDSI), dan *Attention-Related Driving Errors Scale* (ARDES), kemudian dianalisis dengan SEM-PLS. Hasil menunjukkan bahwa pada kondisi *baseline*, beban kerja mental tidak berpengaruh signifikan terhadap tingkat atensi ($O=0,047$; $p=0,685$), sedangkan perilaku operasional berpengaruh positif dan signifikan ($O=0,892$; $p=0,000$). Pada skenario 1, beban kerja mental berpengaruh negatif dan signifikan ($O=-0,269$; $p=0,048$), sementara perilaku operasional berpengaruh positif dan signifikan ($O=0,612$; $p=0,000$). Pada skenario 2, beban kerja mental ($O=0,192$; $p=0,049$) dan perilaku operasional ($O=0,839$; $p=0,000$) berpengaruh positif dan signifikan terhadap tingkat atensi. Temuan ini menunjukkan bahwa perilaku operasional merupakan faktor yang paling konsisten memengaruhi tingkat atensi pelaut.

Kata Kunci: Ergonomi, Beban Kerja Mental, Perilaku Operasional, Tingkat Atensi, SEM-PLS.

THE ANALYSIS OF THE RELATIONSHIP BETWEEN MENTAL WORKLOAD AND OPERATIONAL BEHAVIOR ON SEAFARERS ATTENTION LEVELS AMONG SHIP OPERATORS

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ABSTRACT

Maritime safety is strongly influenced by human factors, particularly seafarers' ability to maintain attention during ship operations. Two factors that may affect attention levels are mental workload and operational behavior. This study aims to analyze the relationship between these factors and seafarers' attention levels among ship operators. Data were collected from 35 seafarers holding a minimum ANT/ATT IV certification through simulations involving three navigation scenarios (baseline, Scenario 1, and Scenario 2). Measurements were conducted using the Rating Scale Mental Effort (RSME), Multidimensional Driving Style Inventory (MDSI), and Attention-Related Driving Errors Scale (ARDES), and the data were analyzed using Structural Equation Modeling–Partial Least Squares (SEM-PLS). The results indicate that under baseline conditions, mental workload has no significant effect on attention levels ($O = 0.047$; $p = 0.685$), while operational behavior has a positive and significant effect ($O = 0.892$; $p = 0.000$). In Scenario 1, mental workload has a negative and significant effect ($O = -0.269$; $p = 0.048$), whereas operational behavior remains positive and significant ($O = 0.612$; $p = 0.000$). In Scenario 2, both mental workload ($O = 0.192$; $p = 0.049$) and operational behavior ($O = 0.839$; $p = 0.000$) have positive and significant effects on attention levels. These findings indicate that operational behavior is the most consistent factor influencing seafarers' attention levels.

Keyword: *Ergonomics, Mental Workload, Operational Behavior, Attention Level, SEM-PLS.*