

ABTRAK

Penggunaan *standing* laptop yang tidak ergonomis dapat menyebabkan keluhan *Musculoskeletal Disorders* (MSDs) akibat postur kerja yang kurang sesuai, terutama pada area leher, bahu, punggung, dan pergelangan tangan. Penelitian ini mendukung pencapaian *Sustainable Development Goals* (SDGs) poin 3 (*Good Health and Well-Being*) melalui upaya peningkatan kesehatan dan keselamatan pengguna saat bekerja menggunakan laptop. Tujuan penelitian ini adalah mengevaluasi tingkat risiko MSDs pada penggunaan *standing* laptop non-universal menggunakan metode *Job Strain Index* (JSI) serta merancang *universal standing laptop* yang ergonomis menggunakan pendekatan *Ergonomic Function Deployment* (EFD). Penelitian melibatkan 30 responden yang terdiri dari 15 mahasiswa Teknik Industri dan 15 mahasiswa Sosiologi Universitas Trunojoyo Madura. Data dikumpulkan melalui kuesioner *Nordic Body Map* (NBM), observasi, wawancara kebutuhan pengguna (*Voice of Customer*), dan pengukuran antropometri. Hasil evaluasi menunjukkan bahwa *standing* laptop non-universal masih berpotensi menimbulkan risiko MSDs akibat ketidaksesuaian postur kerja. Melalui metode EFD diperoleh prioritas kebutuhan pengguna yang diterjemahkan menjadi spesifikasi teknis berupa mekanisme pengaturan ketinggian, pengaturan sudut kemiringan, sistem anti-slip, ventilasi pendinginan, dan area mouse terpisah. Hasil penelitian berupa rancangan *universal standing laptop* yang diharapkan mampu meningkatkan kenyamanan, memperbaiki postur kerja, dan mengurangi risiko MSDs.

Kata kunci: Ergonomic Function Deployment (EFD), Job Strain Index (JSI), Musculoskeletal Disorders (MSDs), Standing Laptop, Risiko Kesehatan.

ABSTRACT

The use of non-ergonomic laptop stands can lead to Musculoskeletal Disorders (MSDs) due to improper working postures, particularly affecting the neck, shoulders, back, and wrists. This study supports the achievement of Sustainable Development Goal (SDG) 3: Good Health and Well-Being by promoting occupational health and reducing the risk of work-related musculoskeletal problems. The objectives of this study were to evaluate the risk level of MSDs associated with a non-universal standing laptop using the Job Strain Index (JSI) method and to design an ergonomic universal standing laptop using the Ergonomic Function Deployment (EFD) approach. The study involved 30 respondents consisting of 15 Industrial Engineering students and 15 Sociology students from Universitas Trunojoyo Madura. Data were collected through the Nordic Body Map (NBM) questionnaire, observations, user requirement interviews (Voice of Customer), and anthropometric measurements. The evaluation results indicated that the existing non-universal standing laptop still posed a risk of MSDs due to unsuitable working postures. Using the EFD method, user requirements were translated into technical specifications, including adjustable height mechanisms, adjustable tilt angles, anti-slip systems, ventilation features, and a separate mouse platform. The proposed universal standing laptop design is expected to improve user comfort, promote better working postures, and reduce the risk of MSDs.

Keywords: *Ergonomic Function Deployment (EFD), Job Strain Index (JSI), Musculoskeletal Disorders (MSDs), Standing Laptop, Health Risk.*