

## ***ABSTRACT***

*Telkom University is one of the universities in Kabupaten Bandung that offers a beautiful green atmosphere from trees. However, the impact given is a lot of leaf waste that fall in the campus area. Leaf waste in Telkom University reaches 250 to 300 kg per day.*

*Currently, the janitors still use manual methods to clean leaf waste, so that makes the work posture not ergonomic and causes a risk of Musculoskeletal Disorders (MSDs). Using the Rapid Entire Body Assessment (REBA) measurement, the janitor's posture score was determined to be 8, indicating a high risk that requires investigate and implement change.*

*Based on the problems, a research was conducted to develop a semi-automated tool using Ergonomic Function Deployment (EFD) method to reduce the risk of Musculoskeletal Disorders (MSDs). This tool is called Leaf Vacuum 2in1, a multifunctional tool which has a vacuum feature as well as a shredder for leaf waste.*

*In the design process, Leaf Vacuum 2in1 considers the ergonomic principles (ENASE) and uses anthropometry data. Based on the final design of Leaf Vacuum 2in1, the janitor's work posture has a REBA score of 3, indicating a low risk and requires changes (if needed). Therefore, Leaf Vacuum 2in1 has the potential to reduce the risk of Musculoskeletal Disorders (MSDs) of janitors.*

***Keywords : Ergonomic Function Deployment, ENASE, leaf vacuum 2in1, Musculoskeletal Disorders, Rapid Entire Body Assessment, leaf waste***