

ABSTRACT

This research involved with the process of making the stamp Rumah Batik Komar, especially at the time of scrapping, which had previously been investigated and has a score RULA 7/7, which was the highest score and indicated that the highest risk for experiencing MSDs. Then the previous research was involving with an improvement scraping table that has a score of 3/3. The problem was untested strength in terms of both stress and displacement for design concept that has been made from previous research. The second factor that hasn't been tested was human factor especially effectivity, efficiency, people's respond for this improved scraping table, and the last aspect was economic value from proposed scraping table.

From three problem that has been mentioned above, this study will consisted of two methods, the finite element method, usability testing and cost – benefit analysis. Finite Element Method methods used for the first problem because this method could process from design concept and external force that happened to scraping table, generate value plot stress - displacement, and was used as an analysis whether the improved design concept was feasible or not with FoS and NSD. Testing of the human aspect of the improved scraping table was using Usability Testing, to see how effective, efficient, and got responder from common people and operator. Method for the last problem was cost – benefit analysis which could asses cost and benefit from proposed scraping table.

The results that we could take from research were three results. First result that in terms of the strength of the stress and displacement, due to the design concept with Factor of Safety and National Standard Displacement analysis, concept design was good. Also for improved scraping table used usability, improved scraping table was better than previous scraping table. Cost – Benefit Analysis's result was benefit more bigger than cost, so could be concluded that scraping table's economic aspect was feasible.

Keywords— Finite Element Method, Scrape, Batik Stamp, Usability Testing, Cost – Benefit Analysis