

Measurement of Handgrip Force of the Dominant Hand at Pre-Selected Force  
Levels for Males

李開偉

Industrial Management

Management

kai@chu.edu.tw

Abstract

An experiment was conducted to measure the grip force of twenty male subjects under guided-gripping scenario. The subjects were instructed to grip with an exertion level of 20%, 50%, 70%, and 100% of their maximum voluntary contraction of their dominant hands. A linear regression model was established to describe the relationship between the gripping force and the rating of Borg' s CR-10 scale. This model was statistically significant at  $p < 0.0001$  and with an  $R^2$  of 0.9. The Pearson' s correlation coefficient between the grip force and the score of the CR-10 scale was 0.9. The results of this study showed that the guided grip force of the dominant hand of the male subjects had linear relationship with the rating of CR-10 scale. Therefore, the CR-10 scale is appropriate as a quantitative measure of perceived hand grip exertion of the dominant hand for males.

Keyword : Grip force, hand exertion, perception, Borg' s CR-10