

Fire risk among secondary school students community relationship of human characteristics on total evacuation time

ABSTRACT

This paper was designed to study the relationship between the human characteristics and evacuation time among the secondary students. The designed questionnaire and direct measurement approaches were used to collect the data on seven human characteristics. Pearson Correlation test was used to identify a correlation between the dependent and independent variables while Multiple Linear Regression (MLR) was performed to check the strength of the relationship and its significance level. Gender and walking speed are significantly correlate with evacuation time with p-value<0.05 and <0.001 respectively. Due to collinearity, variable weight was removed which showed more predictive capability based on ANOVA result. Walking speed is significant with p-value<0.001. The R-value of 0.69 showed a moderate correlation between observed and predicted value and 48% of the variance in evacuation time is explainable by variance in walking speed. An increase in 1m/s of walking speed will decrease 55.29 seconds of evacuation time.

Keyword: Evacuation time; Human characteristics; Walking speed