Practicum Assignment #6

Go back to the simple linear regression model that you estimated for last week’s assignment.

* Now include what you believe to be the most important control variables in your regression equation.
  + Y = 170.857 + 2.793x1 – 1.195x2 + 200.288x3
* Interpret your results
  + Coefficient interpretation:
    - For each additional kilogram of bodyweight, we can expect to see an increase of approximately 2.793kg in an athlete’s total lift capability
    - For each additional year in age, we can expect to see a decrease of approximately 1.195kg in an athlete’s total lift capability
    - If an athlete is male, we can expect them to lift an average of 200.288kg more for their total lift than their female counterparts
  + The p-value for all of the slope coefficients are very small, close to zero. This indicates that all the predictor coefficients are statistically significant.
  + Adjusted R-squared of the multiple linear regression model indicates that approximately 69.23% of total variation in “TotalKg” lift capability can be explained by its relationship with an athlete’s bodyweight, age, and gender. This is a ~26% increase from the initial simple linear regression model that was produced for the last assignment
* Is the estimated slope coefficient on your main predictor variable noticeably different than it was in last week’s assignment?
  + Yes, the slope coefficient on my main predictor variable is much different than what was produced for the last assignment (well outside the 95% confidence interval I calculated). This is unsurprising, however, since simple linear regressions depend on only one variable (no pun intended). Much more emphasis lies on the one variable in simple linear regression. However, in multiple linear regression, other predictor variables share the load for forecasting, and this shared responsibility *typically* results in better model that produced better estimates.

Table

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