Linear Regression for Business Statistics

Confidence interval for the predicted value. (Height and Weight.xlsx)

$$Weight = \beta_0 + \beta_1 Male + \beta_2 Height$$

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Predict the weight of a male Olympian with a height of 177 cm?

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Confidence interval for beta coefficients

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$$Weight = \beta_0 + \beta_1 Male + \beta_2 Height$$

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Estimated value for β_1 coefficient: **5.53**

Linear Regression for Business Statistics

Confidence interval for the predicted value. **(Height and Weight.xlsx)**

$$Weight = \beta_0 + \beta_1 Male + \beta_2 Height$$

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On average, a Male Olympian has weight that is 5.53 Kilogram more as compared to a Female Olympian, all other variables kept at the same level.

Estimated value for β_1 coefficient: **5.53**

Linear Regression for Business Statistics

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95% Confidence interval for β_1 coefficient: [4.37, 6.69]

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Margin of error: 5.53 +/- 1.16

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- **This is based on a *sample.***
- **A slightly different sample would give us a different prediction.**
- **We can construct a confidence interval for this prediction.**

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Predicted value +/- |T.INV(α/2, residual df)|*(std error of regression)

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95% Confidence interval for the prediction: [55.37, 94.06]

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