**Assignment 19.2**

Using the following data, perform a oneway analysis of variance using α=.05. Write up the results in APA format.

[Group1: 51, 45, 33, 45, 67]

[Group2: 23, 43, 23, 43, 45]

[Group3: 56, 76, 74, 87, 56]

Sample mean of 3 groups:

Group 1: 48.2

Group 2: 35.4

Group 3: 69.8

Variance 1 = 153.2

Variance 2 = 128.8

Variance 3 = 183.2

Mean of all variance is = (153.2 + 128.8 + 183.2)/3

= 155.0667

Dferror = 15-3 = 12

SSerror = 155.0667 \* 12 = 1860.8

Grand Mean(x\_bar grand) = (48.2 + 35.4 + 69.8)/3

Variance Mean = 302.29

MSgroup = (302.29)(5) = 1511.45

Dfgroups = 3-1 = 2

SSgroup = 1511.45 \* 2 = 3022.9

Test Statistic and critical value

F = 1511.45/155.067 = 9.75

Fcritical(2,12) = 3.89

Since F > Fcritical, hence reject Null Hypothesis.

Effect Size = η2 = SSgroup/(SSgroup +SSerror) = 3022.9/(3022.9+1860.8)

= 3022.9 / 4883.7 = 0.62

**APA format**

F(2,12) = 9.75

P < 0.05

η2=0.62.