**Worksheet: Using EXCEL to calculate confidence intervals**

**Calculating the confidence interval**

There are two ways in which you can calculate the confidence interval for the mean. Either using the Data Analysis ToolPak or the ***CONFIDENCE.T*** function:

*= CONFIDENCE.T(alpha,SD,N)*

**Where:**

Alpha = required significance level e.g. for 95% CI set alpha to 0.05, for 90% CI set alpha to 0.1

SD = sample standard deviation

N = number of observations included in the sample

The value that is returned is the value that is either added to or subtracted from the mean value to give the upper and lower limits respectively:

Lower limit *= MEAN - CONFIDENCE.T(alpha,SD,N)*

Upper limit *= MEAN + CONFIDENCE.T(alpha,SD,N)*

For example, using the function to calculate the 95% confidence interval for a workplace wellbeing sample of 30 people with mean = 59 and SD = 16.7:

Lower limit *= 59 - CONFIDENCE.T(0.05,16.7,30) = 59 - 5.98 = 53.02*

Upper limit *= 59 + CONFIDENCE.T(0.05,16.7,30) = 59 + 5.98 = 64.98*

Note that you can also use the Data Analysis ToolPak ‘**Descriptive Statistics**’ to do this as well. It will produce the same value as that given by ***CONFIDENCE.T***, which you will need to add or subtract from the mean.