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1. How to enter data to do a Mann-Whitney U test.

For general advice on data entry see the "How to enter data into SPSS" help sheet.

Mann-Whitney U tests are used on unrelated data: Data for the dependent variable go in one column and data for the independent variable goes in another. In this example, the dependent variable is *BMD* and the independent variable is *SEX*. *BMD* is bone-density measurement measured in grams per square centimetre of the neck of the femur which is a scale level of measurement). *SEX* is measured at the nominal level: either 1 (value label = female) or 2 (value label = male).

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2. How to do a Mann-Whitney U test.

To get SPSS to conduct a Mann-Whitney U test :

Open your data file.

Select: Anlyze - Nonparametric Tests – Independent Samples...

Page 1 of 2 Dawn Hawkins: Anglia Ruskin University, January 2019 This will bring up the **Nonparametric Tests Two or More Independent Samples Tests** window which has three tabs:

1. Objective. Select Customize analysis.

2. Fields. Either use the default Use

predefined roles or select Use custom field assignments and send *Bone Density Measurement* to the **Test Field** box and *Sex* to the Groups box.)

3. Settings. Select Customize tests, then Mann–Whitney U (2 samples) in the Compare distributions across Groups area and Hodges-Lehman estimates (2 samples) under in the Estimate Confidence Interval across Groups



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Press **Run** on any and then double click on the **Hypothesis Test Summary** table in the **Output** window to bring up the **Model Viewer** window. From the **View** drop-down menu (bottom left), select **Confidence Interval Summary View**. This will produce the following in the **Output** window.



In summary the key information from the test is

```
U<sub>higher</sub>=279.5, n<sub>1</sub>=20, n<sub>2</sub>=20, P=0.032;
```

And the unstandardized effect size (estimated difference between the medians of the populations) is difference (female–male)=-0.071, 95% CI [-0.130,-0.005]

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