SPSS20 HELP SHEET: Mann-Whitney U test

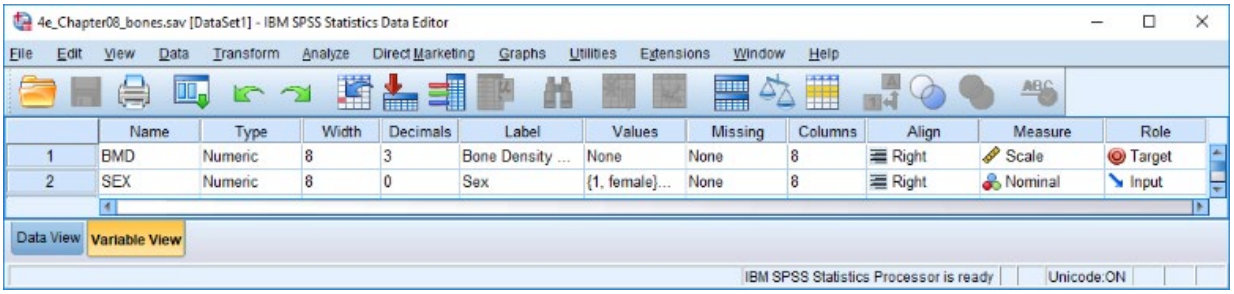
CONTENTS

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

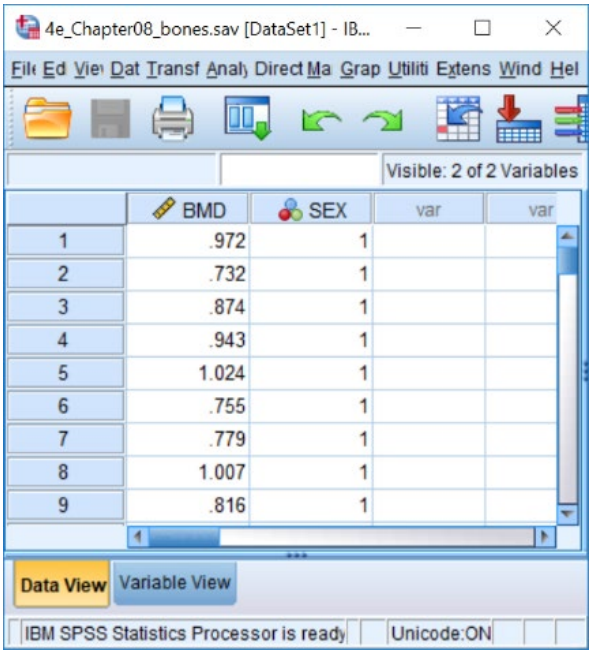
For general advice on data entry see the **"How to enter data into SPSS"** help sheet.

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).

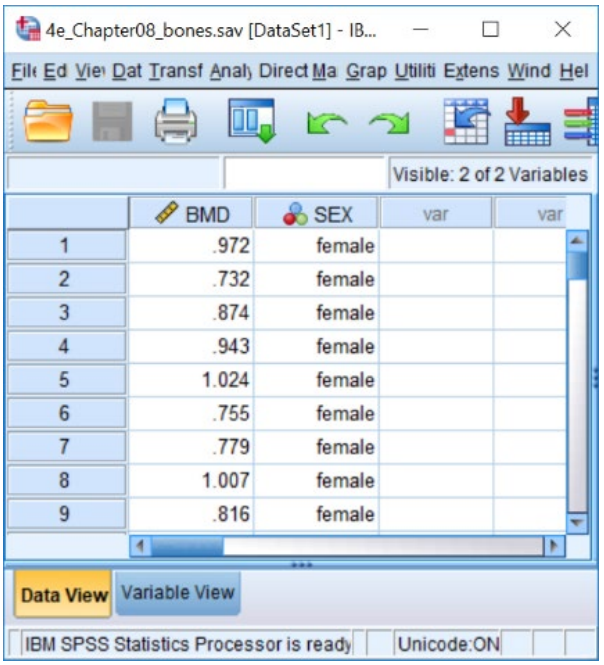
Variable View



Data View
(View – Value Labels off)



Data View
(View – Value Labels on)

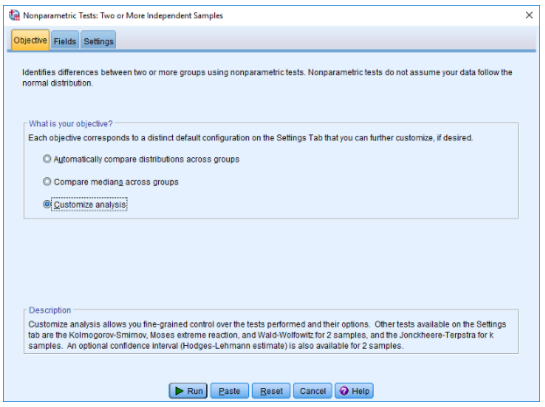


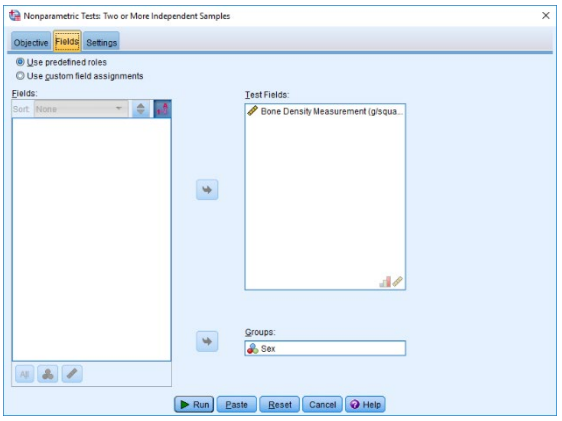
2. How to do a Mann-Whitney U test.

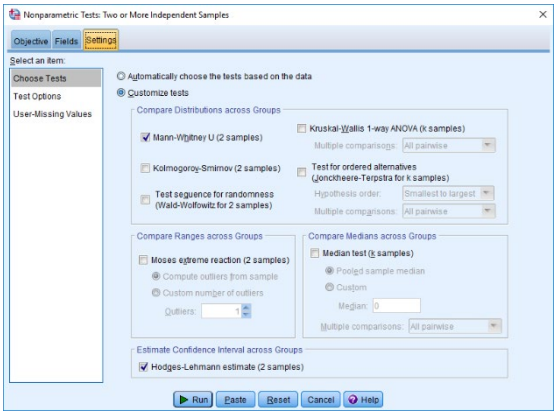
To get SPSS to conduct a Mann-Whitney U test :
Open your data file.
Select: Anlyze - Nonparametric Tests – Independent Samples...

This will bring up the **Nonparametric Tests Two or More Independent Samples Tests** window which has three tabs:

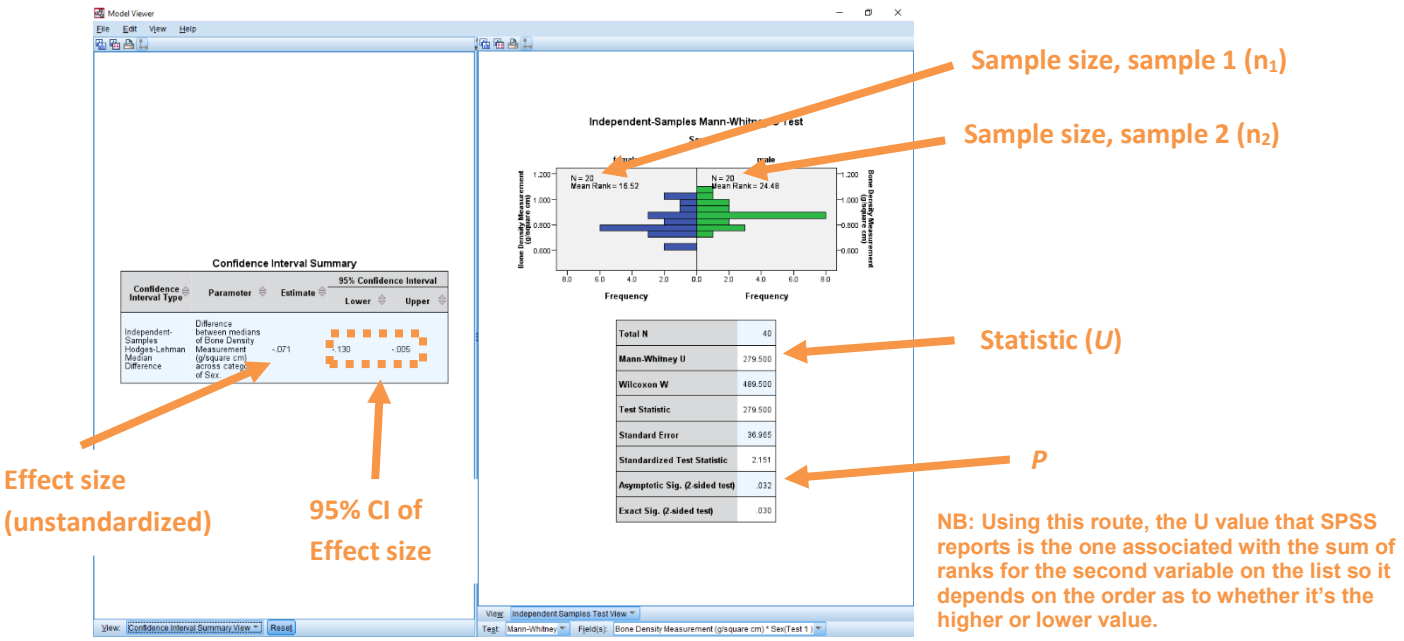
1. **Objective.** Select **Customize analysis**.
2. **Fields**. Either use the default **Use predefined roles** or select **Use custom field assignments** and send *Bone Density Measurement* to the **Test Field** box and *Sex* to the **Groups** box.**)**
3. **Settings.** Select **Customize tests**, then **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**







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_{higher}=279.5, n_1=20, n_2=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]