

Comparing Means

Are the mean GCSE scores in secondary school different for boys and girls?

We mentioned above that one easy way of seeing if there is a difference in GCSE score between different groups of people is to calculate and compare the mean values of confidence in the police in each group you are investigating. Let's say we are interested in any differences in educational achievement based on sex. We can attempt to answer this question by comparing mean GCSE scores between girls and boys in Year 11. We can use the **Compare Means** command to determine in sex has any bearing on GCSE score. (We could obviously ask many questions like this – which you can do by yourself after we've run this first mean comparison together.)

Before we run any tests on **s1gender**, the variable containing data on the sex of YCS survey participants, we should use the **Frequencies** functions to see if there are any missing values, as these could upset our analyses.

*Are there any missing values in the variable **s1gender**? Do we need to adjust this variable at all?*

Select **Analyze, Compare Means**, and then **Means**.

Move **s1gcseptsnew** to the **Dependent List** box and **s1gender** to the **Independent List** box. Click **OK**.

Your Output window should look like this:

Case Processing Summary						
	Cases					
	Included		Excluded		Total	
	N	Percent	N	Percent	N	Percent
ks4 pts score on new basis not capped * S1 Gender	13770	98.3%	233	1.7%	14003	100.0%

Report			
ks4 pts score on new basis not capped			
S1 Gender	Mean	N	Std. Deviation
Male	381.2331	6044	131.20956
Female	404.6233	7726	120.38817
Total	394.3568	13770	125.78524

Here, we're given the total number of survey respondents included in **s1gcseptsnew**, the number of survey respondents we've excluded (those 233 values we coded as missing during our univariate analysis), the percentage of the total survey represented by the police confidence variable, the mean police confidence scores for men and women, the standard deviations of those means, and the number of respondents in each category.

What do you notice about the mean GCSE scores for men and women?

Is this mean difference what you might expect?

Summary

You have calculated the mean GCSE score for both males and females and interpreted the results. This is done so that you know the potential relationships within the data. Now, try to use the mean comparison method listed above to calculate the mean difference in GCSE scores for survey participants who answered s1targs2, a categorical variable cataloguing whether or not a young person held an A/AS level qualification during Sweep 1 of the YCS.

You can go on to use a t test to test the statistical significance of the difference in means for any explanatory (or independent) variables that are categorical with two categories.

*****Note: as we are making changes to a dataset we'll continue using for the rest of this section, please make sure to save your changes before you close down SPSS. This will save you having to repeat sections you've already completed!**