

## NOMINAL, ORDINAL and INTERVAL DATA

Nominal data is data that has variables that are basically a category (for example - do people prefer *chocolate* or *cabbage*?). This means that it can only be measured by frequency:

60 people prefer cabbage

5 people prefer chocolate

With this form of measurement it is best to report the MODE as this gives the most common frequency.

Ordinal data is data that can be measured. It is numerical in form. This means that we can compare people to one another by order, rank or position. So - cabbage is better than chocolate ... do you ....

1 Very strongly agree

2 Strongly agree

3 Agree

4 Undecided

5 Disagree

6 Strongly disagree

7 Very strongly disagree

Or - Mark on a scale of 0 - 100 how much you like cabbage.

This then gives a result that can be measured in comparison to others. The responses can be put in order but it has problems because my 'very strongly agree' could be your 'agree' so we cannot compare like with like. So we can't add our scores together (1+3) in order to get the mean - it would be meaningless - so we would find the MEDIAN for this type of data.

If you look at the scale question - we cannot say that someone who ranks cabbage as 80 prefers cabbage more than someone who ranks it as 40. It is very subjective. SO the only way to report this data is through the MEDIAN eg.

Rating of liking cabbage	Rank
20	1
45	2
60	3.5
60	3.5
80	5
95	6

See how two people said they liked cabbage at scale 60 so this shares the rank placement of 3rd and 4th place - so they share the average of these two places which is 3 and a half (3.5). This would also be the middle value (the MEDIAN) when all the ranks are placed in order.

Interval and Ratio data - this is another measured variable. If I asked :

What is your height in centimetres?

Or

Name as many types of cabbage as possible in 30seconds.

I would get an interval scale of measurement because there are equal intervals between each position on such a scale. Height, weight and time are all made on an interval scale. If the scale also has a 0 starting point (such as height in cms or seconds taken to read a text) this is known as ratio scales. Interval data can go into negative values (for example temperature can go into the minuses in Winter!!).

This is clearly the most precise type of data as it is more objective.

We can find the MEAN of this data (the average value of all scores).

Once you have worked out which level of data you are using (and I personally think that the simplest tests use INTERVAL or RATIO) then you can use the handout I have sent you to work out the statistical test. If you get a moment - it is well worth looking up the test and seeing how your data might fit in - just so it isn't so alien to you when you get your results.