

Chapter 4-Measures of Central Tendency

4.1 Mode = 72; Median = 72, Mean = 70.18

4.3 Even without reading the passage, students are still getting about twice as many items correct as they would by chance. This suggests that the test, while testing reading comprehension, is also testing something else. I am not surprised at these results because most students can guess at better than chance levels.

I think it is worth pointing out that these data suggest that the test measures something other than reading comprehension. Most students just say “they were able to guess intelligently,” without realizing that this means that the test is somehow measuring guessing ability. This will become more obvious when we talk about correlation in Chapter 9. Any positively skewed distribution will have a mean greater than the median.

4.5 The mean falls above the median.

4.7 Rats running a straight alley maze:

$$\Sigma X = 320; \bar{X} = \frac{\Sigma X}{N} = \frac{320}{15} = 21.33$$

Median = 21

4.9 Multiplying by a constant (5):

Original data 8 3 5 5 6 2 Mean = 4.833, Mode = 5, Median = 5

Revised data 40 15 25 25 30 10 Mean = 24.17 = 5×4.833, Mode = 25,
Median = 25

4.11 Measures of central tendency for ADDSC and GPA:

ADDSC

Mode = 50

Median = 50

Mean = 4629/88 = 52.6

GPA

Mode = 3.00

Median = 2.635

Mean = 216.15/88 = 2.46

4.13 The means are very nearly the same for the two conditions.

Stimulus = Mirror

Descriptive Statistics^a

	N	Minimum	Maximum	Mean	Std. Deviation
RTsec	298	.81	4.44	1.6251	.63030
Valid N (listwise)	298				

a. Stimulus = Mirror

Stimulus = Same

Descriptive Statistics^a

	N	Minimum	Maximum	Mean	Std. Deviation
RTsec	302	.72	4.42	1.6269	.64518
Valid N (listwise)	302				

a. Stimulus = Same

4.15 The only measure that is acceptable for nominal data is the mode, because the mode is the only one that does not depend on the relationships among the points on the scale.

4.17 Class attendance:

Regular Attendees Mean = 276.42; Median = 276

Poor Attendees Mean = 248.33; Median = 256

The two groups were 20 points apart in terms of the medians, and about 25 points apart in terms of means. Clearly, those students who come to class do better.

Because this is not a true experiment (we don't assign subjects to groups at random), we don't know exactly what it means. I would like to think that students did poorly because they didn't hear my brilliant presentations, but it could also be that poorer students in general are less likely to come to class. This is an issue of confounding, and it is a good example making the preference for random assignment apparent in a situation with which most students can identify.

4.19 This is an Internet activity in which there is no fixed answer.

4.21 a) mean = 46.57; 10% trimmed mean = 46.67.

b) mean = 28.4; 10% trimmed mean = 25.0

c) Trimming was more effective in the second example because the second distribution was quite positively skewed.

4.23 The Male Optimists had a mean of 1.016, while the Male Pessimists had a mean of 0.945. This difference is very reliable.