

## SPSS: Single-Sample t-test

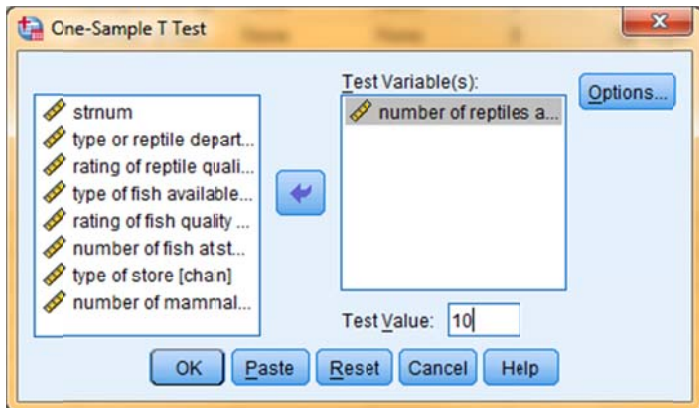
**Application:** To test a hypothesis about the mean of a single quantitative variable.

**Research Hypothesis** (it is often the case that the researcher's hypothesis is the statistical null, something more common for this statistical model than for most others): The researcher hypothesized that the average number of reptiles for the population of stores represented by these pet stores was 10.

**H<sub>0</sub>:** The sample represents a population of pet stores that has an average of 10 reptiles.

### Analyze → Compare Means → One Sample TTest

- highlight the variable (be sure it is quantitative) and press the arrow to put it into the "Test Variable(s)" box
- type the H<sub>0</sub> value into the "Test Value" box



### SPSS Syntax

```
T-TEST
/TESTVAL=10
/VARIABLES=reptnum.
```

← Hypothesized mean  
← quantitative variable

**One-Sample Statistics**

	N	Mean	Std. Deviation	Std. Error Mean
number of reptiles at store	12	9.25	4.267	1.232

**One-Sample Test**

	Test Value = 10			
	t	df	Sig. (2-tailed)	Mean Difference
number of reptiles at store	-.609	11	.555	-.750

The p-value of .555 means there is a 55.5% chance this is a Type I error.

Remember, even if the printout shows it, never report  $p = .000$ , because that would suggest there is no possibility of a Type 1 error. Instead report " $p < .001$ "

### Reporting the Results:

The average number of reptiles in the sampled stores ( $M = 9.25$ ,  $S = 4.27$ ) was not significantly different from the hypothesized value of 10,  $t(11) = -.609$ ,  $p = .555$ .

It is important to show the sample mean and standard deviation before presenting the t-test results.

As in the example, be sure to communicate:

- The research hypothesis (if there is one)
- The statistical results
- Whether or not those results support the research hypothesis