Notes:

One Proportion Test in Minitab

Key Learning Points

1. Describe how to setup a test of one proportion in Minitab.
2. Explain how to evaluate test statistics.
3. Explain how to calculate power and appropriate sample sizes.

What is a One Proportion Test?

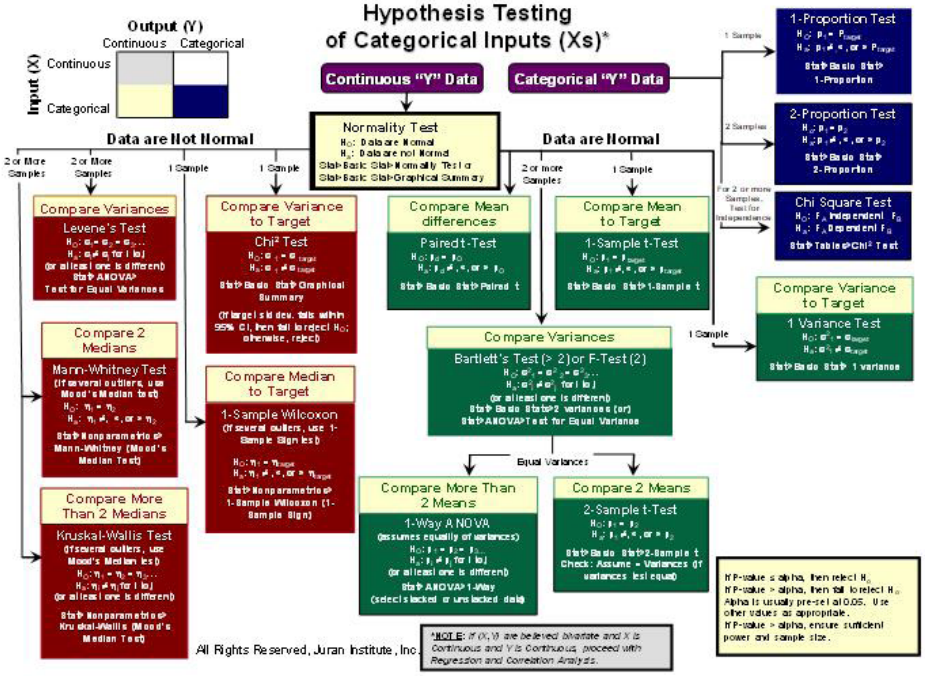
A one proportion test is appropriate when we are comparing a proportion of responses from a binomial variable against a target. A binomial variable is a discrete variable that can take on only two values, such as acceptable and not acceptable.

The one proportion test uses data from a sample to estimate if a similar proportion for the entire population is equal to the target value.

Potential Hypotheses:
Ho: p=target
Ha: p¹target, p<target, p>target

Minitab: Stat > Basic Statistics > 1 Proportion

Notes:



Protecting Against Beta Errors

Power is the ability to detect a true difference.

Power = 1-β (1 - probability of a false negative).

If you fail to reject the null hypothesis, you can calculate Power to determine if your test had an appropriate sample size.

Minitab: Stat > Power and Sample Size

To determine a desired sample size, a power of 0.80 is a conventional standard for accuracy.

When Should One Proportion Tests Be Used?

Use a one proportion test when comparing a discrete Y with only two possible responses against a target.

Pitfalls to Avoid

- Discrete tests require large data sets to detect small differences.
- Be sure to test for power if you fail to reject your null hypothesis.