

CHAPTER OVERVIEW

9: Two-Sample Interference

Chapter 7 discussed methods of hypothesis testing about one-population parameters. Chapter 8 discussed methods of estimating population parameters from one sample using confidence intervals. This chapter will look at methods of confidence intervals and hypothesis testing for two populations. Since there are two populations, there are two random variables, two means or proportions, and two samples (though with paired samples you usually consider there to be one sample with pairs collected). Examples of where you would do this are:

- Testing and estimating the difference in testosterone levels of men before and after they had children (Gettler, McDade, Feranil & Kuzawa, 2011).
- Testing the claim that a diet works by looking at the weight before and after subjects are on the diet.
- Estimating the difference in proportion of those who approve of President Obama in the age group 18 to 26 year olds and the 55 and over age group.

All of these are examples of hypothesis tests or confidence intervals for two populations. The methods to conduct these hypothesis tests and confidence intervals will be explored in this method. As a reminder, all hypothesis tests are the same process. The only thing that changes is the formula that you use. Confidence intervals are also the same process, except that the formula is different.

[9.1: Two Proportions](#)

[9.2: Paired Samples for Two Means](#)

[9.3: Independent Samples for Two Means](#)

[9.4: Which Analysis Should You Conduct?](#)

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