

CHAPTER OVERVIEW

12: Tests of Means

Many, if not most experiments are designed to compare means. The experiment may involve only one sample mean that is to be compared to a specific value. Or the experiment could be testing differences among many different experimental conditions, and the experimenter could be interested in comparing each mean with each of the other means. This chapter covers methods of comparing means in many different experimental situations. The topics covered here in sections E, F, I, and J are typically covered in other texts in a chapter on Analysis of Variance. We prefer to cover them here since they bear no necessary relationship to analysis of variance. As discussed by Wilkinson (1999), it is not logical to consider the procedures in this chapter as tests to be performed subsequent to an analysis of variance. Nor is it logical to call them post-hoc tests as some computer programs do.

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Thumbnail: Student's t-distribution with 2 degrees of freedom. (CC BY-SA 3.0; [IkamusumeFan](#)).

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