

Chapter Project

Analysis of California DDS Expenditures

A government lobbying firm is interested in getting more money directed to people who have special needs. To convince state legislators that more money needs to be diverted to the California Department of Developmental Services, they first must determine which groups of people are in most need of those funds. This firm has hired you to conduct the analysis to answer the questions below.

Data

The data can be found at stat.hawkeslearning.com
Data Sets > California DDS Expenditures.

Part 1

Determine if there is a difference in the average expenditures by gender. Conduct the appropriate hypothesis test using the statistical package of your choice.

- a. Determine the null and alternative hypotheses.
- b. Use a significance level of $\alpha = 0.05$.
- c. Validate the assumptions of the hypothesis test, identify the appropriate test statistic, and compute its value. Include any graphs you use to validate assumptions.
- d. Determine the P -value.
- e. Make a decision to reject or fail to reject H_0 .
- f. State the conclusion in terms of the original question.

Part 2

After seeing your results, the lobbying firm has now decided that they also need to see the breakdown by both gender and age group (the pre-defined age range the consumer falls into).

1. Would this be a Two-Way ANOVA Randomized Block Design or a Two-Way ANOVA Factorial Design?
2. Conduct the appropriate hypothesis tests to see if there is a difference in the average expenditures by both gender and age group and, if appropriate, interaction between these variables.
 - a. Determine the null and alternative hypotheses for each test.
 - b. Use a significance level of $\alpha = 0.05$.
 - c. Assume all assumptions are satisfied for each test, identify the appropriate test statistics, and compute their values.
 - d. Determine the P -value for each test.
 - e. Make decisions to reject or fail to reject H_0 as appropriate.
 - f. State the conclusions in terms of the original question.