

EXERCISE 8.1 Nonprofit Participation in Experimental Financial Assistance Program

Scenario

One hundred (100) statewide nonprofits are asked to participate in an experimental program to deliver financial assistance. The local board of directors of each agency decides whether the organization will participate in the program. Table 8.4 contains the data on each nonprofit's region and whether it will participate in the program.

TABLE 8.4

Database on Participation in Experimental Program

Agency Number	Region of State	Experimental Program	Agency Number	Region of State	Experimental Program
1	Plain	No	51	Mountain	No
2	Plain	No	52	Mountain	No
3	Mountain	No	53	Coast	No
4	Plain	No	54	Mountain	Yes
5	Mountain	Yes	55	Plain	Yes
6	Mountain	No	56	Mountain	No
7	Coast	No	57	Plain	No
8	Coast	No	58	Plain	Yes
9	Coast	No	59	Coast	No
10	Coast	No	60	Coast	Yes
11	Coast	Yes	61	Coast	No
12	Mountain	No	62	Coast	No
13	Plain	Yes	63	Plain	Yes
14	Mountain	Yes	64	Coast	No
15	Coast	No	65	Coast	No
16	Coast	No	66	Coast	Yes
17	Plain	No	67	Coast	No
18	Coast	No	68	Plain	Yes
19	Plain	Yes	69	Coast	Yes
20	Mountain	No	70	Mountain	No
21	Coast	No	71	Plain	No
22	Mountain	No	72	Plain	No
23	Coast	No	73	Coast	Yes
24	Coast	No	74	Plain	No
25	Coast	Yes	75	Plain	No
26	Coast	No	76	Coast	No
27	Coast	No	77	Coast	No
28	Coast	No	78	Coast	No
29	Plain	No	79	Plain	No

TABLE 8.4

Database on Participation in Experimental Program

Agency Number	Region of State	Experimental Program	Agency Number	Region of State	Experimental Program
30	Coast	No	80	Plain	No
31	Coast	No	81	Plain	No
32	Plain	Yes	82	Mountain	No
33	Coast	No	83	Mountain	Yes
34	Coast	Yes	84	Coast	No
35	Plain	No	85	Plain	No
36	Coast	No	86	Plain	No
37	Coast	No	87	Plain	Yes
38	Mountain	No	88	Plain	No
39	Plain	No	89	Coast	No
40	Coast	No	90	Mountain	No
41	Plain	Yes	91	Coast	No
42	Coast	No	92	Mountain	Yes
43	Coast	No	93	Coast	No
44	Mountain	No	94	Plain	No
45	Mountain	No	95	Mountain	No
46	Coast	No	96	Coast	Yes
47	Coast	No	97	Coast	No
48	Coast	No	98	Plain	No
49	Plain	No	99	Coast	No
50	Mountain	Yes	100	Coast	No

Section A: Getting Started

- Organize the data in a contingency table with three columns and two rows. Make Region of State the independent variable and Experimental Welfare Program the dependent variable.
 - Tally the number of agencies in each region that are in the program and the number that are not. Report the number in each column. Fully label the table.
 - In a second table, calculate the percentage of organizations in each region that are in the program and the percentage that are not. Enter only the percentages in the cells of the second table with the number of cases in each column at the head of the column. Fully label the table.
 - What can you tell the state director about the relationship between the decision to participate in the Experimental Program and Region of the State?
- What percentage of the agencies are in each region of the state?
- What percentage of the agencies will participate in the experimental program? What percentage will not? What percentage of the agencies in the Plains region are participating?

4. Calculate and report the percentage difference between the percent agencies in the Mountains and the percentage in the Plains that are participating in the experimental program.

ANSWERS TO SELF-QUIZ QUESTIONS: VI

...the same as sampling error.) ...accuracy?

EXERCISE 9.2 Attitudes toward Corporal Punishment: Are Men and Women Different?

Scenario

A child care organization commissioned a random survey to identify attitudes toward child-raising. A topic of interest was the difference between the beliefs of men and women regarding discipline. The follow table reports data on men's and women's attitudes toward spanking.

Attitudes toward Spanking by Respondent Gender

Favor Spanking	Male	Female
Strongly	115	107
Somewhat	212	221
Oppose	73	109
Strongly oppose	18	42

Chi-square = 13.1, degrees of freedom = 3, significance = 0.004.

Section A: Getting Started

1. State the alternative hypothesis and the null hypothesis that could be tested with the data in this table.
2. Identify the independent and the dependent variables.
3. Calculate percentages and include in them in a table. Write a sentence to describe the relationship shown in the table. Do the data in the table support or contradict your hypothesis? Explain.
4. Based on the chi-square evidence what would you do, that is, would you reject the null hypothesis?

Section B: Small Group Exercise

1. What are the implications of the findings presented in exercise 9.2? Do you consider the table an interesting observation, a question for further study, or something else?
2. A finding of statistical significance can be persuasive. What other evidence should the child care organization present so that parents and other stakeholders are able to evaluate the findings?

EXERCISE 9.3 What Is Going On in the Schools?**Scenario**

A community action group has heard complaints that African American and Hispanic students are more likely to be suspended (either in-school or out-of-school) than other students. The superintendent of schools offers to review the files of students in grades 9–12. The school system has 39,000 students in grades 9–12: 58 percent African American, 12 percent Hispanic, and 25 percent White.

Section A: Getting Started

1. What target population would you recommend the superintendent use? Why did you recommend this population? (Note that target population refers to the specific population that the data will represent.)
2. State the alternative hypothesis and the null hypothesis the superintendent should test.
3. If the superintendent tests the hypothesis and makes a Type I error, explain what has happened.

4. If the superintendent tests the hypothesis and makes a Type II error, explain what has happened.
5. Should the superintendent be more concerned about a Type I error or a Type II error? Justify your answer.
6. The superintendent originally set $\alpha = 0.05$. How can she further decrease the probability of a Type I error? How can she further decrease the probability of a Type II error?

Section B: Small Group Exercise

1. Decide on a target population and suggest a sample size for the superintendent's study. Justify your recommendation.
2. Discuss what actions the superintendent might take if the null hypothesis is rejected.
3. List arguments for the position
 - a. Committing a Type I error is the more serious concern.
 - b. Committing a Type II error is the more serious concern.
4. Based on what you have observed in Exercises 9.2 and 9.3 draft a memo "What you want to know about statistical significance: A guide for citizens."

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