

Testing Independence vs. Testing Homogeneity

Math 445, Spring 2017

Study 1

(Chapter 3, Exercise 13)

The California Department of Game and Fish published a report on a study of jack mackerel fish from three different regions off the waters of California: near Guadalupe Island and Cedros Island off Baja California, and near San Clemente Island in southern California (Gregory and Tasto, 1976). One characteristic of the fish that they were interested in was the number of rays on the second dorsal fin; in particular, is the number of rays different for fish from the different regions?

Habitat	≥ 36	35	34	33	32	≤ 31
Guadalupe Island	14	30	42	78	33	14
Cedros Island	11	28	53	66	27	9
San Clemente Island	10	17	61	53	22	10

(a) Does this setting call for a test of independence or a test of homogeneity? Why?

(b) Write down the appropriate hypothesis for the test you specified in part (a).

Study 2

(Chapter 3, Exercise 14)

A researcher in Hong Kong conducted a study on children's perception of advertising brands on television (Chan, 2008). For one part of the study, she analyzed surveys sent to 1481 children from rural areas of Mainland China and received responses from 726 boys and 755 girls. The responses to the question about their feeling toward TV ads are summarized below:

Sex	Like very much	Like	Neither	Dislike	Dislike very much
Boys	180	260	137	96	52
Girls	210	266	145	85	49

(a) Does this setting call for a test of independence or a test of homogeneity? Why?

(b) Write down the appropriate hypothesis for the test you specified in part (a).