

AP Statistics

Test of Homogeneity

As a college business major, you are presently taking the only required statistics course for your degree. You are trying to impress your teacher with how much you understand about a new topic: Test of Homogeneity using the Chi-Square Distribution. You must use data from the story *What Makes a Good Teacher* from the Data and Story Library -DASL web site available through the BB&N AP Stats web site. This data was obtained as follows:

"A survey of business students at nine colleges in the United States was taken to determine the instructor behaviors that the students feel are more likely to contribute to their academic success." *DASL Website, What Makes a Good Teacher*

You must to perform a Test of Homogeneity to compare student response on four behaviors.

Data

You must use data from the story *What Makes a Good Teacher* from the Data and Story Library-DASL web site.

- Read the abstract. (attached)
- Read the description of the data. (attached)
- Select exactly four behaviors that appear to have **similar numbers of responses** for the three different criteria for academic success but which produce a statistically significant result. In this way the test you perform may not be too extreme in any one direction.

Format and Style

The report must have the following attributes:

- Written sections must be word processed.
- It may not be longer than two pages for any reason.

The Report

The report should have each of the following sections in the order given:

A. Analysis and Presentation

In an interesting and professional manner, demonstrate to your teacher that you have gained understanding of the important concepts involved with Chapter 8 of BPS: Inference for Two-Way Tables. Apply what you have learned to the data you have chosen.

B. Hand Computations

Impress your teacher with your presentation of a hand computation of the Chi-Square Test you performed and reported in the Section A. Use your TI to find the p-value from the chi-square statistic (using the χ^2 distribution, not the χ^2 —Test). A table of "components of χ^2 " for each cell should be included at the appropriate time in your computation.

Working with others

You may discuss any topic with other students. However, only you may select and collect the data, do the calculations, and write the report.

Due DATE

Due at the start of class on Friday April 9. The report should simply be two pages stapled together. No cover page or binder is expected. It should be ready to turn it in as you come into the classroom (rather than hoping to find a stapler after you arrive). Points will be deducted for not following these guidelines.

What makes a good teacher – Abstract

A survey of business students at nine colleges in the United States was taken to determine the instructor behaviors that students believe are more likely to contribute to their academic success. The researchers performed a pilot study from 1989-1991 in which 215 undergraduate students enrolled in business classes were asked to list the instructor classroom behaviors they felt were important to their academic success.

A final questionnaire consisting of 51 instructor behaviors was used. A response of "important," "neither important nor unimportant," or "not important" was required for each behavior. Demographic data were also collected. This data set consists of 735 students from nine business colleges randomly selected from the 1990/1991 AACSB Handbook.

Description

A survey of business students at nine colleges in the United States was taken to determine the instructor behavior: 215 undergraduate students enrolled in business classes were asked to list the instructor classroom behaviors they A questionnaire consisting of 51 instructor behaviors was studied. The data are for 735 students from nine busines

Data

Behavior	IM	NU	NI	Notes
Provide help willingly	705	22	8	
Listen attentively to st	704	18	13	1. Behavior: The 51 instructor behaviors on t
Treat students equally	695	33	7	2. IM: Number of students who responded "I
Offer words of encour	694	27	14	3. NU: Number of students who responded "N
Set realistic deadlines	693	30	12	4. NI: Number of students who responded "N
Announce tests in adv	684	37	14	
Grade and return test:	683	42	10	
Present information ir	671	50	14	
Use real world exampl	666	53	16	
Be professional in spei	632	79	24	
Involve students in cla	630	81	24	
Allow time for questio	611	94	30	
Relate teaching to car	609	72	54	
Give constructive criti	609	85	41	
Provide a break in a tv	607	104	24	

Note: To view the entire chart, double click the chart and that will start MS Excel