

Final Exam – Take Home

Consumer Comparison of Beef, Turkey, and Emu Meat

The data for your project comes from a nutritional study conducted at Ohio University during 1997-1998. Eighty four subjects completed the study in which subjects evaluated variables describing beef, turkey, and emu. Each of the three meats was prepared with taco flavoring and subjects were asked to rate the appearance, tenderness, flavor, texture, aftertaste, and overall acceptability. Cleansing of the palate after each taste with tepid (room temperature) water was required. The raters used a scale that had nine choices: 1=like extremely; 2= like very much; 3=like moderately; 4=like slightly; 5=neither like nor dislike; 6=dislike slightly; 7=dislike moderately; 8= dislike very much; and 9=dislike extremely.

A portion of that data appears in the data file **emu1a.xls** which is available at <http://csuohio.edu/holcombj/mth147/finalexam.htm>

Variable guide:

subject	An identifying number to keep track of subjects
gender	1=male, 2=female
age	Age in years
educlev	1=no college, 2=some college, 3=Bachelors Degree, 4=Post-Bachelors
income	1=<\$10,000; 2=10,000-14999; 3=15,000-24,999; 4=25,000-34,999 5=35,000-49999, 6=50,000-74999 7=>=75,0000
areagrow	1=rural, 2=urban
flavbeef	Beef Flavor Rating
flavemu	Emu Flavor Rating
flavturk	Turkey Flavor Rating
likeemu	0=no, 1=yes
likebeef	0=no, 1=yes
liketurkey	0=no, 1=yes
count	Just a variable of 1's
bins	Bins for Histogram on Ratings

The variables **likeemu**, **likebeef**, and **liketurkey** are calculated from their respective flavor variables. If the flavor score was 1-4, then the like variable is 1 (yes), and if the score was 5-9, the like variable is 0 (no).

For the following tests of Hypothesis, be sure to state the hypotheses, the test statistic, the P-value or the P-value estimate, and your conclusion.

1. Assume that the subjects are a random sample of consumers. Is there sufficient evidence to conclude that after the tasting the emu meat, the percentage of subjects who liked emu (**likeemu**) meat is over 40%?
2. Is there sufficient evidence to conclude that after the tasting the turkey meat, the percentage of subjects who liked turkey (**liketurkey**) meat is over 75%?
3. Determine if gender and liking emu meat are independent.
4. Treat **flavemu**, as a continuous variable. Create a scatterplot of **age** predicting **flavemu**. Do you think **age** is useful in predicting **flavemu**? Perform a formal test of hypotheses. What is your conclusion?

Write a paragraph that describes your conclusions. Also, perform some kind of a test of hypothesis that I have not proposed. This could be a test involving a mean, a proportion, independence, or it could involve a regression analysis. Clearly state your null, alternative, test statistic, P-value, and conclusion.

Answers:

Sum of count		
likeemu		Total
	0	47
	1	36
Grand Total		83

phat 0.43373494
z 0.627355
pvalue 0.26521322

Sum of count		
liketurkey		Total
	0	13
	1	70
Grand Total		83

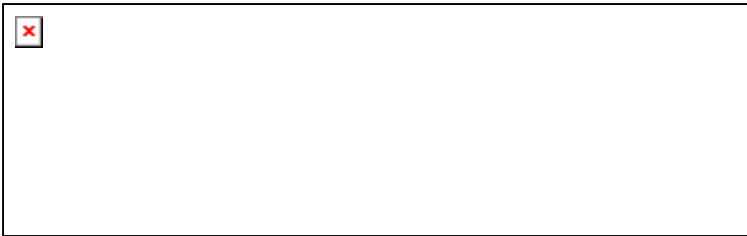
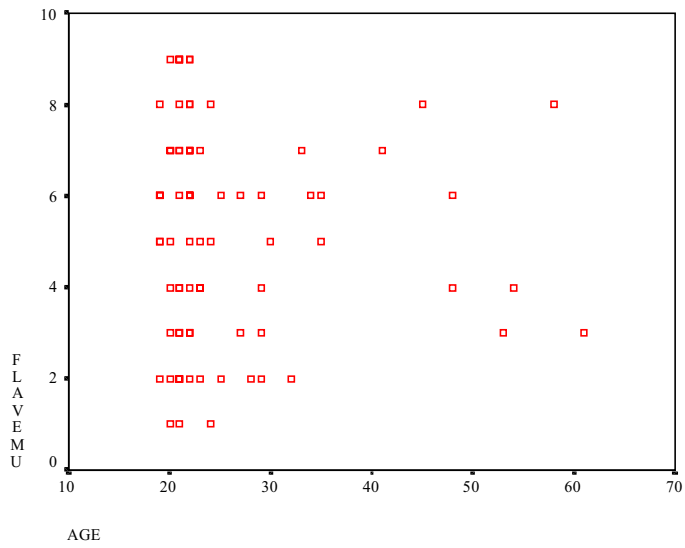
phat 0.8434
z 1.9645
pvalue 0.0247

Rows are levels of gender
Columns are levels oflikeemu
No Selector

		0	1	total
	1	19	12	31
	2	28	24	52
total		47	36	83

table contents:
Count

Chi-Square 0.438
df 1
p-value 0.508



Coefficients ^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	5.025	.750		6.696	.000
	AGE	-.0003E-04	.027	-.004	-.036	.972

a. Dependent Variable: FLAVEMU