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 three 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 **emu6a.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
overbeef	Beef Overall Rating
overemu	Emu Overall Rating
overturk	Turkey Overall Rating
overemu	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 overall variables. If the overall 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 meet, the percentage of subjects who liked emu (**likeeumu**) meat is over 35%?
2. Determine if there is sufficient evidence to conclude that education level (**educlev)** and **likeemu** are independent.
3. Determine if gender and liking emu meat are independent.
4. Treat **overemu,** as a continuous variable. Create a scatterplot of **age** predicting **overemu**. Do you think **age** is useful in predicting **overemu**? 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:

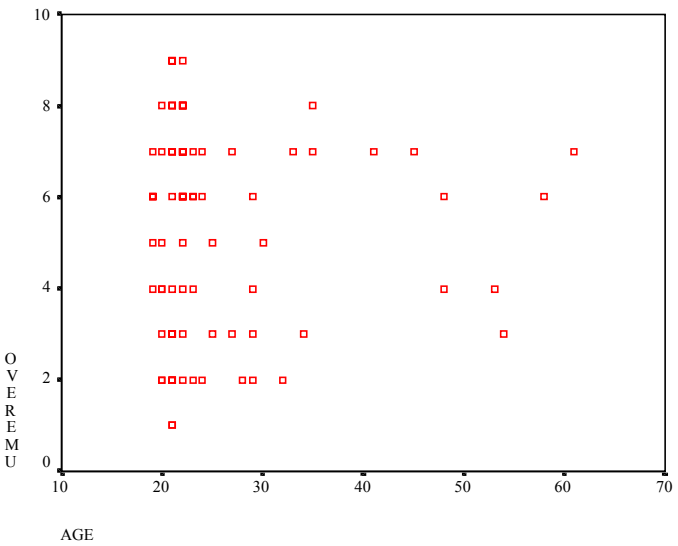
Sum of count	likeemu		
gender	0	1	Grand Total
1	18	13	31
2	31	21	52
Grand Total	49	34	83

phat	0.4096386
z	1.1391357
pvalue	0.1273233

Chi-Square	0.0193
df	1
p-value	0.889

Sum of count	likeemu		
educlev	0	1	Grand Total
2	30	19	49
3	9	6	15
4	10	9	19
Grand Total	49	34	83

Chi-Square	0.425
df	2
p-value	0.809



Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.022[a]	.000	-.012	2.19

a. Predictors: (Constant), AGE

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	5.012	.710		7.060	.000
	AGE	5.183E-03	.026	.022	.199	.843

a. Dependent Variable: OVEREMU