Exam II – 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 **emu2.xls** which is available at http://csuohio.edu/holcombj/mth147/exam2.htm Note that some variables may not be used for this assignment, but may be used for the take-home Final Examination.

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
texbeef	Beef Texture Rating
texemu	Emu Texture Rating
texturk	Turkey Texture Rating
likeemu	0=no, 1=yes
count	Just a variable of 1's
bins	Bins for Histogram on Ratings

The main purpose of this study was to determine if emu meat – which is very low in fat – would be judged by potential consumers to have similar characteristics as more familiar and popular meats such as beef and turkey. My colleague, nutritionist Dr. David Holben, wanted to determine if flavoring the emu with taco meat would mask the "gamey" flavor of the meat that had been reported in previous studies. To even out conditions, all three meats were cooked in taco seasoning and water.

Begin your report by providing a summary of the discrete variables of **gender, educlev, income, areagrow,** and **likeemu** (raw numbers and percents). Note that **likeemu** is a variable that indicates if a subject gave the emu meat texture a favorable rating (a Rating score of 1-4, 0=no and 1=yes). Treat the remaining variables of **age, texbeef, texemu,** and **texturk** as continuous variables and create a summary of these variables (5 number summary and histogram). For the variables for texture, use the bins category already created for you. (Note for age, you will need to create your own bins). Describe the shape of the age histogram and determine if the mean or the median is the better measure of center.

Create a 2x2 contingency table of **gender** vs. **likeemu.** Let A be the event of being a man, B be the event of being a woman, and C the event of Yes for liking the texture of emu meat (**likeemu=1)**. Determine the following:

1. P(A) 2. P(B) 3. P(C)

4. $P(A \cap C)$ 5. $P(B \cup C)$

6. P(C|A) 7. P(C|B)

Did women or men like emu better? How did you decide? Was this surprising?

From the summary table and viewing the histograms for texture that you created earlier, what is your conclusion concerning emu meat? Do you believe the subjects rated it with similar scores as beef and turkey? Do you think mass marketing of emu meat would be worthwhile? Why or why not? (This paragraph should be at least five sentences.)

Answers:

GENDER

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	31	37.3	37.3	37.3
	2	52	62.7	62.7	100.0
	Total	83	100.0	100.0	

EDUCLEV

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2	49	59.0	59.0	59.0
	3	15	18.1	18.1	77.1
	4	19	22.9	22.9	100.0
	Total	83	100.0	100.0	

INCOME

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	7	8.4	8.4	8.4
	2	3	3.6	3.6	12.0
	3	2	2.4	2.4	14.5
	4	5	6.0	6.0	20.5
	5	14	16.9	16.9	37.3
	6	24	28.9	28.9	66.3
	7	28	33.7	33.7	100.0
	Total	83	100.0	100.0	

AREAGROW

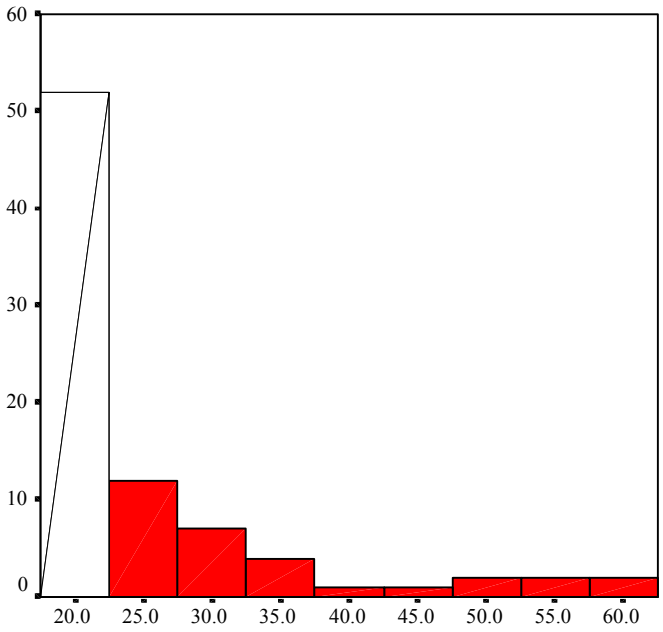
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	41	49.4	49.4	49.4
	2	42	50.6	50.6	100.0
	Total	83	100.0	100.0	

LIKEEMU

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	47	56.6	56.6	56.6
	1	36	43.4	43.4	100.0
	Total	83	100.0	100.0	

Descriptives

			Statistic	Std. Error
AGE	Mean		25.67	1.02
	95% Confidence Interval for Mean	Lower Bound	23.64	
		Upper Bound	27.71	
	5% Trimmed Mean		24.35	
	Median		22.00	
	Variance		86.832	
	Std. Deviation		9.32	
	Minimum		19	
	Maximum		61	
	Range		42	
	Interquartile Range		6.00	
	Skewness		2.328	.264
	Kurtosis		4.895	.523
TEXBEEF	Mean		3.63	.20
	95% Confidence Interval for Mean	Lower Bound	3.22	
		Upper Bound	4.03	
	5% Trimmed Mean		3.52	
	Median		3.00	
	Variance		3.432	
	Std. Deviation		1.85	
	Minimum		1	
	Maximum		9	
	Range		8	
	Interquartile Range		3.00	
	Skewness		.909	.264
	Kurtosis		.219	.523
TEXEMU	Mean		5.58	.24
	95% Confidence Interval for Mean	Lower Bound	5.10	
		Upper Bound	6.06	
	5% Trimmed Mean		5.59	
	Median		6.00	
	Variance		4.808	
	Std. Deviation		2.19	
	Minimum		2	
	Maximum		9	
	Range		7	
	Interquartile Range		3.00	
	Skewness		-.069	.264
	Kurtosis		-1.079	.523
TEXTURK	Mean		3.25	.21
	95% Confidence Interval for Mean	Lower Bound	2.83	
		Upper Bound	3.68	
	5% Trimmed Mean		3.12	
	Median		3.00	
	Variance		3.752	
	Std. Deviation		1.94	
	Minimum		1	
	Maximum		8	
	Range		7	
	Interquartile Range		2.00	
	Skewness		.973	.264
	Kurtosis		.158	.523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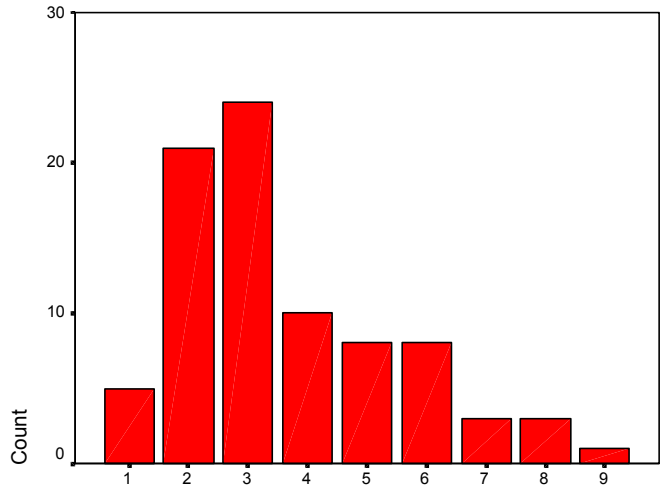
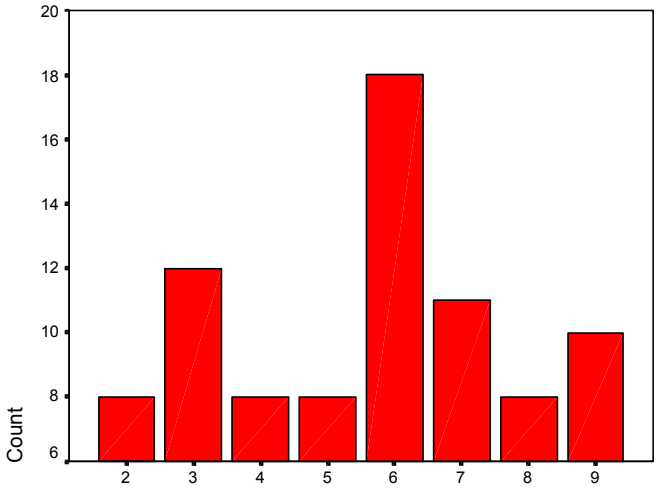
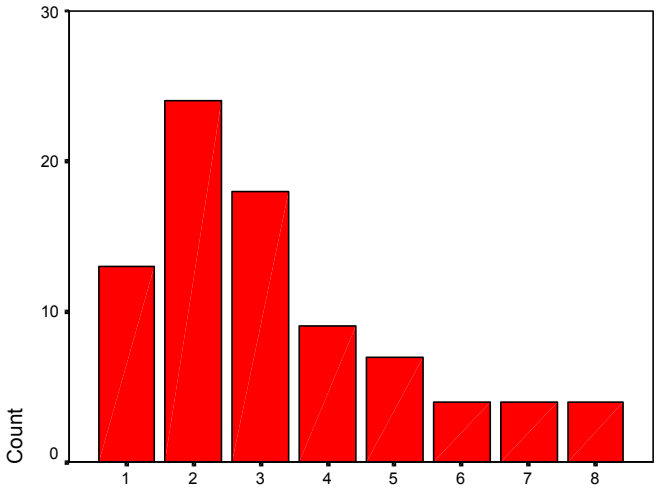
50
40
30
20
10
0
20.0
25.0
30.0
35.0
40.0
45.0
50.0
55.0
60.0
Std. Dev = 9.32
Mean = 25.7
N = 83.00

AGE


30
20
10
0
Count
1
2
3
4
5
6
7
8
9

TEXBEEF





GENDER * LIKEEMU Crosstabulation

Count

		LIKEEMU		Total
		0	1	
GENDER	1	21	10	31
	2	34	18	52
Total		55	28	83