Project Chapter 3 – Categorical Relationships

Directions for Online Classes: *This will be an individual project. Each student will chose two columns of categorical data to analyze from the "Math 075 Survey data Fall 2015" and create a poster summarizing their findings. Students can chose two from the following columns of data: Tattoo, Texting While Driving, Favorite Social Media, Transportation to School, Car Accident, Cigarettes, Eat Breakfast, Glasses/Contacts, High School in Santa Clarita, Living with parents*

After submitting the project to their instructor, students will then go to the "Chapter 3 Project Class Discussion" in Canvas and discuss their findings with other students in the class.

The Individual Poster Should Have

- **The poster does not have to be extremely large.**
- **Your first and last name on the poster**
- **What two columns of data did you pick?**
- **Explain why this data is important or interesting to you?**
- **Copy and paste the two columns of data next to each other in a new spreadsheet. Then copy both columns together. Go to StatKey at www.lock5stat.com and click on "Two Categorical Variables" under the "Descriptive Statistics and Graphs" menu. Then paste the two columns of data together under "edit data". Remember to check the box that says "raw data" before pushing "OK". Also check "header row" if data has a title.**
- **Copy the "Counts Table" table from StatKey onto your poster in large letters. (Label this table as your "Contingency Table".) Pick out a few counts on this table and explain them.**
- **Draw the stacked bar chart onto your poster.**
- **Click the "Overall" button where it says Proportions in StatKey. Copy the "Overall Proportions Table" table from StatKey onto your poster in large letters. (Label this table as your "Overall Proportions Table".) Pick out a proportion under totals. Explain what variable the computer is finding the marginal proportion of and explain how the computer calculated it. Pick out one proportion in the middle of the table. Explain what two variables the computer is finding the "AND" joint proportion for and explain how the computer calculated it.**
- **Click the "Row" button where it says Proportions in StatKey. Copy the "Row Proportions Table" table from StatKey onto your poster in large letters. (Label this table as your "Conditional Row Proportions Table".) In the "Row proportion table", compare proportions that are in the same column. Do they look close or significantly different? What does this indicate about whether or not the two columns of data you chose are related or not?**
- **Decorate Poster**

Now take a picture of your poster project and submit the picture to your instructor in Canvas.

After submitting the picture of the poster, go to the discussion menu in Canvas and complete the "Chapter 3 Project Discussion". You will be discussing your findings with other students in the class.

Directions for Face to Face Classes: The class will be broken up into groups of three or four. Each group will pick a team name and one of the following pairs of categorical variables from the Math 075 Survey Data Fall 2015 to study. Each group should have a different pair of variables to study.

Group#	Team Name	Categorical Variable A	Categorical Variable B
1		Political Party	Hair Color
2		Smoking	Political Party
3		Texting/Driving	Car Accidents
4		Smoking	Transportation
5		Gender	Political Party
6		Breakfast	Fixed Intelligence
7		Hair Color	Gender
8		Fixed Intelligence	Political Party
9		Tattoo	Gender
10		Political Party	Tattoo
11		Tattoo	Hair Color
12		Smoking	Tattoo

The Group Poster Should Have

- **The poster does not have to be extremely large.**
- **Your first and last name of everyone in your group should be on the poster.**
- **Which two columns of categorical data did you chose?**
- **Explain why this data is important or interesting to your group?**
- **Copy and paste the two columns of data next to each other in a new spreadsheet. Then copy both columns together. Go to StatKey at www.lock5stat.com and click on "Two Categorical Variables" under the "Descriptive Statistics and Graphs" menu. Then paste the two columns of data together under "edit data". Remember to check the box that says "raw data" before pushing "OK". Also check "header row" if data has a title.**
- **Copy the "Counts Table" table from StatKey onto your poster in large letters. (Label this table as your "Contingency Table".) Pick out a few counts on this table and explain them.**
- **Draw the stacked bar chart onto your poster.**
- **Click the "Overall" button where it says Proportions in StatKey. Copy the "Overall Proportions Table" table from StatKey onto your poster in large letters. (Label this table as your "Overall Proportions Table".) Pick out a proportion under totals. Explain what variable the computer is finding the marginal proportion of and explain how the computer calculated it. Pick out one proportion in the middle of the table. Explain what two variables the computer is finding the "AND" joint proportion for and explain how the computer calculated it.**
- **Click the "Row" button where it says Proportions in StatKey. Copy the "Row Proportions Table" table from StatKey onto your poster in large letters. (Label this table as your "Conditional Row Proportions Table".) In the "Row proportion table", compare proportions that are in the same column. Do they look close or significantly different? What does this indicate about whether or not the two columns of data you chose are related or not?**
- **Decorate Poster**

Presentation Directions

Each group will put their poster up around the room. Chose one person from the group to present first. Everyone else in the class who is not presenting will find a poster that is not their own. Then rotate and have another person from the group present. Keep rotating till each person in every group has presented. Each presentation should take a few minutes. Make sure audience rotates to new posters as well.
