Peter Dolan & Hyatt Sbar
3/3/2023
INTR-Project

Washington and Lee University has 70% of its student body affiliated with a Greek organization. Because a plethora of students actively participate in Greek life, drinking games run rampant. We want to know what drinking games W&L students are familiar with, and what drinking games W&L students have played themselves.

The first question is just asking what they identify as- “male, female, or other” in order to get a small demographic profile.

1.) On a scale of 1-7 (1 being “never heard of before” and 7 being “very familiar with”) how familiar are you with the drinking game: “3-man”

2.) On a scale of 1-7 (1 being “never heard of before” and 7 being “very familiar with”) how familiar are you with the drinking game: “beer pong”

3.) On a scale of 1-7 (1 being “never heard of before” and 7 being “very familiar with”) how familiar are you with the drinking game: “beer ball”

4.) On a scale of 1-7 (1 being “never heard of before” and 7 being “very familiar with”) how familiar are you with the drinking game: “stack cup”

5.) On a scale of 1-7 (1 being “never heard of before” and 7 being “very familiar with”) how familiar are you with the drinking game: “snappa”

6.) On a scale of 1-7 (1 being “never heard of before” and 7 being “very familiar with”) how familiar are you with the drinking game: “beer dye”

7.) On a scale of 1-7 (1 being “never heard of before” and 7 being “very familiar with”) how familiar are you with the drinking game: “baseball”

8.) Rank all the above games in order from “least favorite” to “most favorite”.

9.) Rank all the above games in order from “played the most” to “played the least”.

10.) What motivated you to pick a certain game as your favorite?
A.) your choice results in fastest intoxication
B.) your choice is the most fun to play with friends
C.) your choice is best for casual drinking over a long period of time
D.) your choice is the least boring/ fastest pace

1.) justify why you want to include the questions and reflect on the potential biases and limitations of said questions:

We elected to include the questions because firstly we wanted a general understanding of who was taking our survey in terms of sex and gender. After that, we wanted to know what kind of familiarity participants had with various drinking games. In order to accurately portray feelings towards individual games, we used the "Likert scale", which is a 1-7 rating system that we applied to familiarity. Then, we included two questions in order to gauge which of the drinking games was the participants least favorite and most favorite as well as what they have played the most versus played the least. The reason we included this question was to see comparatively between drinking games which seemed to be the most popular among W&L students. In terms of biases and limitations, we believe that an issue could arise with the specificity of demographic. For example, we could have asked age, biological sex, gender, fraternity, sorority, race, etc. These would have furthered our data demographically. We also feared a potential response bias, which is basically people picking answers based on social pressures if they were perhaps taking the survey with a friend. We also feared a significant lack of female participation (just like our parties at Sigma Chi) which could skew our data due to the inequality. The very nature of drinking games appeals to a predominately male population, which could mean that men are more knowledgeable about such things than women, which could lead to incongruencies in our total data frame. These are some of the potential biases and limitations of our questions, but for the most part, they will answer the necessary questions and provide us with data.

2.) discuss the population, the ideal sampling frame, and the ideal sampling process (that is, imagine how you can get a representative sample in an ideal situation, even though you will use a convenient sample), justify your selections, and reflect on the potential biases and limitations in the imagined ideal sampling process:

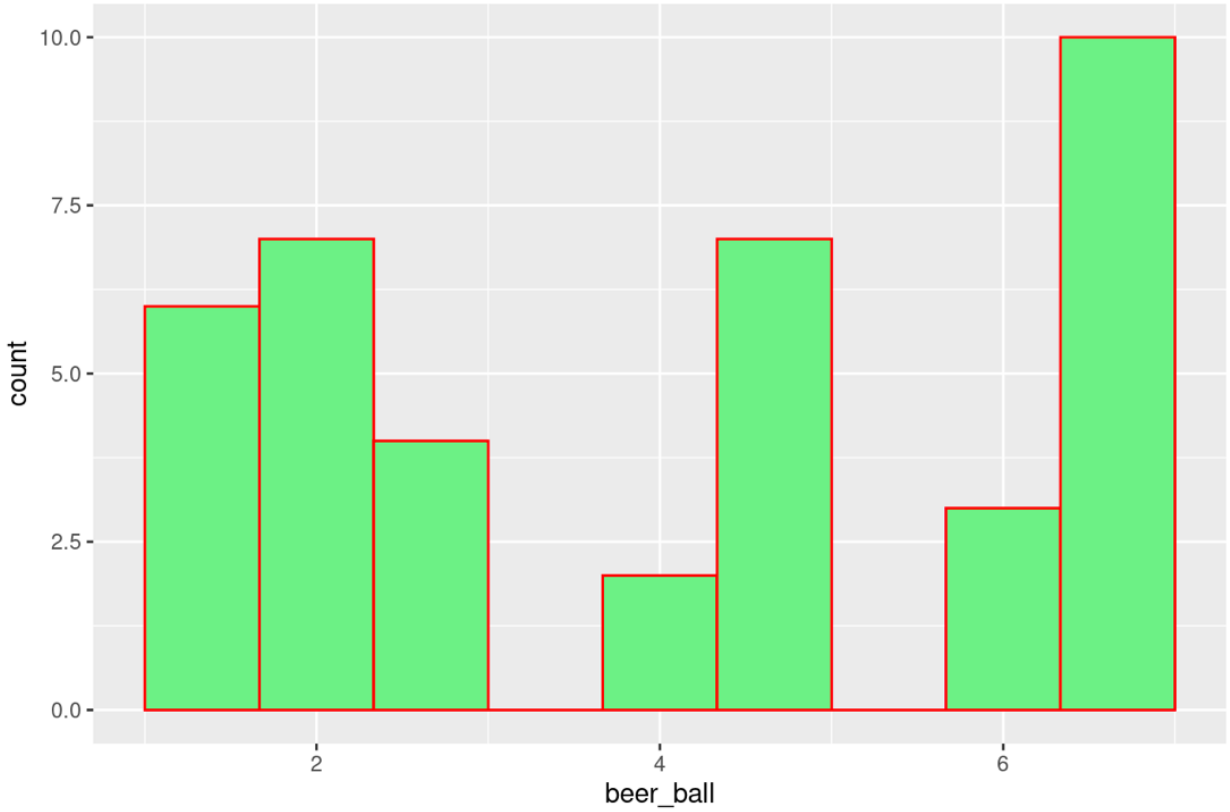
The population of our study involves as many members as possible of the W&L student body. We managed to have our surveys link flow through several fraternity and sorority pledge class group chats. The ideal sampling frame would be from multiple universities and multiple different Greek organizations within each university in order to diversify geographically and demographically. The ideal sampling process would involve individual surveys taken alone in order to remove any confirmation bias or response bias. For the sampling method, we used a semi-random method because we sent it to multiple group chats of random people, but those random people were all W&L students, so basically a simplified random sampling method. An ideal sampling frame and process would be a stratified sampling method that divided subjects into subgroups per university called strata, and each one of these strata would then be randomly sampled for more accurate data. The most efficient way to do this would be to have mail-in surveys that are only allowed to be taken alone in order to get rid of confirmation bias of peers as well as potential response bias.

We looked at the quantitative data for the beer ball question due to the plethora of variety in answers received for that category.
The question was as follows: On a scale of 1-7 (1 being “never heard of before” and 7 being “very familiar with”) how familiar are you with the drinking game: “beer ball”

The mean of answers was 4.18 out of 7
The median was 5 out of 7
The Range is 1 of the 7 possible integers
The Standard Deviation of answers is 2.26

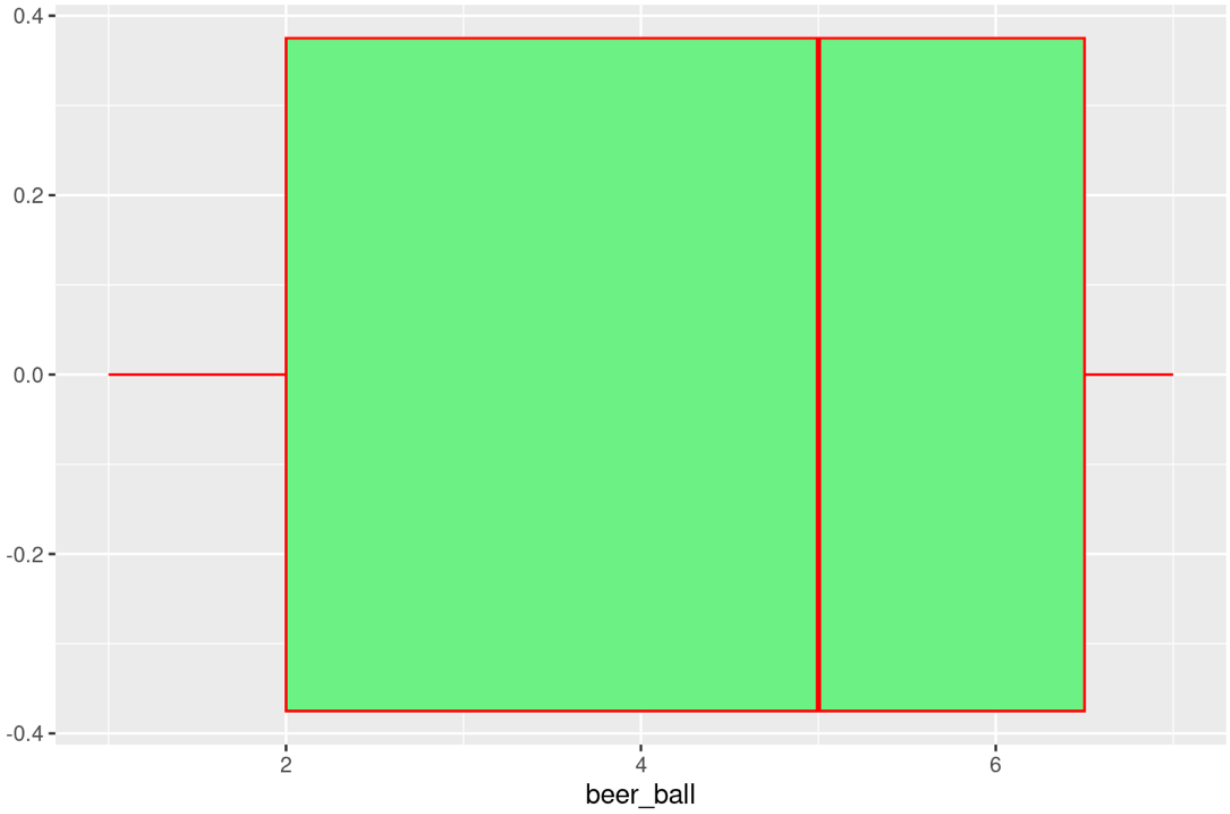
Confidence Interval test of 95% confidence resulted in a t value of 11.559, with 38 degrees of freedom.
The confidence interval landed between 3.447532 and 4.911443, meaning there was a 95% chance that the answer was between these two numbers. The test also returned sample estimates of a mean value of 4.18 which lines up with the mean value calculated above.

Below are graphs of the beer ball data:



This histogram shows the number of votes on the y axis and the scale of 1-7 on the x axis

Our beer ball box plot data



Categorical data:
Our first categorical variable looks at the rankings of most played drinking games.

With the highest count for votes for most popular drinking game was beer pong with a vote percent of 79.49% of votes.

"43.59% is the proportion of people who voted snappa the second most common drinking game"

"46.15% is the proportion of people who voted beer dye the third most common drinking game"

"28.21% is the proportion of people who voted stack cup the fourth most common drinking game"

"38.46% is the proportion of people who voted 3-man the fifth most common drinking game"

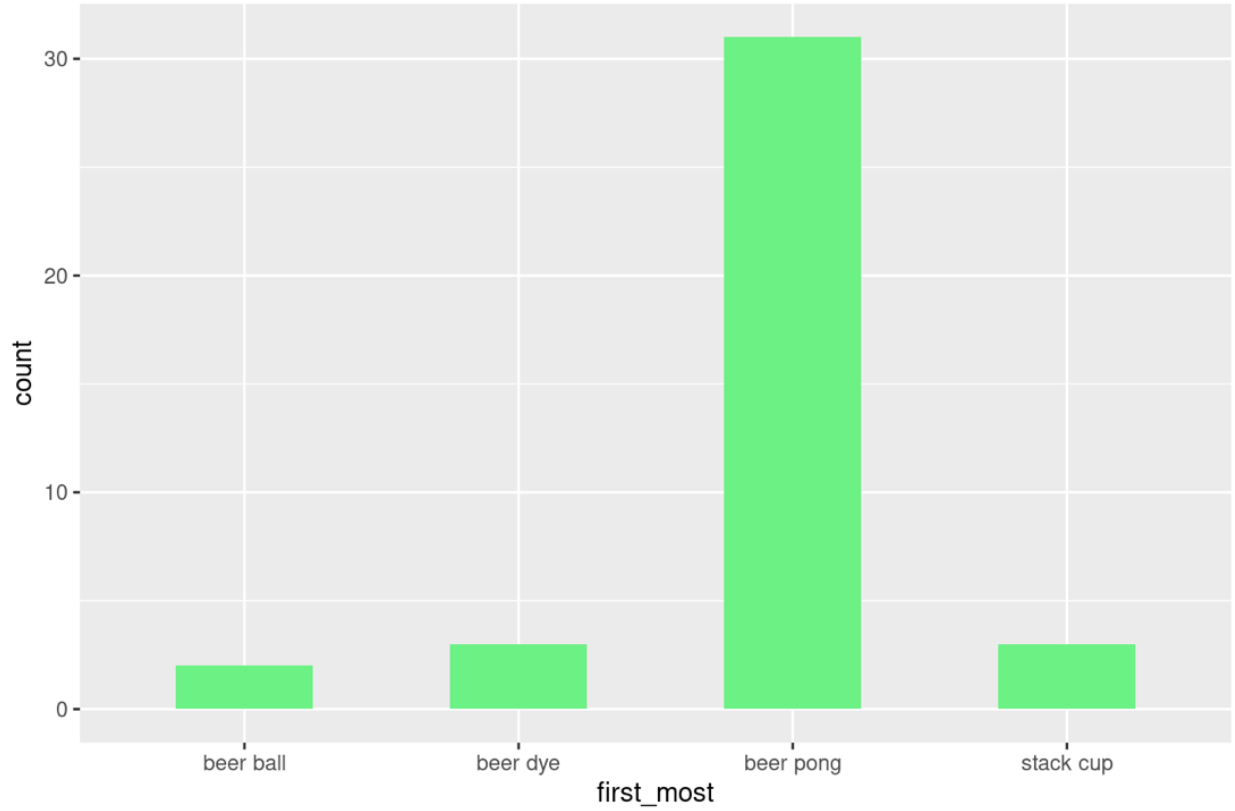
"56.41% is the proportion of people who voted baseball the sixth most common drinking game"

"66.67% is the proportion of people who voted baseball the seventh most common drinking game"

*Each proportion is taken out of all 39 votes. Votes were performed on a basis of ranking each game 1-7.

Confidence Interval for beer pong, the most popular drinking game:
The 95% confidence interval is between 0.662 and 0.918

More Graphs:

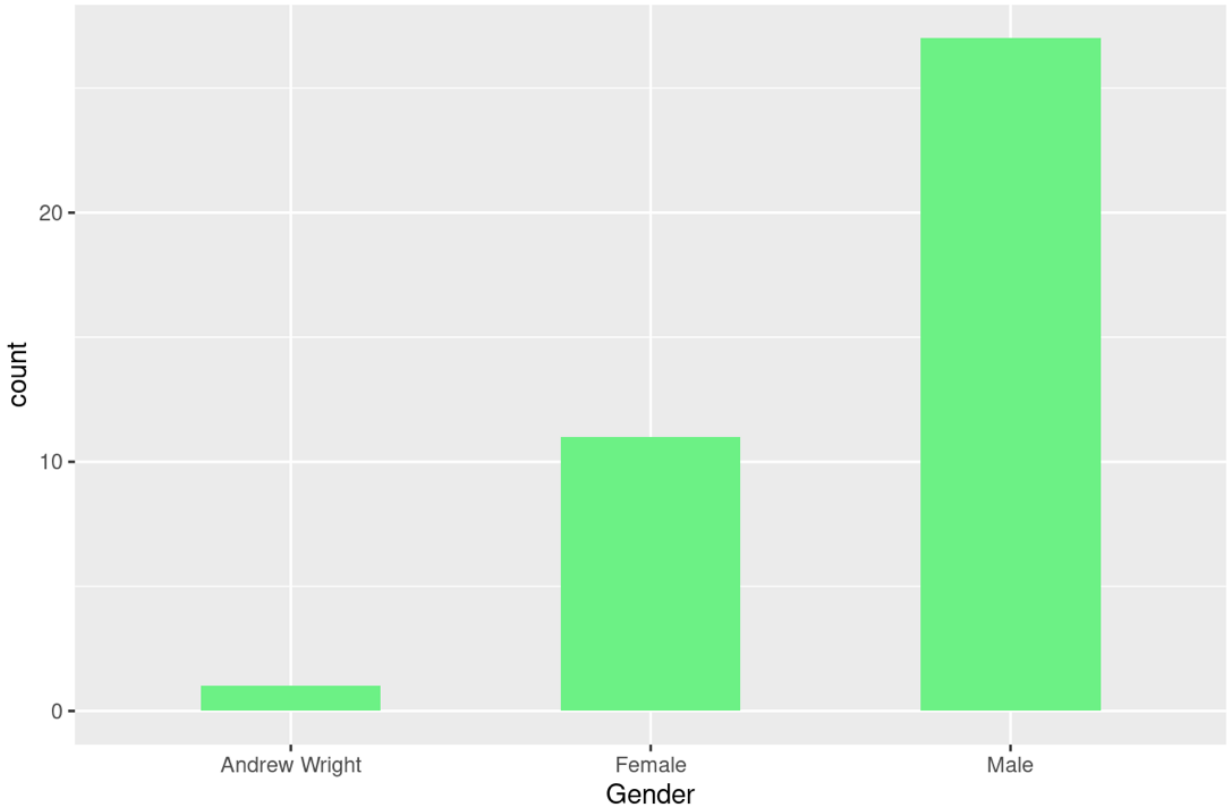


Barplot with the vote count for most popular drinking game on the y axis and game type on the x axis

Categorical breakdown of gender:
28.2051282051282 percent of females took the survey, 69.2307692307692 percent of males took the survey.

Also, 2.56410256410256 percent of people who identify as Andrew Wright

Boxplot of the gender data:



In summary, beer balls had the largest variety of answers with a standard deviation of 2.26, a mean of 4.18, a median of 5, and a range of 1. Each of these numbers was calculated off the seven-point scale that was used to gauge voters' opinions on their favorite drinking games. The mean value of 4.18 falls between 3.45 and 4.91 in a 95% confidence interval. Meaning, the mean value is 4.18 and likely between said intervals. Looking now at the categorical variable of most played drinking games beer pong was voted the most played drinking game, with 79.49% of votes in that category going to beer pong. The other rankings are as follows: 43.59% is the proportion of people who voted snappa/seated beer dye the second most common drinking game. 46.15% is the proportion of people who voted beer dye the third most common drinking game. 28.21% is the proportion of people who voted stack cup the fourth most common drinking game. 38.46% is the proportion of people who voted 3-man the fifth most common drinking game. 56.41% is the proportion of people who voted baseball the sixth most common drinking game. 66.67% is the proportion of people who voted baseball the seventh most common drinking game. The 95% Confidence Interval for beer pong being the most popular drinking game is between 0.662 and 0.918. Gender is the next categorical variable which had a rather strange breakdown. The proportions are as follows: female: 28.21%, males: 69.23%, Andrew Wright: 2.56%.
All of this data is reflected in our graphs.