

UWL Alcohol Consumption

Survey Results

MKT 367

Team Scooby-Doo

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Executive Summary

The research that we are doing is regarding the number of drinks that college aged people drink in a week. We plan to focus more on students that are attending college at UWL (University of Wisconsin La Crosse) to see the drinking habits of the students, as well as looking at some data that is not based out of college aged students to see if there is a difference.

- Research Questions:
 - How many drinks do college aged people have per week?
 - Derivative hypotheses:
 - $H_0: \mu = 8$
 - $H_a: \mu \neq 8$
- Research Methodology
 - Sampling method and justification:
 - Convenience Sampling
 - Hypothesis testing and justification:
 - One Sample T-test
 - Interpretation of results:
 - Reject H_0
- Discussion of Results:
 - Males drink more than Females & “Other” respondents drink on average the most.
- Suggestions for Future Research:
 - Our team recommends using stratified sampling method over convenience sampling. Stratified sampling will give us a more diverse dataset compared to convenience sampling. Our team also discussed the influence of social desirability bias and how this may alter our results. Our recommendations include formatting the questions differently and increasing our sample size to ideally eliminate this bias.

Introduction

Our team wanted to examine the alcoholic drink consumption of UWL (University of Wisconsin La Crosse) students and determine if there are tangible relationships between, year in college and gender. Since most of us would consider ourselves and our friend groups on the upper quartile of drinks per week, we were interested in finding out how other college students rank on that scale. We estimated the mean level of drinks per week amongst college-aged people was around 8 drinks per week. To gather data, we sent out a survey out on social media pages and group chats with friends. We used convenience sampling when sending the survey and desired for a snowball effect between friend groups.

Research Questions

The question that we wanted to ask was; how many drinks do college aged people have per week? When tasked with creating research questions for the survey, we had four key questions. Firstly, we wanted to inquire about what year of college the respondent is in, secondly, if the respondent consumes alcohol. Finally, how much alcohol do they consume weekly if they responded yes. Using these questions as a foundation for our survey, we can use the variables to analyze if there are relationships between the amount of alcohol consumed and gender or year in college. However, our hypothesis is based off the average consumption of alcohol.

Derivative hypotheses

$H_0: \mu = 8$ - If the null hypothesis is true, then the sample mean will be 8 alcoholic beverages.

$H_a: \mu \neq 8$ - If the null is rejected, then the sample mean will not be 8 alcoholic beverages.

Research Methodology

Sampling method and justification

We will be using a convenience sampling method. Convenience sampling is a non-probability method that respondents are selected due to the ease of access. Non-probability is a technique where the researcher selects the respondents based on judgement rather than random selection. We will send out the survey to people we know by posting it on social media. If we end up needing more responses, we will ask some of our friends to post it on social media as well, which would transition into more of the snowball method. A snowball sampling method is where survey participants are asked to share it with others.

We will have a survey that starts with asking them about their year in college, or if they are not in college. The next question will be asking what their gender is, next we will ask if they consume alcohol with a simple yes or no, lastly, they will be asked how many drinks they consume in a week which must be typed as a whole number. Initially we plan to investigate how many drinks are consumed a week on average, however, we also want to investigate the differences that may occur between the years in college, or if they are not in college, and if gender has a significant impact of how many drinks are consumed. We also may end up weighing the data to see how many drinks the average drinker has in a week, which would mean we would be looking at only the people who answered yes for the do you drink question.

- Year in college?
 - Freshman, Sophomore, Junior, Senior, other, and not in college.
- Gender?
 - Male, Female, Other, prefer not to say.

Do you drink – Yes or No

How many drinks a week _____

The year and gender can be interesting to see and point out certain differences in consumption between the gender and age.

By asking what year in college, we can identify if certain graduate years drink more or less than other graduate years and notice if the difficulty of classes have a relationship with student's year in college and if it could alter how much students drink. It would be difficult to say there was a relationship between these variables with confidence due to many other factors.

To make sure that we have enough respondents in our sample we decided to look at the sample size equation ($n \geq \frac{(z^2 \cdot \sigma^2)}{e^2}$) with "n" being the sample size we need, $z=2$ due to us using a 95% confidence interval. We used a value of 5 for the standard deviation (σ) and allowed a tolerance or error of $e=\pm 1$. This left us needing a sample size of at least 100 participants to make sure we have enough people to be able to estimate the population.

Asking about potentially illegal activity, no information will be shared to incriminate survey takers. Although using an emphasis on convenience sampling and some snowball sampling to gather data. We feel as if it will still be very representative of an average college student. With the initial respondents being friends in college at UWL (University of Wisconsin - La Crosse), they would represent the common student base well.

Hypothesis testing and justification

We will use a One sample t-test to determine if the null hypothesis ($H_0: \mu = 8$) will be rejected, the reason why we are using this test is due to not having full access to the entire population and only a sample group. We will be asking how many drinks people have per week with an estimated mean of 8, using a one sample t-test, we can determine how close the statistical mean (average) is to our estimated value.

With this data collected, our team will also compare the average amount of drinks consumed with both gender and age variables to see if we can find tangible evidence of relationships between these variables.

Interpretation of results

Report

Beverages

Mean	N	Std. Deviation
11.705	110	10.9187

One-Sample Test

Test Value = 8

	t	df	Significance		Mean Difference	95% Confidence Interval of the Difference	
			One-Sided p	Two-Sided p		Lower	Upper
Beverages	3.558	109	<.001	<.001	3.7045	1.641	5.768

After performing a T-Test on the data collected from the Qualtrics survey, we found the significance level (p-value) to be <0.001, which is under <.05. “.05” is a common p-value to use when dealing with a 95% confidence interval. The p-value and having data that is “significant” means that the results that are seen are not occurring just by chance. This means that the results have “statistical significance”, which allows us significant evidence to reject the null hypothesis that $H_0: \mu = 8$. Looking at how our lower interval is 1.641, and our upper interval is 5.768 we must add those intervals to the test value of 8 to find out what our 95% confidence intervals are. After adding the test value of 8 to our lower and upper intervals we found that we are 95% confident that the mean number of drinks will fall between 9.641 and 13.768.

Report

Beverages

YearCoded	Mean	N	Std. Deviation
1	8.200	15	5.5703
2	9.304	23	8.1767
3	13.186	51	13.1465
4	12.615	13	10.1287
5	25.333	3	6.8069
6	7.600	5	3.2863
Total	11.705	110	10.9187

Report

Beverages

GenderCoded	Mean	N	Std. Deviation
1	13.734	62	12.5279
2	8.638	47	7.2064
3	30.000	1	.
Total	11.705	110	10.9187

Out of our sample of 110 college-aged people, we found the overall mean of beverages consumed to be 11.705. When diving deeper into our data, we compared gender, as well as grade status. We found the male average drinks per week to be around 13.7, and for females, the average is 8.6 drinks. Male drinkers had a higher standard deviation at 12.5 than females had at 7.2. This shows that male drinkers had a wider spread of beverages consumed than females had. Other than male and female genders being interpreted we had one non-binary sample with a mean of 30 beverages consumed. When comparing grades, we had 51 juniors respond, and their mean is 13.1, which closely reflects our overall mean. Our second largest respondent grade is sophomores at 23 respondents, which we found a mean of 9.3 drinks per week, this possibly hints at an increase in alcohol consumption as grade year increases.

Discussion of Results

When looking at our research question and the results we found that the average amount of drinks that people have in a week is 11.705. This number is higher than our original estimate of 8 drinks a week. This could be to a few different things, one of the issues that could have occurred is sampling error. When looking at our raw data there were a few outliers of people that were claiming to drink 100+ drinks in a week. Because of this we did remove some data points to make sure our average was not skewed too much. Another issue that could have occurred is most of the people that our team sent the survey to were in our friend group, this can also be an issue because it is introducing bias to our study. After looking at our initial data we decided that we would like to investigate more than just the average amount of drinks that college aged people have. We thought that breaking it apart into different groups such as the year in college or the gender of the respondent would help us to further analyze our data. Prior to analyzing the data, we expected the male average to be higher than the female average, due to our personal experiences and the people we know. The data proves this theory, and we found the mean to be around 5 drinks higher for males. Since we are all juniors, and most of our friends are as well, we expected to have the highest number of junior respondents, which proved to be

true. Especially since junior year is the year we turn 21, we expected juniors to have the highest average drinks per week.

Suggestions for Future Research

Our team can use this first survey project as a basis for a much more in-depth survey in the future. We found some notable findings when reviewing our data. With our research method being a convenient sampling method. We found some common downfalls with that method. Firstly, with our entire research group being made up of Juniors and Seniors, we found that a lot of respondents were Juniors and Seniors as well, since our audience was mostly people we met through our classes and social gatherings. This could be a limiting factor in our data collection with other classes. A better method of sampling would be using a stratified sampling method. Using UWL Qualtrics and the ability to send this survey campus wide, we could get a group of each class and gender. This would lead to more confidence in the results. Secondly, students may be wary of submitting a survey regarding the amount of alcohol they drink if they are under the legal age for alcohol consumption. Although the survey was anonymous, it could still make people uncomfortable. Thirdly, Social Desirability Bias may play a factor in our results. We cannot confirm or deny this, but some people may exaggerate or downplay their alcohol consumption for the survey. To counteract this, we may be able to ask survey questions in a different format that discourages this or just increase our sample size, which would help eliminate this bias.