

Week 1 Assignment - Data Frame

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Overview

Alcohol consumption varies widely around the world, both by amount and type of beverage. The 2014 fivethirtyeight.com article “Dear Mona Followup: Where Do People Drink The Most Beer, Wine And Spirits?” (<https://fivethirtyeight.com/features/dear-mona-followup-where-do-people-drink-the-most-beer-wine-and-spirits/>) explores consumption trends and geographic variation using data from multiple sources.

One dataset referred to in the article was created by the author using WHO data from 2010, presenting per capita annual alcohol consumption around the world for residents > 15 years of age. While the original WHO dataset expressed per capita consumption in terms of liters of pure alcohol consumed, the author restated the data in a more relatable way, calculating equivalent “servings” using average alcohol content per ounce and average ounces per serving for each of three beverage types (five ounces wine, twelve ounces beer, and 1.5 ounces hard liquor).

In this analysis, we will use that dataset, found at <https://raw.githubusercontent.com/fivethirtyeight/data/master/alcohol-consumption/drinks.csv>, to identify (1) nations with zero reported consumption and (2) the top ten wine-consuming countries on a per capita basis in 2010.

Summary of Dataset and Aggregate Statistics

The dataset includes 193 records displaying the calculated servings per capita for three beverage types (wine, beer, and hard liquor), as well as the WHO metric “liters pure alcohol”. Below is a statistical summary of the data showing wide variation in the median and max servings consumed, among nations and across beverage types.

```
summary(x)
```

```
##      country      beer_servings  spirit_servings  wine_servings
## Length:193      Min.   :  0.0      Min.   :  0.00      Min.   :  0.00
## Class :character 1st Qu.: 20.0      1st Qu.:  4.00      1st Qu.:  1.00
## Mode  :character Median : 76.0      Median : 56.00      Median :  8.00
##                      Mean   :106.2      Mean   : 80.99      Mean   : 49.45
##                      3rd Qu.:188.0      3rd Qu.:128.00      3rd Qu.: 59.00
##                      Max.   :376.0      Max.   :438.00      Max.   :370.00
## total_litres_of_pure_alcohol
## Min.   : 0.000
## 1st Qu.: 1.300
## Median : 4.200
## Mean   : 4.717
## 3rd Qu.: 7.200
## Max.   :14.400
```

Nations Reporting Zero Consumption

One finding above is that the minimum amount of total liters of pure alcohol is 0.0. Isolating these records, we see that these are primarily but not exclusively Islamic nations, which historically discourage alcohol consumption. Exceptions include the Marshall Islands, San Marino, Monaco, and North Korea, which do not forbid consumption and may reflect data collection or quality issues.

```
nondrink<-x[x$total_litres_of_pure_alcohol==0,]  
nondrink
```

```
##           country beer_servings spirit_servings wine_servings  
## 1      Afghanistan           0           0           0  
## 14     Bangladesh           0           0           0  
## 47     North Korea           0           0           0  
## 80           Iran           0           0           0  
## 91           Kuwait           0           0           0  
## 98           Libya           0           0           0  
## 104        Maldives           0           0           0  
## 107 Marshall Islands           0           0           0  
## 108        Mauritania           0           0           0  
## 112          Monaco           0           0           0  
## 129         Pakistan           0           0           0  
## 148        San Marino           0           0           0  
## 159         Somalia           0           0           0  
## total_litres_of_pure_alcohol  
## 1           0  
## 14          0  
## 47          0  
## 80          0  
## 91          0  
## 98          0  
## 104         0  
## 107         0  
## 108         0  
## 112         0  
## 129         0  
## 148         0  
## 159         0
```

Wine-Drinking Nations: Top 20

Looking at median servings per capita, it is interesting to note that median wine consumption globally is only 8.0 glasses per capita, much lower than beer and spirits, while the max is 370 glasses. For more insight into where wine consumption is concentrated, the wine data was isolated and the top-twenty nations displayed below. European nations are well-represented here, with France at the top:

```
wine<-x[,c("country","wine_servings")]  
colnames(wine)<-c("Country","Glasses_Per_Capita")  
head(arrange(wine,desc(Glasses_Per_Capita)),n=20)
```

```
##           Country Glasses_Per_Capita  
## 1           France           370
```

## 2	Portugal	339
## 3	Andorra	312
## 4	Switzerland	280
## 5	Denmark	278
## 6	Slovenia	276
## 7	Luxembourg	271
## 8	Croatia	254
## 9	Italy	237
## 10	Equatorial Guinea	233
## 11	Argentina	221
## 12	Uruguay	220
## 13	Greece	218
## 14	Australia	212
## 15	Belgium	212
## 16	United Kingdom	195
## 17	Austria	191
## 18	Netherlands	190
## 19	Sweden	186
## 20	Hungary	185

Conclusion

The variation in alcohol consumption by nation and type of beverage reflects distinct societal differences, from France's famous love of wine to North Korea's silence on the topic. Continuing to explore these variations with an eye toward cultural, legal, economic, and other factors may be enlightening, particularly if similar datasets can be found to trend changes over time.