

Consumer beer sensory experiences:

Examining differences in styles &
factors related to perception

Group #2:

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Purpose of Research

- With the increased popularity of craft beers, the diversity of macro and micro brewery offerings has increased.
- This presents a challenge to distributors and retailers as to **what beers to carry when warehouse and shelf space, refrigerated cases and taps are limited.**
- For this project, we were interested in various types of beer and beer characteristics, which may affect consumer sensory perceptions.
- **The goal of our analysis is to provide insights that help inform such businesses as they decide what to stock and sell to their customers.**



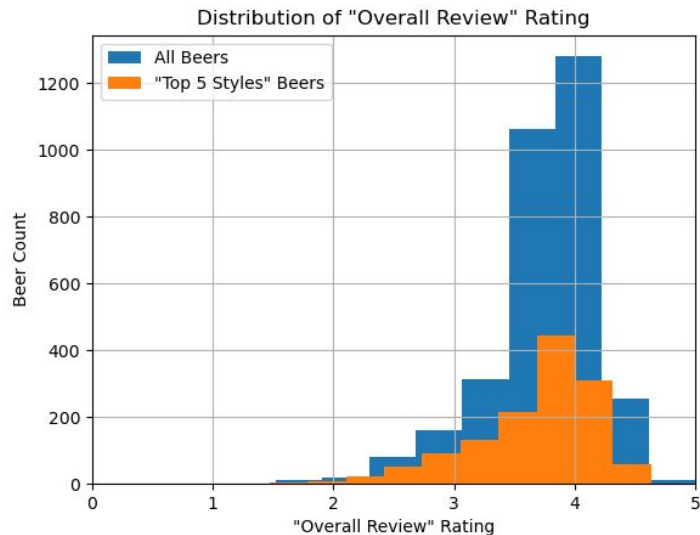
Research Questions

1. What are the profiles and ratings by popular, common beer style?
2. Is there a significant difference between beer styles in terms of ABV levels?
3. Are there correlations between sensory ratings?
 - E.g., appearance and taste; and aroma and taste.



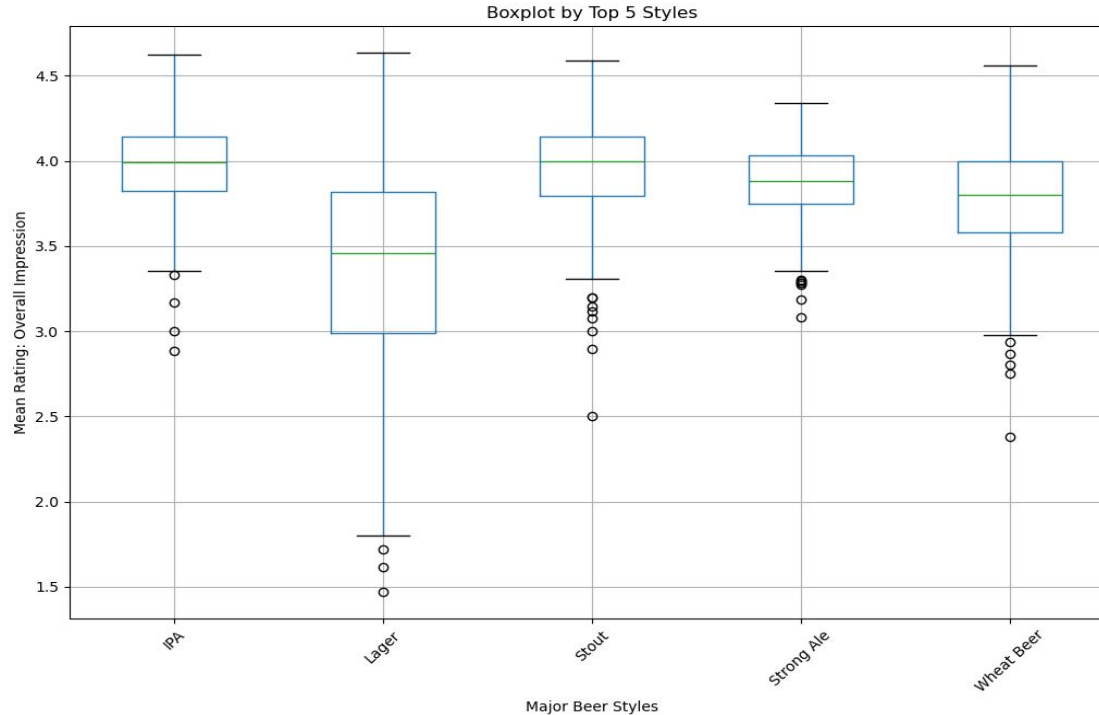
Source Data

- “Beer Profile and Ratings Data Set” via Kaggle.com
- ~ 3,200 unique beers originating from BeerAdvocate.com
 - Objective characteristics
 - Sensory and overall impression ratings by BA members
 - ~75K reviews



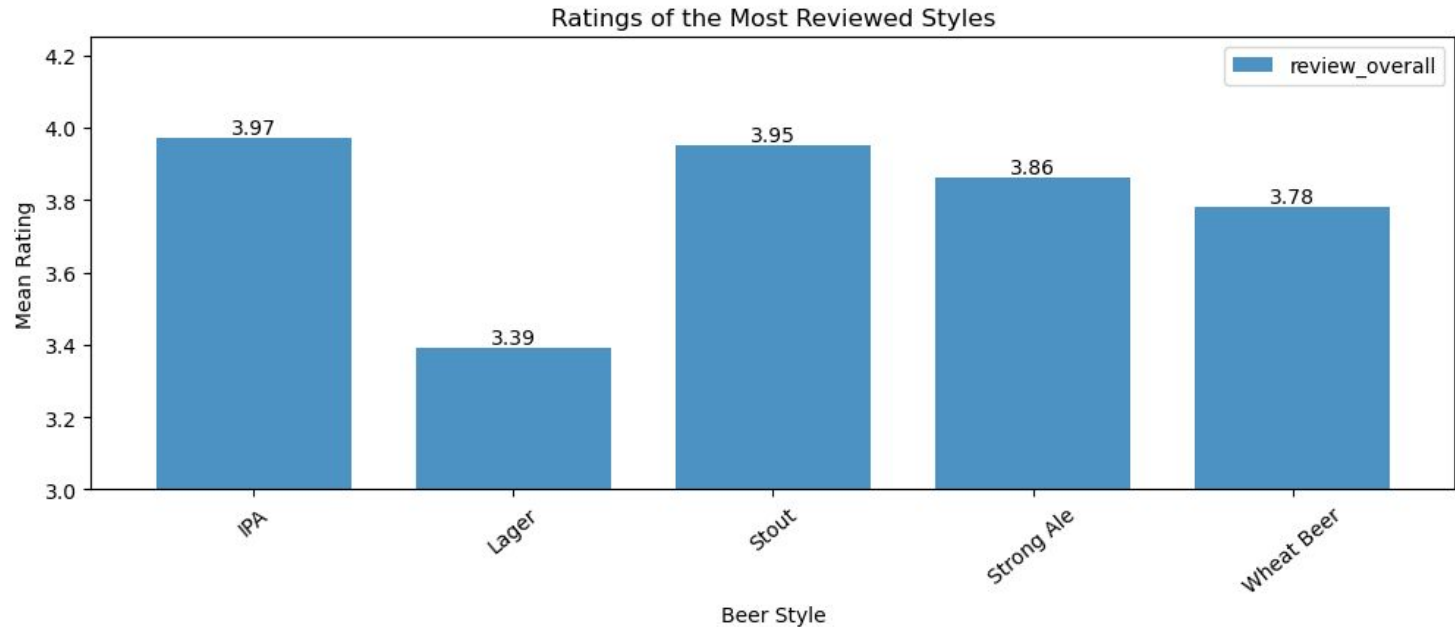
Question #1:

What are the profiles and ratings by popular, common beer style?



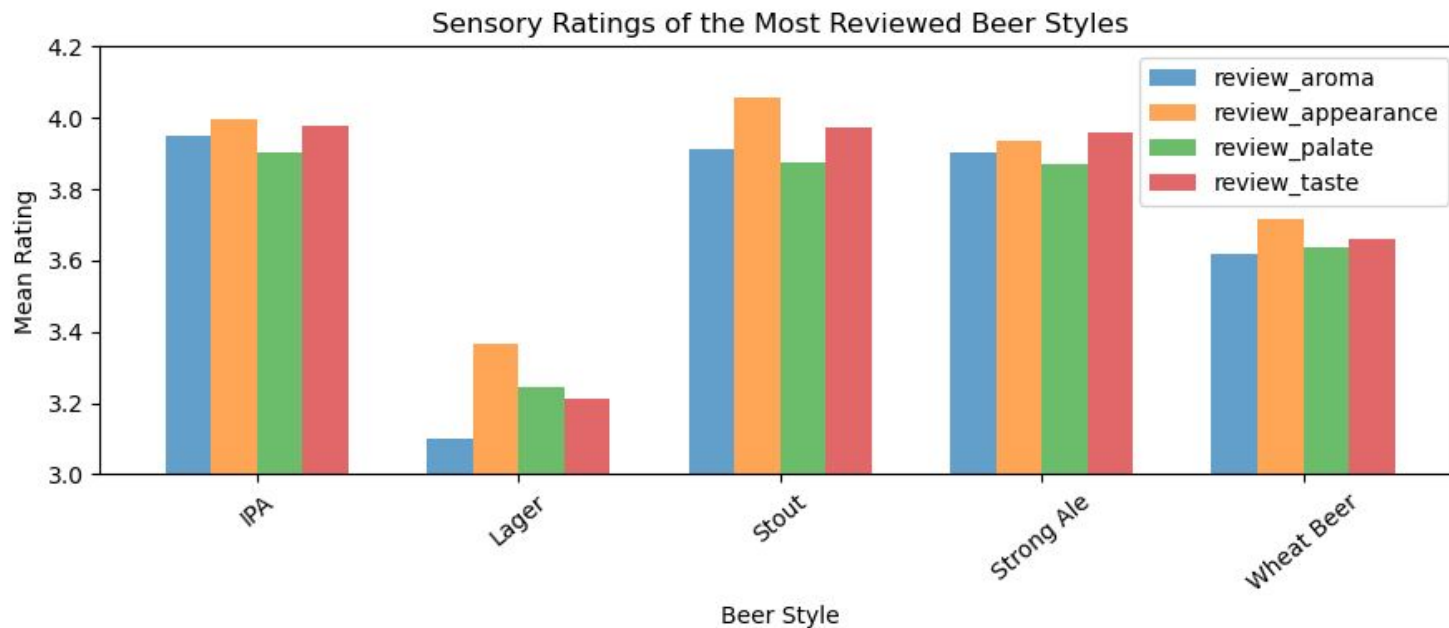
Question #1:

What are the profiles and ratings by popular, common beer style?



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What are the profiles and ratings by popular, common beer style?



Question #2:

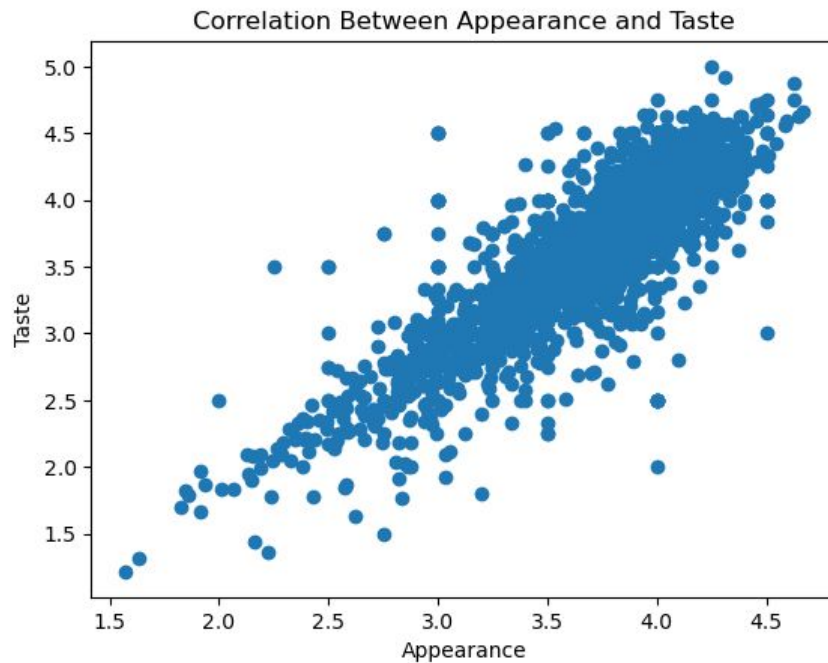
Is there a significant difference between beer styles in terms of ABV levels?

Result: P-Value=3.3473808185489374e-105



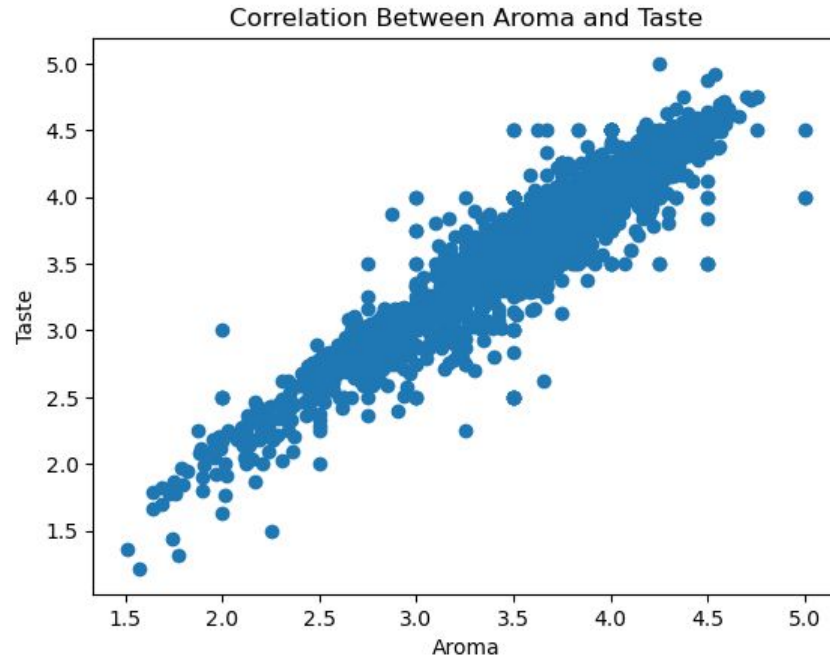
Question #3:

Are there correlations between sensory ratings?



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Are there correlations between sensory ratings?





Summary of Findings

1. Dataset left skewed and ratings concentrated around 4 (out of 5).
2. IPAs and Stouts highest rated among the most reviewed styles.
3. Lagers most reviewed but among the lowest rated.
4. There are significant differences between the most reviewed styles in terms of ABV levels.
5. Beer taste ratings are strongly and positively correlated to aroma and appearance ratings.

Suggestions



1. Although Lagers are widely reviewed, **it is clear that there is room for improvement in terms of sensory experiences (including ABV levels).**
 - a. Carrying Lagers should depend on a retailer's consumer characteristics. For instance, are they beer enthusiasts or are they indifferent?
2. To attract beer enthusiasts, **IPA and Stout beers** would be strong candidates for retailers to inventory.
3. Overall, because sensory experiences are strongly correlated with taste, focusing on each one will be important.
 - a. **Finding strategies to help consumers appreciate each sensory experience would improve the beer-tasting experience.** For instance, retailers can collaborate with bartenders in encouraging customers to evaluate the appearance and aroma of the beer.
 - b. There may be opportunities for in-store taste testings in which the full sensory experiences can take place.



Limitations

1. **Subjective ratings**
 - a. Particularly related to the senses
2. **Ratings influenced by...**
 - a. Ambiance
 - b. Potential influence of alcohol on the reviewer
 - c. Delays in consumption and rating
3. **Beer enthusiast bias**
4. **Exclusion of sales**

Cheers!

- Q&A
- Feedback
- Follow-Up

