



Lodestone Data Visualization Analyst Assessment

13.04.2021

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Overview

A test is conducted to assess the preferences and experiences of users of home outdoor grills. Your job is to read the data sets recorded in each step of the study, analyze for potential findings, write a report, and draw visualizations to illustrate the results.

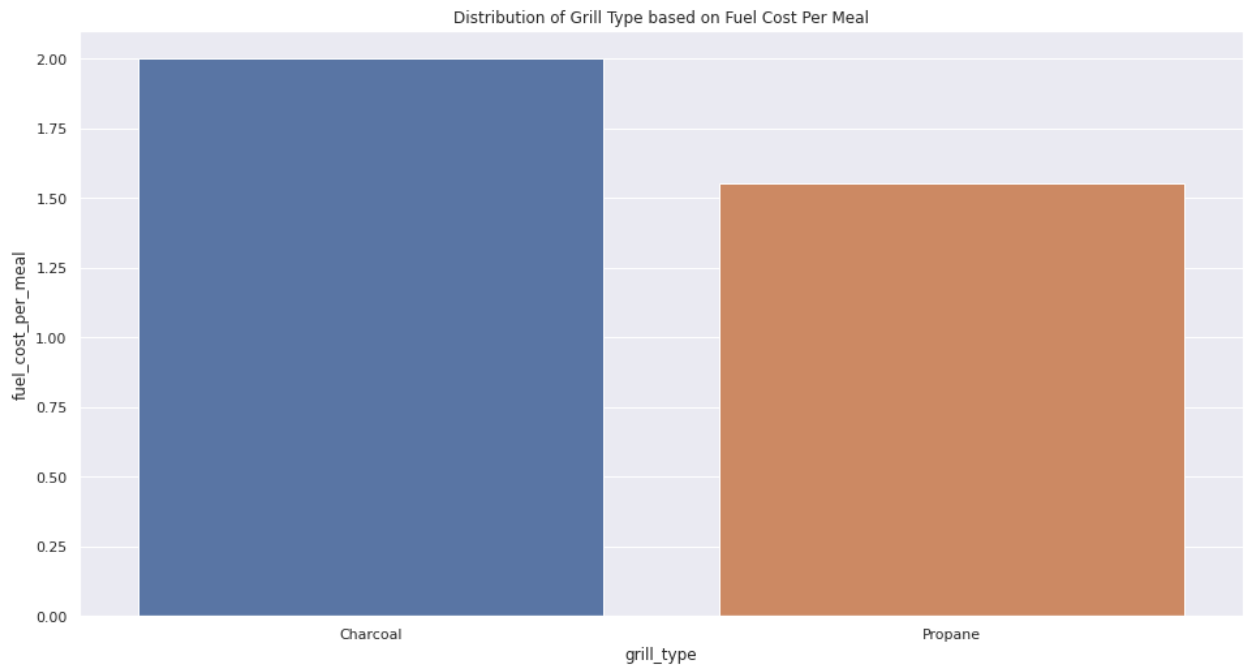
Goals

1. Name each sheet/table so they are meaningful standalone.
2. Which grill type is more fuel efficient based on sheet A?
3. Which grill type has more market share?
4. Based on the cookoff data, which grill type cost more fuel on a long run?
5. Considering that the average American grill owner buys a new grill every three years, which grill type would cost more based on the fuel cost and initial investment?
6. Which grill type is easier to use based on the user satisfaction score?Based on data, which grill is preferred? What factors might play a role?
Please generate an aggregated dataset to present your conclusions.
7. Are your recommendations to the manufacturer different to recommendations you'd make to the user?
8. (Bonus) Transform SheetC.json to SheetC.csv

Findings

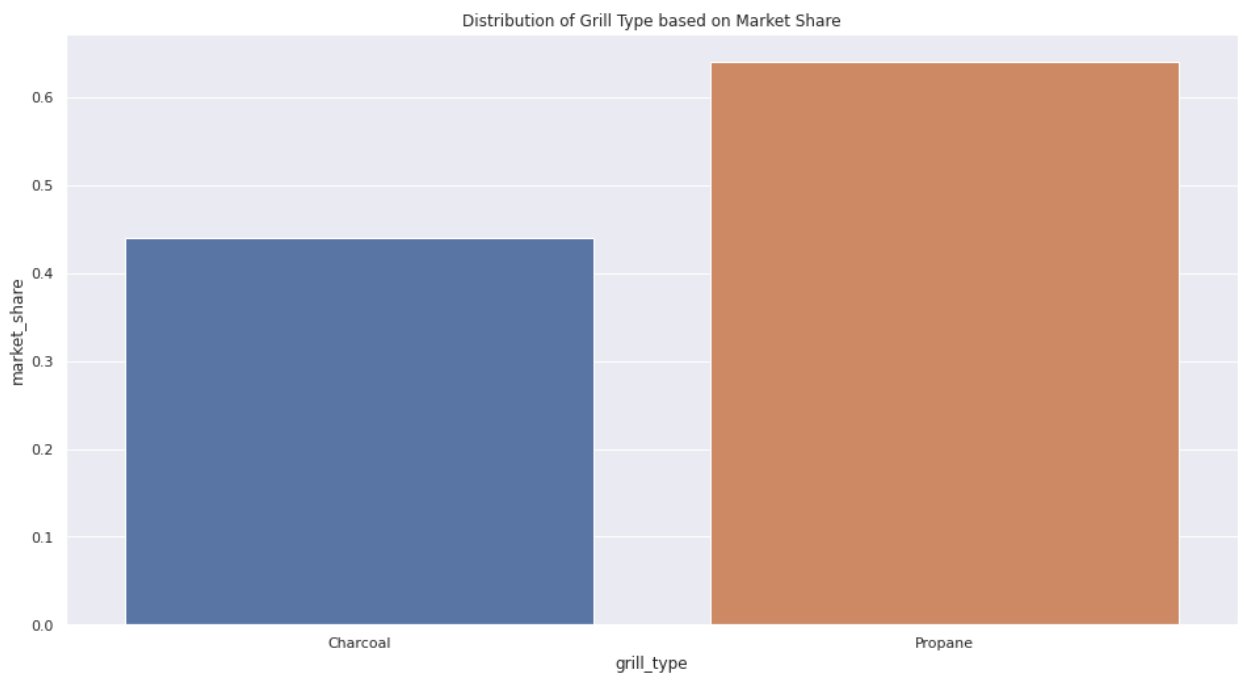
I. Propane is more fuel efficient than Charcoal.

I compared both the grill types wrt the fuel cost per meal component.



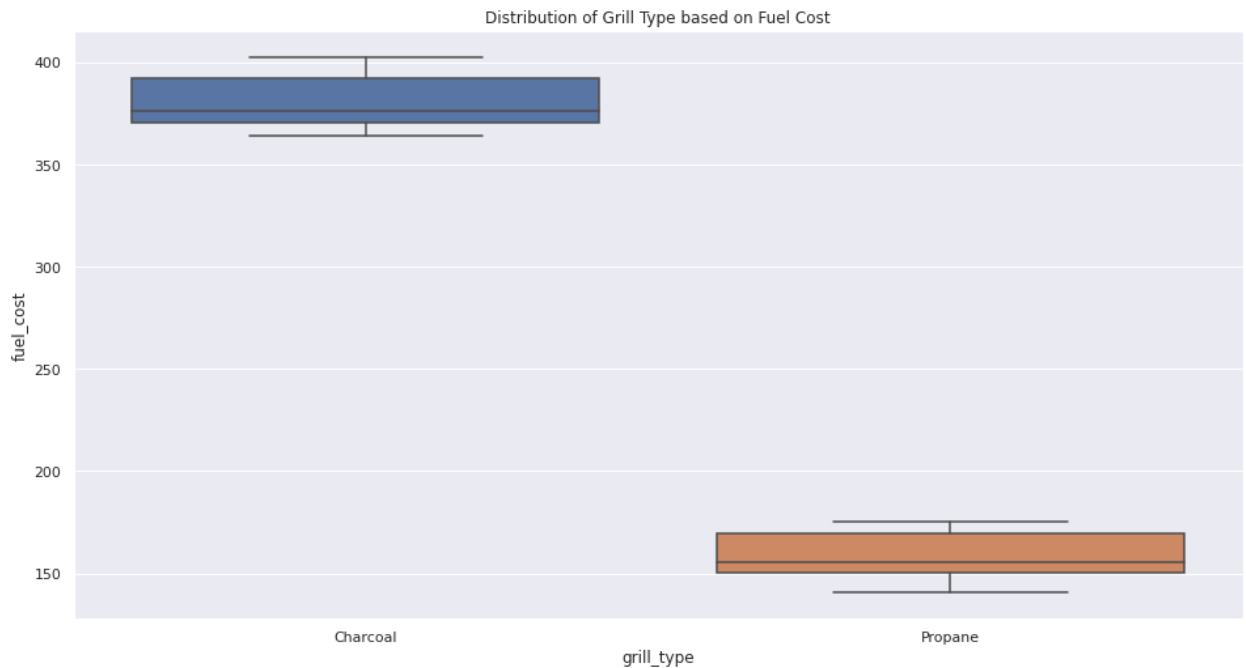
II. Propane has more market share than Charcoal

I compared the market share for both the grill types and notes that Propane had more market share than Charcoal.



III. Propane's fuel costs less than Charcoal

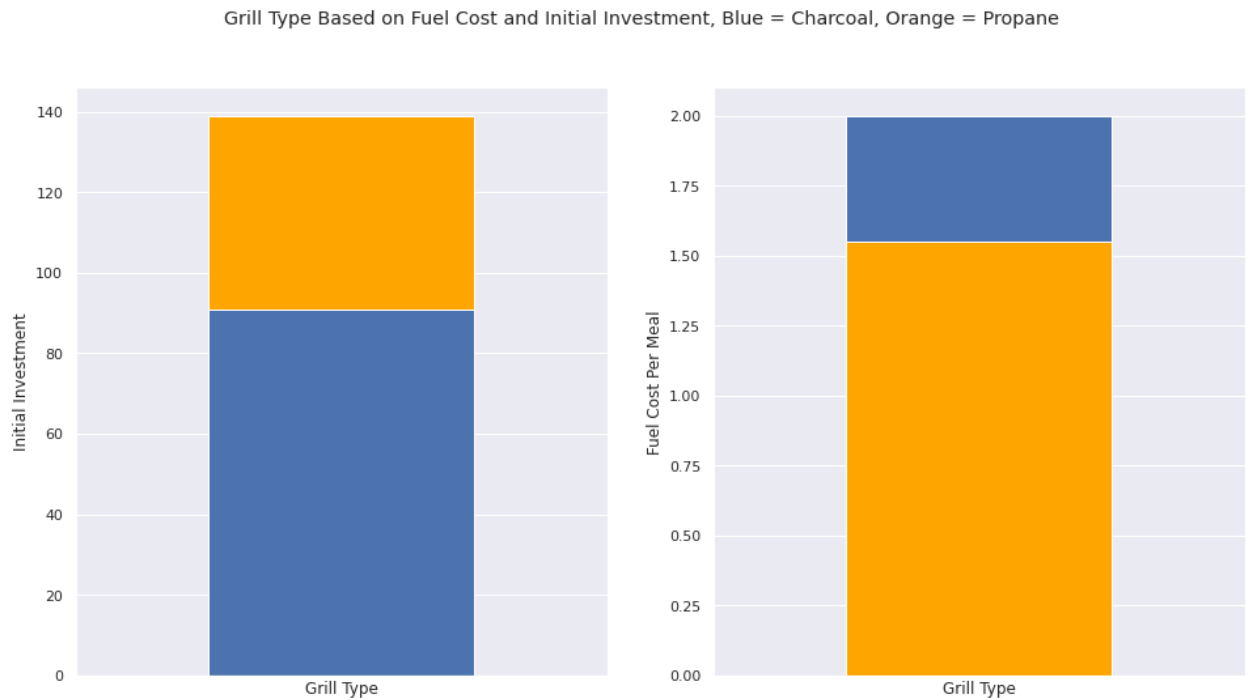
I compared the fuel cost for both the grill types and noted that the fuel cost for Propane was less than that for Charcoal.



As seen from the above plot, for charcoal, minimum fuel cost price is around 360 and maximum is around 400. Median value for fuel cost for Charcoal is around 375. On the other hand, for Propane, minimum fuel cost is around 140 and maximum is around 175. The median fuel cost for propane is around 155.

IV. Propane has more initial investment than Charcoal; Propane's fuel costs less than Charcoal

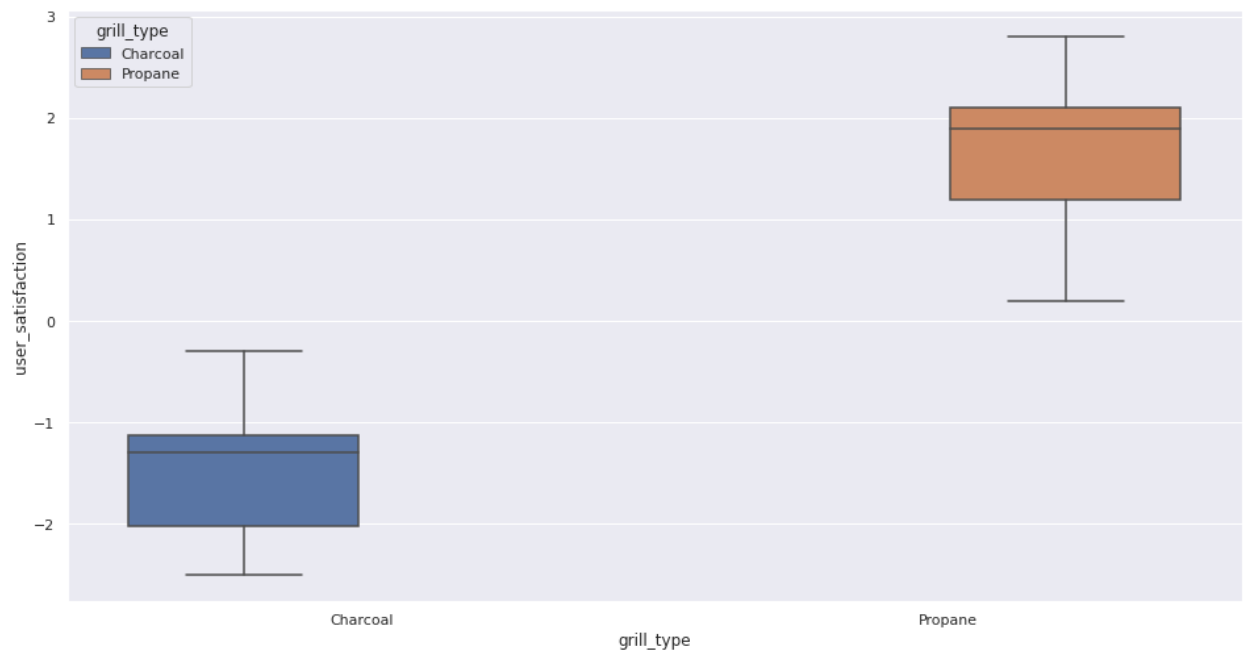
I compared the initial investment and fuel cost for both the grill types and noted that the fuel cost for Propane was less than that for Charcoal.



Based on the above plots, we note that, for Propane, fuel cost per meal is less but initial investment is high. On the other hand, for Charcoal, fuel cost per meal is high but initial investment is low.

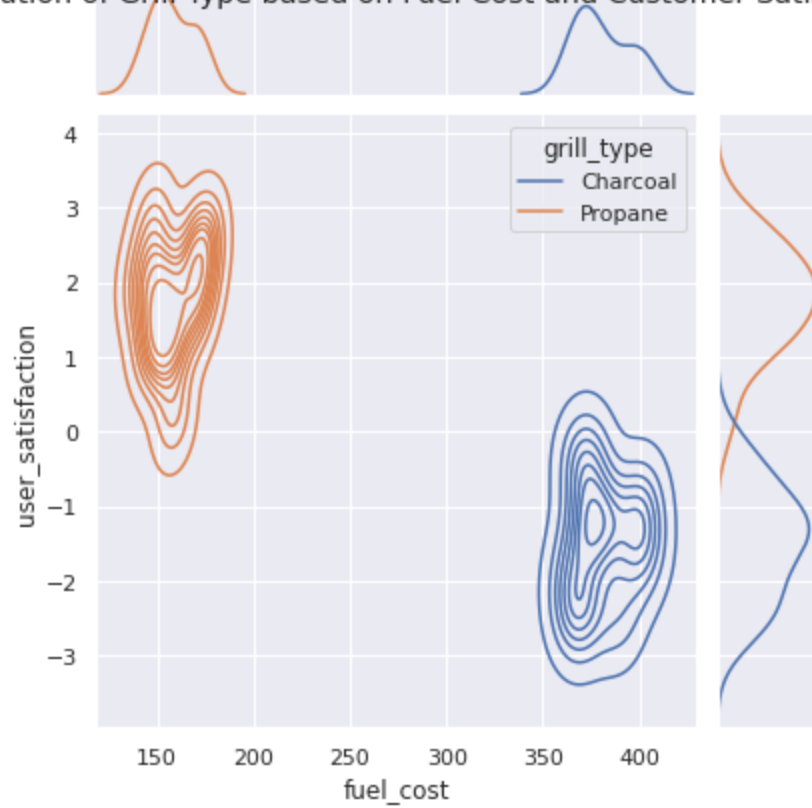
V. Propane has better User Satisfaction Score as compared to Charcoal

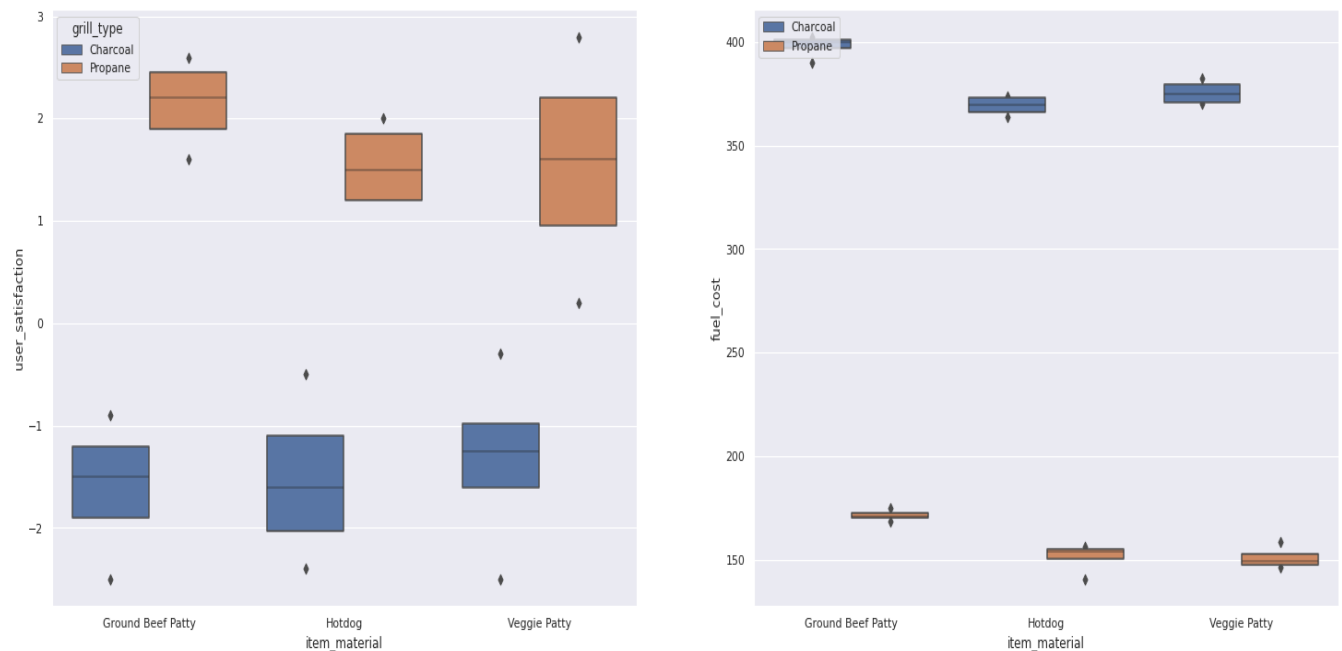
I compared the user satisfaction score for both the grill types and noted that Propane had better score than Charcoal.



VI. Propane is the preferred option

Distribution of Grill Type based on Fuel Cost and Customer Satisfaction






In the above plot, we are checking for each type of item material for each type of grill type what is the user satisfaction score and fuel cost. We note that Propane has a high user satisfaction score irrespective of item material. Ground Beef Patty using Propane has the highest user satisfaction score. When comparing fuel cost, charcoal is way higher than propane.

Depending on all the comparisons, I conclude that Propane is a more preferred grill type than charcoal.

- Propane has lower fuel cost.
- Propane has a higher user satisfaction score.
- Propane has more market share.
- Propane is more fuel efficient.
- Propane has higher initial investment.

Recommendation

There is still a big user base for charcoal even though the difference in user satisfaction score and fuel cost. The difference mainly lies in the flavour aspect. That is the main reason



which is keeping users interested in charcoal grills. The user base for both these grill types mainly changes depending on the item material. Users prefer certain grill types for certain item material.

- Manufacturer: Propane even though has higher initial investment, has lower fuel cost, which helps in durability for longer time. If the user base includes people who cook more than 16 times, Propane is definitely going to be the preferred product. So they should market their product in such a way.
- User: If preferred item material is veggie patty, then Charcoal grill is the certain choice. In the rest of the cases, propane grills are the preferred choice.

Conclusion

- All the above observations are made as per the information provided in the word document.
- More data is needed to understand user's preference:
 - Flavour preference is not mentioned in the current data.
 - Demographic data about the user, to understand if there are certain types of users where we have a certain type of product preference .
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