

Michael Candella

Analyzing Survey Results for Online Coffee Purchases

Introduction: In this report I hope to look at survey results for an individual's coffee purchasing preferences. It is important to determine your target market when entering a new business for the first time and sometimes isolating that potential consumer might not be as intuitive as one might expect. In this report I look at individual's methods for making coffee, age, and coffee traits that an individual might prioritize in order to determine the percent chance that an individual might purchase coffee online.

Part 1: Survey Questions

The Survey I conducted asked 5 Simple questions to **74 Coffee Drinkers in the U.S.**

1. **"What is your Age?"**
2. **What is your Gender?"**
(Male, Female, Other, Prefer Not to Answer)
3. **"Do you buy pre-ground coffee beans or whole coffee beans?"**
(pre-ground,whole, or other)
4. **What is the most important factor you consider when buying coffee?"**
(Flavor,Price,or Quality)
5. **"Would you consider purchasing coffee (pre-ground or whole) online?"**
(Yes or No)

These questions help us in identifying any demographics or interests that are more likely to lead to an online coffee purchase. Online Coffee is often seen as of higher quality due to the numerous amounts of whole bean roasts and flavors that the online marketplace has to offer so I'd hypothesize that individuals who own a coffee grinder (and therefore purchase whole beans) and those who favor quality over price are much more likely to purchase online.

Part 2: Survey Results

I originally believed that younger people would be much more willing to purchase coffee online and those who are much more likely to own a coffee grinder are much more likely to use online resources to purchase coffee and the survey results show very similar outcomes.

- Of the 37 people who said they buy ground coffee, only 5 of them said they'd purchase coffee online
- Of the 34 people who said they buy whole coffee, 31 of them said they'd purchase coffee online.
- The correlation between age and coffee purchasing online is $-.73$ which means as age rises, the willingness to purchase coffee online drops significantly.
- Of the 41 who favored flavor and quality, only 12 of them were ground coffee drinkers.
- Of the 33 who favored price, only 4 of them were whole coffee drinkers.

These insights paint an important picture in our target markets however to get a more concise field of estimation we must move forward with a logistic regression.

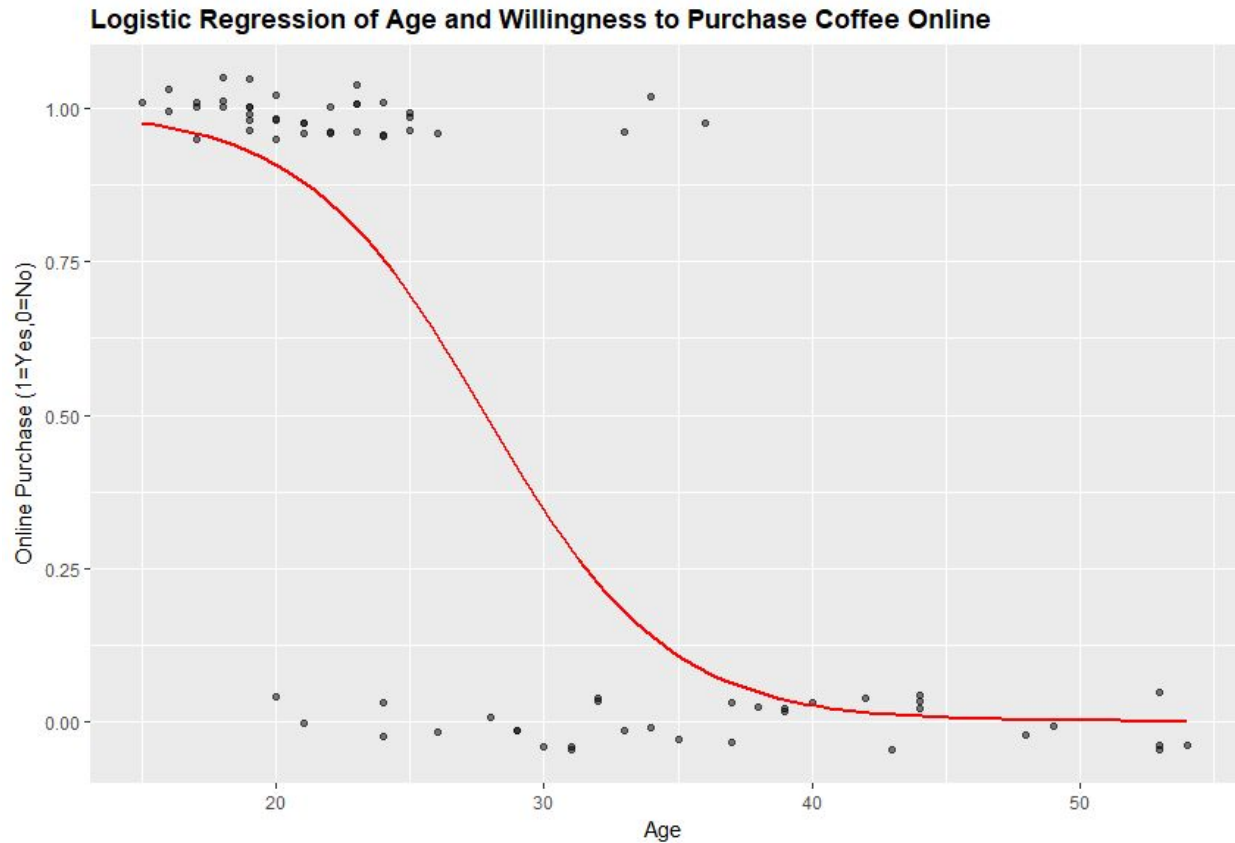
Part 3: Model Selection

Now that we have an appropriate understanding of our data set we can now fit a logistic model onto our independent variables. A logistic regression will help us see which factors have a significant likelihood in having an impact on online coffee sales.

Upon fitting the model, the model with the smallest RMSE is

$SALES = \beta_0 + \beta_1 AGE + \beta_2 Value$ as these variables hold the most statistical significance.

A graphical representation of this fitted model can be displayed below.



Part 4: Interpretation

Now that we have a significant and fitted model we can look at the probability scale to determine likelihood that an individual would be willing to purchase coffee online. The predicted value and their ranges are displayed in the table below.

Age Range	Quality	Average Likelihood
10-20	Price	70%
10-20	Flavor	99%
10-20	Quality	99%
21-30	Price	11%
21-30	Flavor	89%
21-30	Quality	89%
31-40	Price	x<1%
31-40	Flavor	41%
31-40	Quality	40%
41-50	Price	x<1%
41-50	Flavor	3%
41-50	Quality	2%

Part 5: Conclusion

As you can see by the results of predictions, the key area to focus our marketing efforts would definitely be on much more efficiently aimed at individuals ranged 10-30 with an emphasis on high quality products as opposed to price savvy products. With this information we can optimize our promotion efforts in order to reach the potential consumer as efficiently as possible.