Data Analytics Term Project

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Business Understanding

Business Opportunities from the Data

- Could be of help to retailers and manufacturers who are marketing and selling the listed products
- Gather insights into potentially successful new products

Relevant Business Questions

- Which households are likely to purchase yogurt and frozen dinner products?
- Is there a correlation between those who buy yogurt and those who buy frozen dinner products?
- How much money is each household likely to spend on each product?

Data Understanding

- Target Variables:
  - Yogurt Expenditure
  - Frozen Dinner Expenditure
- Create graphs purposefully to find which variables are significant at a base level
- Find the correlation between people purchasing yogurt to frozen meals and frozen meals to yogurt
- Find the correlation on how much people are spending on these items
  - Show how much money is needed to get the largest amount of products
- Find what gender is most likely to purchase these items
- Run categorical relationships to see how it links to households

Data Preparation

- Eliminate zero values from birth years- zeros indicate lack of data (Numerical:Interval)
- Replace missing values with zeros
- Create new variables/columns that are more applicable and helpful for answering the business questions (YogExp:DinExp Ratio)

Modeling

- We will be using classification models
    - Will not have to be predicting into the future, rather what households can afford the frozen products and who would purchase them
    - They can be categorically separated
- Linear Regression Model
    - Going to be using more than two variables to determine the outcome
    - Key Variables:
        - YogExp, DinExp, HHInc

Yogurt Demand by Household Structure

- Couples are more likely to purchase yogurt than single females and single males.

- How does this affect the business strategy?
  - Since couples are statistically more likely to purchase yogurt, the company should market their yogurt product to couples (i.e., using families in commercials).

- Proportions are necessary rather than counts because each household category has a different population.
 - Values are standardized for 'apples to apples' comparisons.
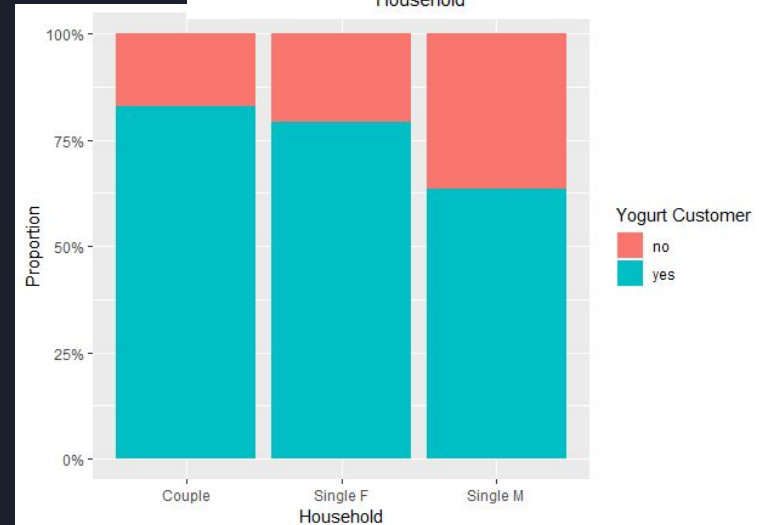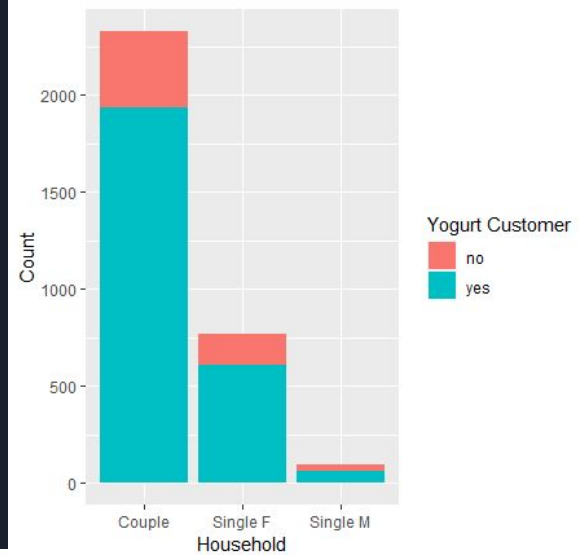
How much money is each household likely to spend on each product?

- There is a large correlation between the amount people spend on yogurt to dinners
  - .843
- Average spent per household?

Household type	Yogurt	Frozen Dinner
Apartment	29.47859	38.00138
Condo	35.15197	47.06529
Single Family	40.82534	56.1292
Multiple Family	46.49872	65.19311
Mobile Home	52.17209	74.25703
Other	57.84547	83.32094

Dinner demand by Household Type

- Single family homes are the largest consumers of frozen dinners

- Those living in condos have the highest proportion of frozen dinner customers

- Business impact
  - The company should focus its advertising towards consumers living single family homes since that is where the majority of its revenue comes from
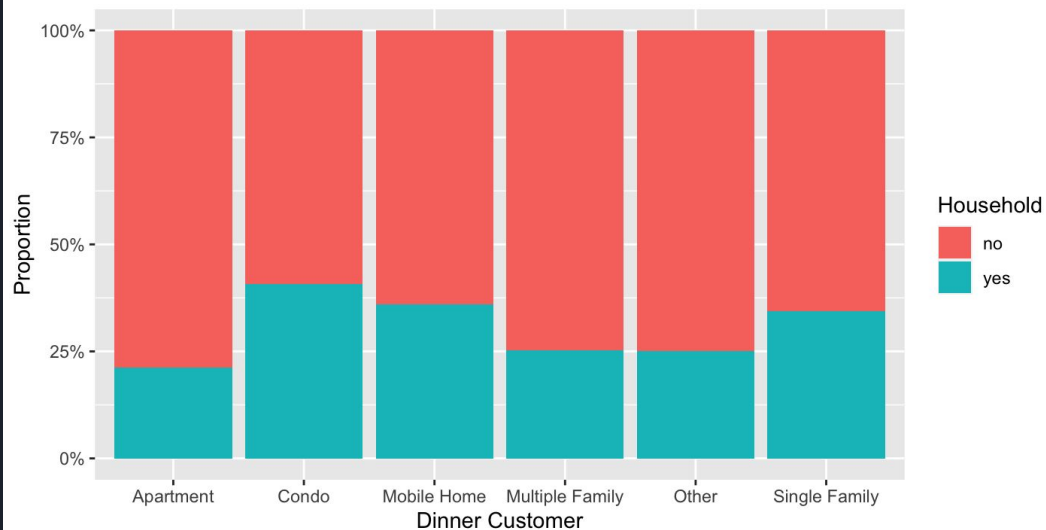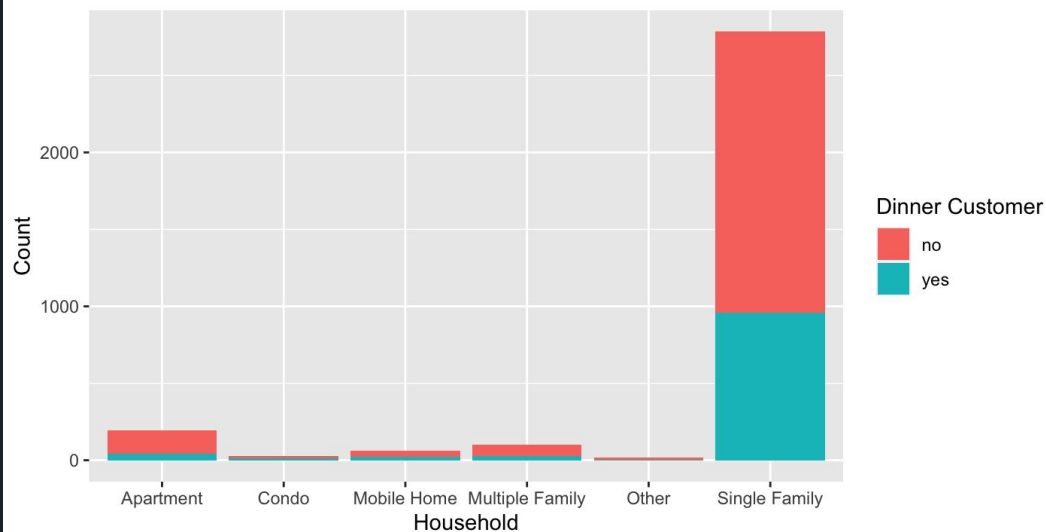
Deployment

Results:

- Most important category for yogurt:
  - Married, Single F, Single M
- Most important category for frozen dinners:
  - Married, single F, single M
- More people do not buy frozen dinners then do buy them
- Large correlation between the amount people spend on yogurt to dinners

Business Recommendations:

- Yogurt advertising should be targeting families and couples
- Frozen dinner advertising should be targeting those in single family homes
- Both should have advertising target multiple family and mobile home households

Thank You!