

# Case 1 – Cluster Analysis

Segmentation of Sticks – Kebob

Shop (*Supplemental answers, notes, and remarks related to the questions of the case are contained in the speaker's notes*)

Authors:

*Joshua Cabal, Rahul Dipak Talreja, Lekhana Chandra Palamuri, Sri Sai Manogna Gollapalle, Rahul Parasa*



# How do people choose a fast food / QSR to visit? (1a)

- **Convenience** – Location, waiting times
- **Price**
- **Taste**
- **Health** – Macronutrient breakdown, fresh ingredients,
- **Service** – Consistency, quality
- **Dietary Alignments** – Vegan, vegetarian, Halal, etc.
- **Perception**





What does the survey data tell us (if anything) about the differences between customers and non-customers? **(1b)**

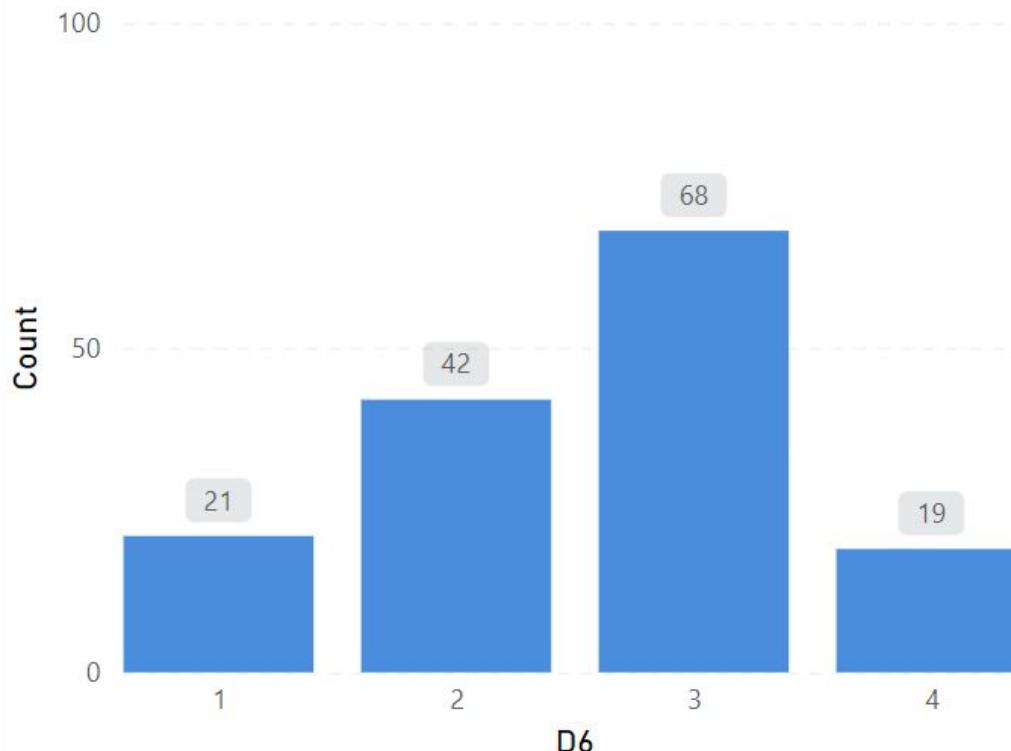
- Differences detected in the following attributes:
  - Age
  - Income
  - Lunch Decisions
  - Restaurant Factor Importance

# Customer vs. non-customer : Age (1b)

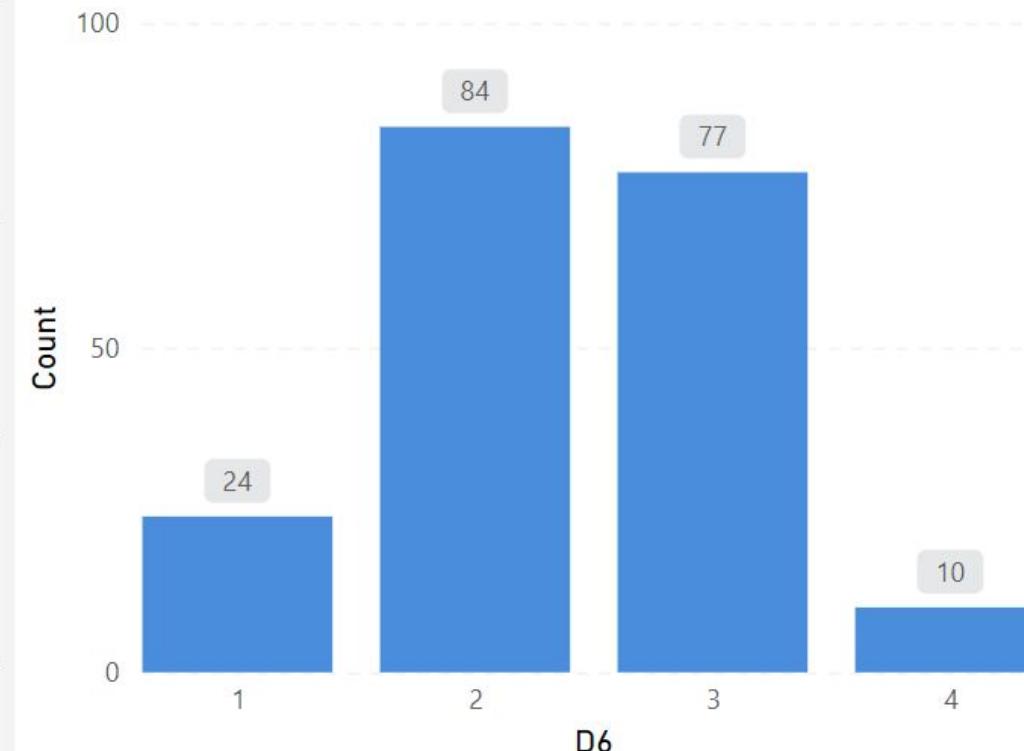
- Many customers are in the 26-65 age range
- Non-customers are mostly in the 32-65 range, and the second largest range is 26-40
- Both distributions feature different shapes and central tendencies

1: 25 or younger  
2: 26-40  
3: 31-65  
4: 66 or older

Age Distribution: Non-customer



Age Distribution: Customer



# Customer vs. non-customer : Income (1b)

- Many customers fall in the \$50K – \$100K range
- Many Non-customers fall in the < \$50K range
- Both distributions feature different shapes and central tendencies

1: < \$50K  
2: \$50K - 100K  
3: > \$100K



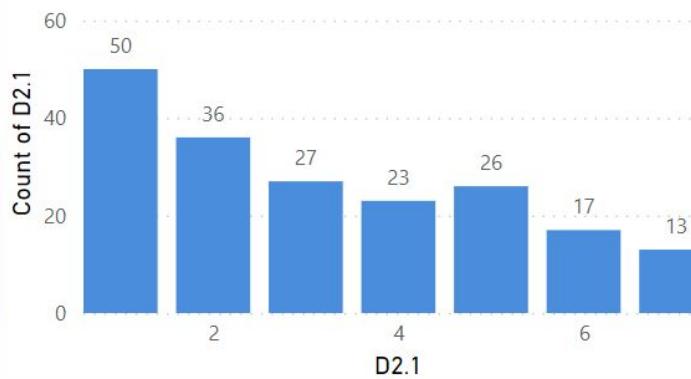
D2.1: How many times in the last week did you do the following? -

Make/eat lunch at home

Lunch at Home: Non-Customer



Lunch at Home: Customer



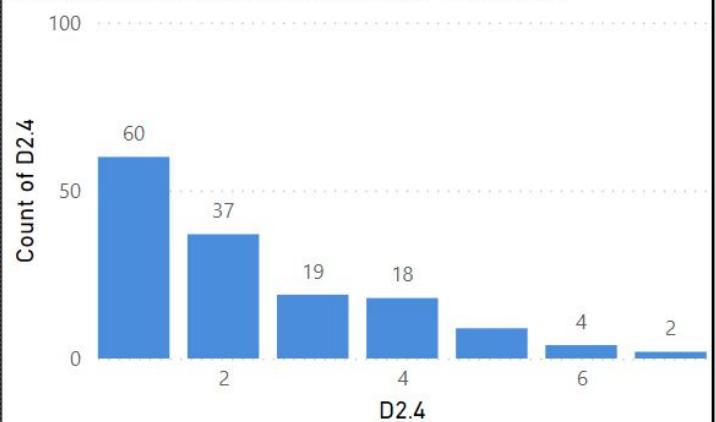
## Customer vs. non-customer : Lunch (1b)

- Customers bought lunch at restaurants much more frequently
- Non-customers make/eat lunch at home much more frequently
- Both distributions feature different shapes and central tendencies

D2.4: How many times in the last week did you do the following? -

Buy lunch at restaurant

Bought Lunch at Restaurant: Non-Customer



Bought Lunch at Restaurant: Customer



# Customer vs. non-customer : Restaurant Factor Importance (1b)

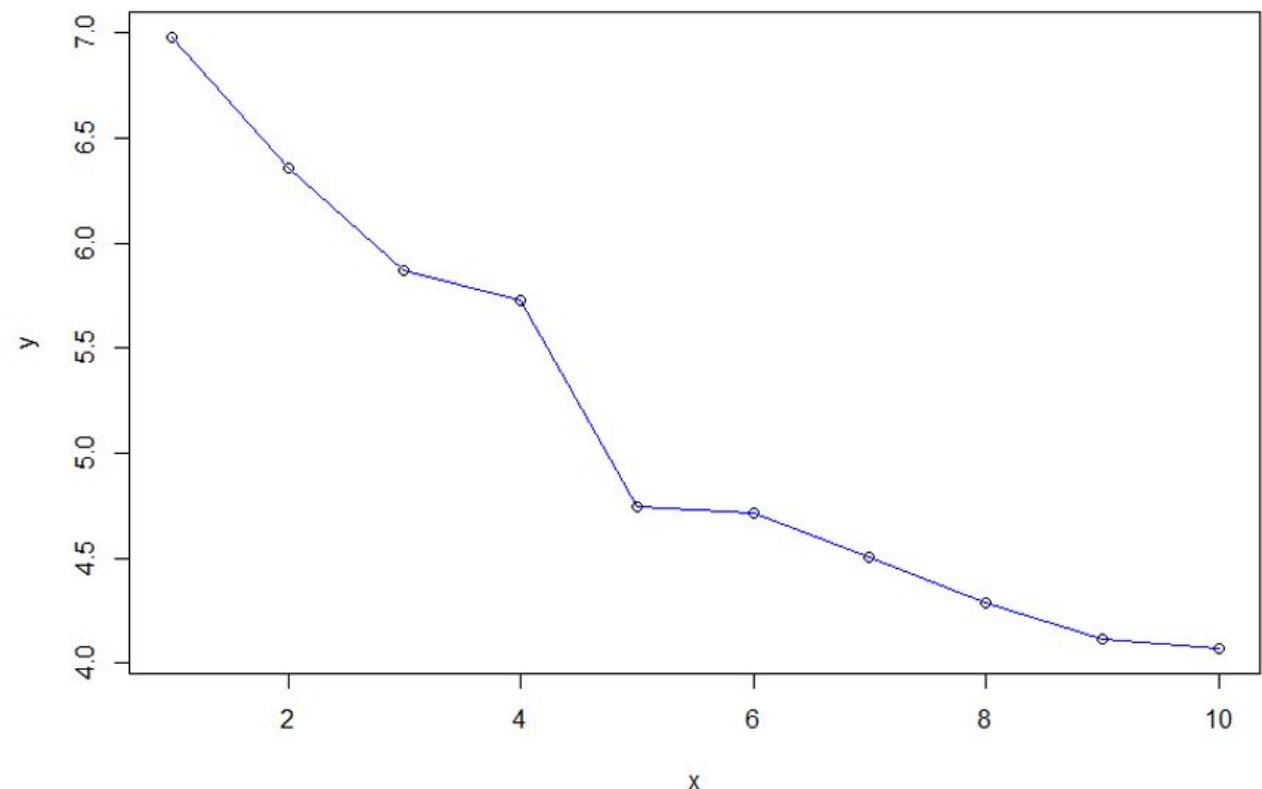


- Non-customers reported higher importance on **staff** and **ambiance** compared to customers
- Customers reported much higher importance on **health** compared to non-customers

# Cluster Analysis – How Many Segments Are in the Market? (2a)

- Given the R script contained in the case files, we obtained the following elbow plot.
- We chose **5 segments**, based on the result of the plot. Justification:
  - Manageable amount of clusters
  - Diminishing returns after 5 segments
  - Good interpretability and differences between clusters when choosing 5

Figure: Elbow plot result



# Cluster Analysis – Profiling the Segments (2b)

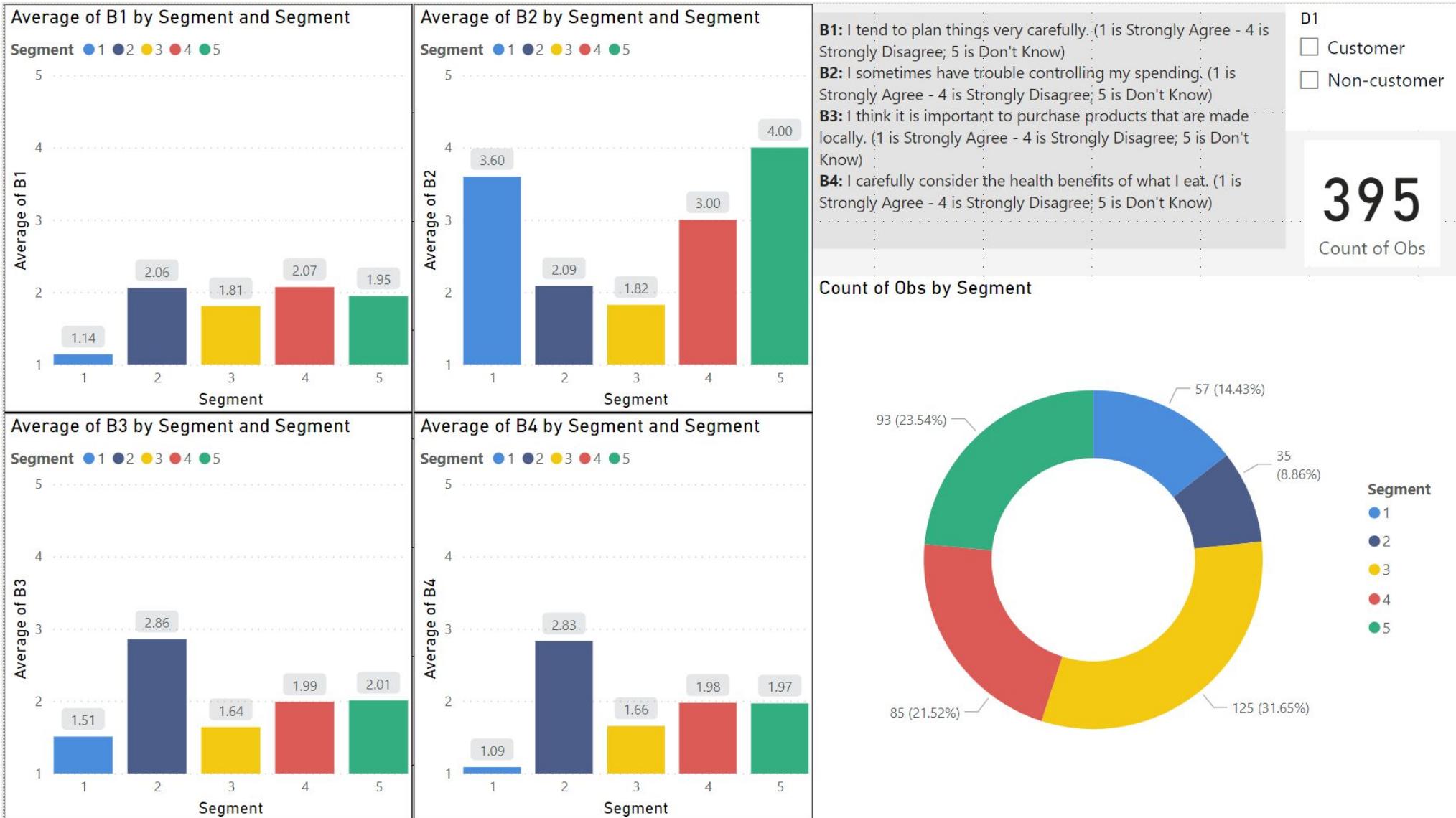
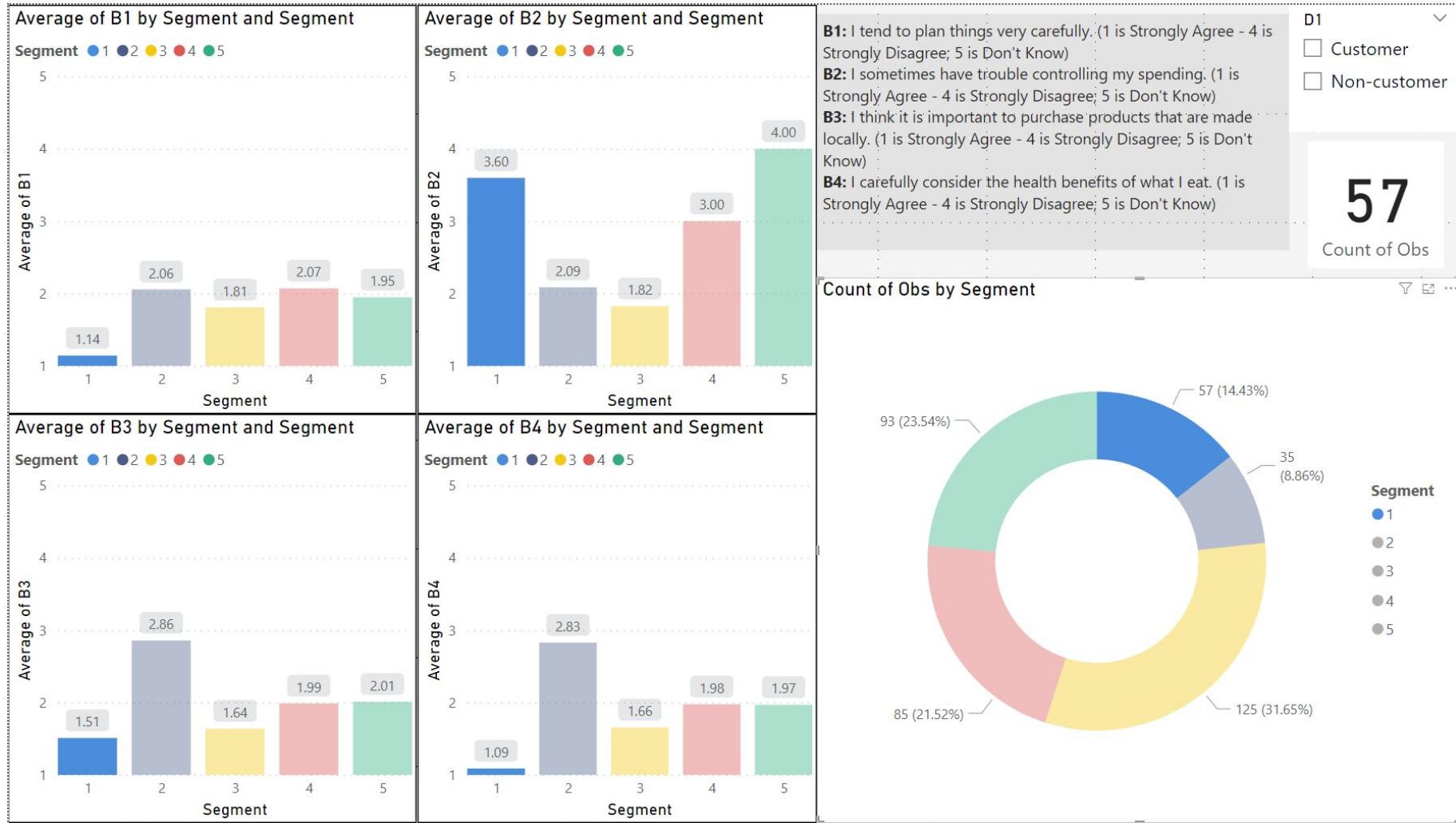


Figure: Splicing base variable responses by segment

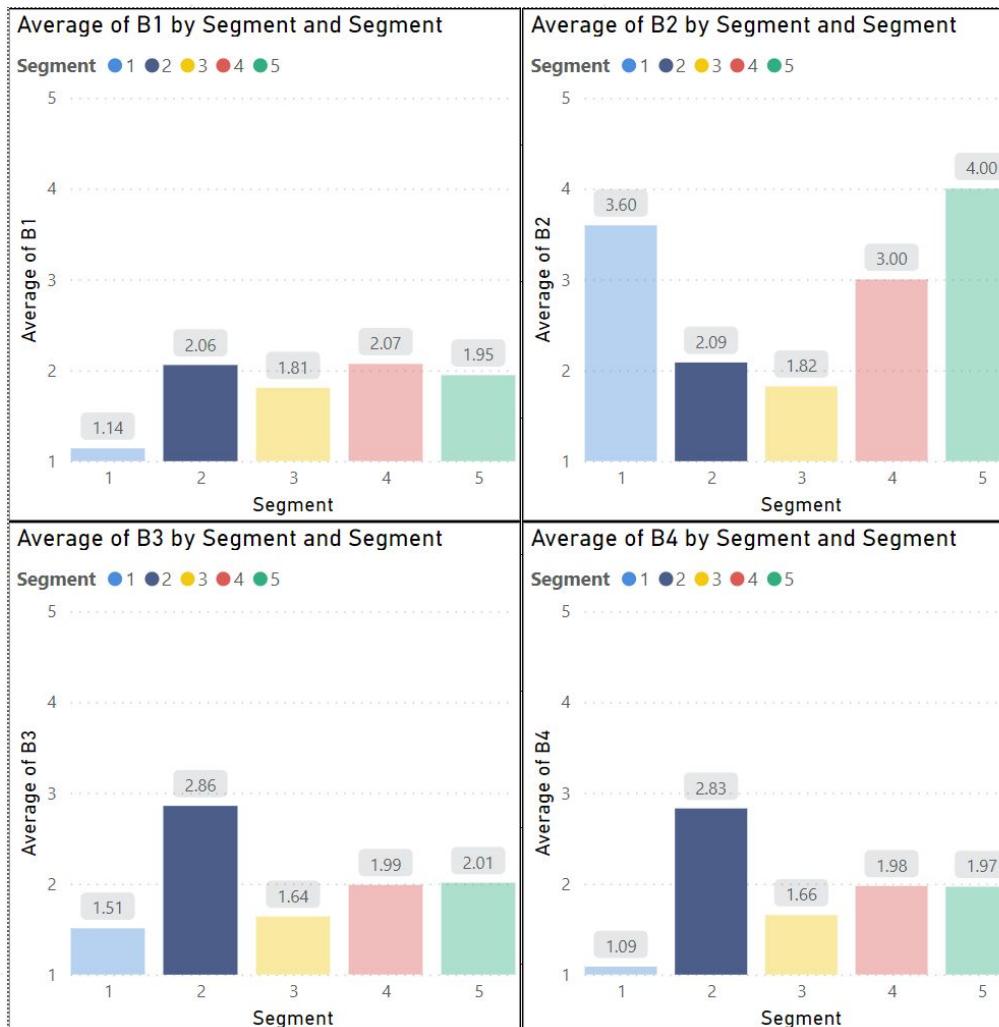
# Segment 1 - Meticulous Health-Conscious Localists

- Extremely careful planners
- Controlled spender
- Local supporter
- Extremely health conscious



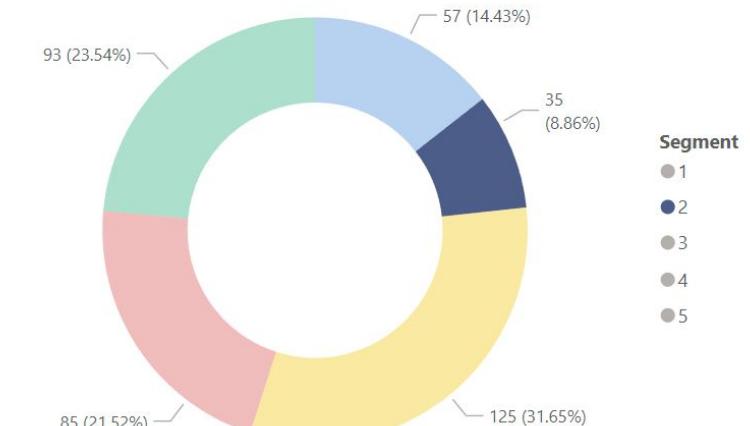
# Segment 2 - Casual Spenders with Neutral Preferences

- Careful planner
- Volatile spender
- Indifferent on locality
- Not health conscious



**B1:** I tend to plan things very carefully. (1 is Strongly Agree - 4 is Strongly Disagree; 5 is Don't Know)  
**B2:** I sometimes have trouble controlling my spending. (1 is Strongly Agree - 4 is Strongly Disagree; 5 is Don't Know)  
**B3:** I think it is important to purchase products that are made locally. (1 is Strongly Agree - 4 is Strongly Disagree; 5 is Don't Know)  
**B4:** I carefully consider the health benefits of what I eat. (1 is Strongly Agree - 4 is Strongly Disagree; 5 is Don't Know)

Count of Obs by Segment



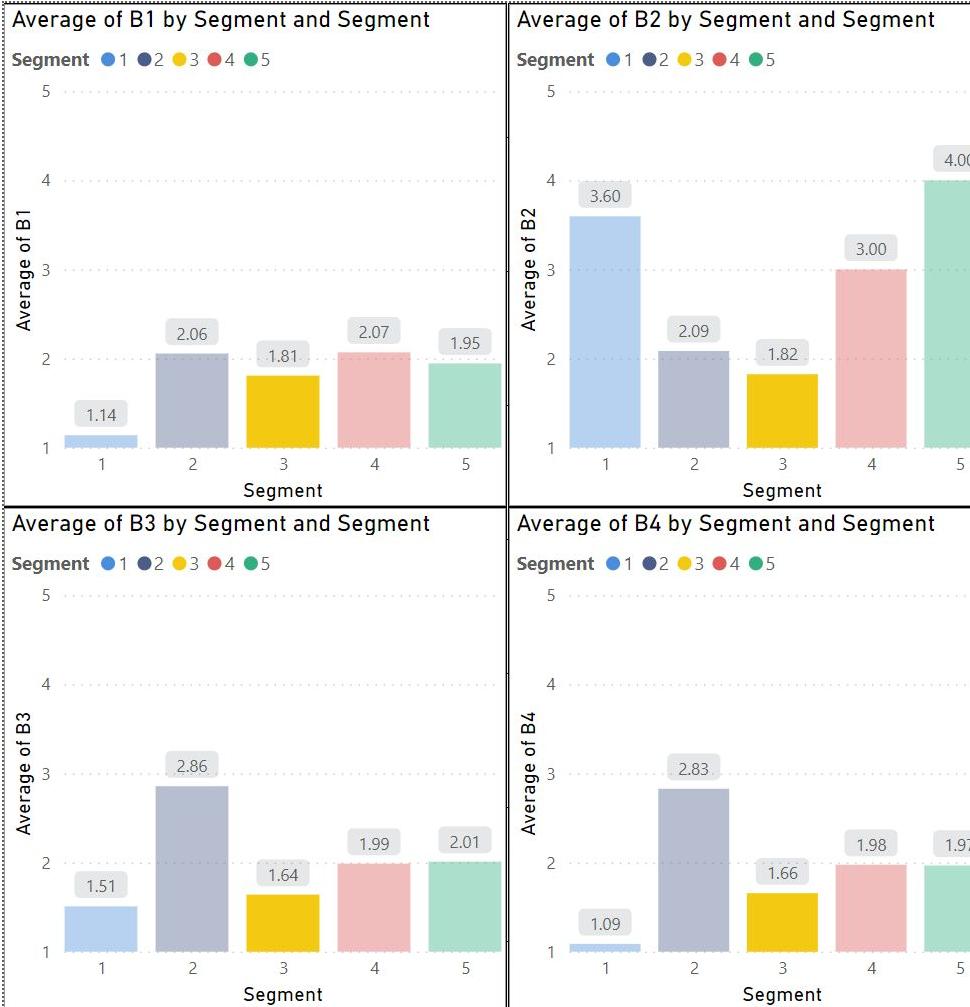
D1  
 Customer  
 Non-customer

35

Count of Obs

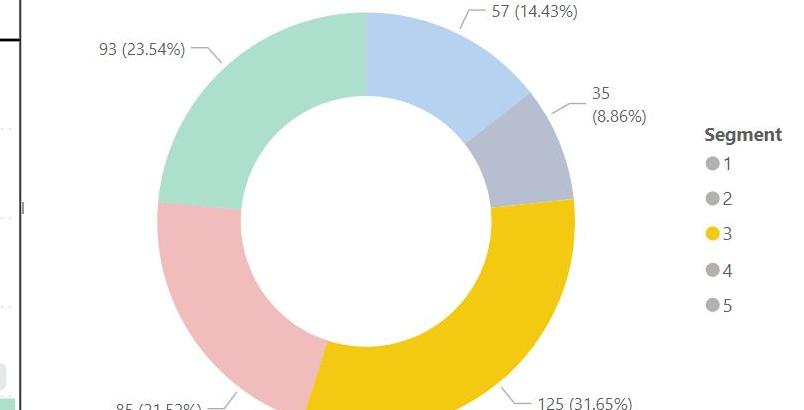
# Segment 3 - Volatile Spenders with Health and Strong Local Bias

- Careful planner
- Volatile spender
- Local supporter
- Very health conscious



**B1:** I tend to plan things very carefully. (1 is Strongly Agree - 4 is Strongly Disagree; 5 is Don't Know)  
**B2:** I sometimes have trouble controlling my spending. (1 is Strongly Agree - 4 is Strongly Disagree; 5 is Don't Know)  
**B3:** I think it is important to purchase products that are made locally. (1 is Strongly Agree - 4 is Strongly Disagree; 5 is Don't Know)  
**B4:** I carefully consider the health benefits of what I eat. (1 is Strongly Agree - 4 is Strongly Disagree; 5 is Don't Know)

Count of Obs by Segment



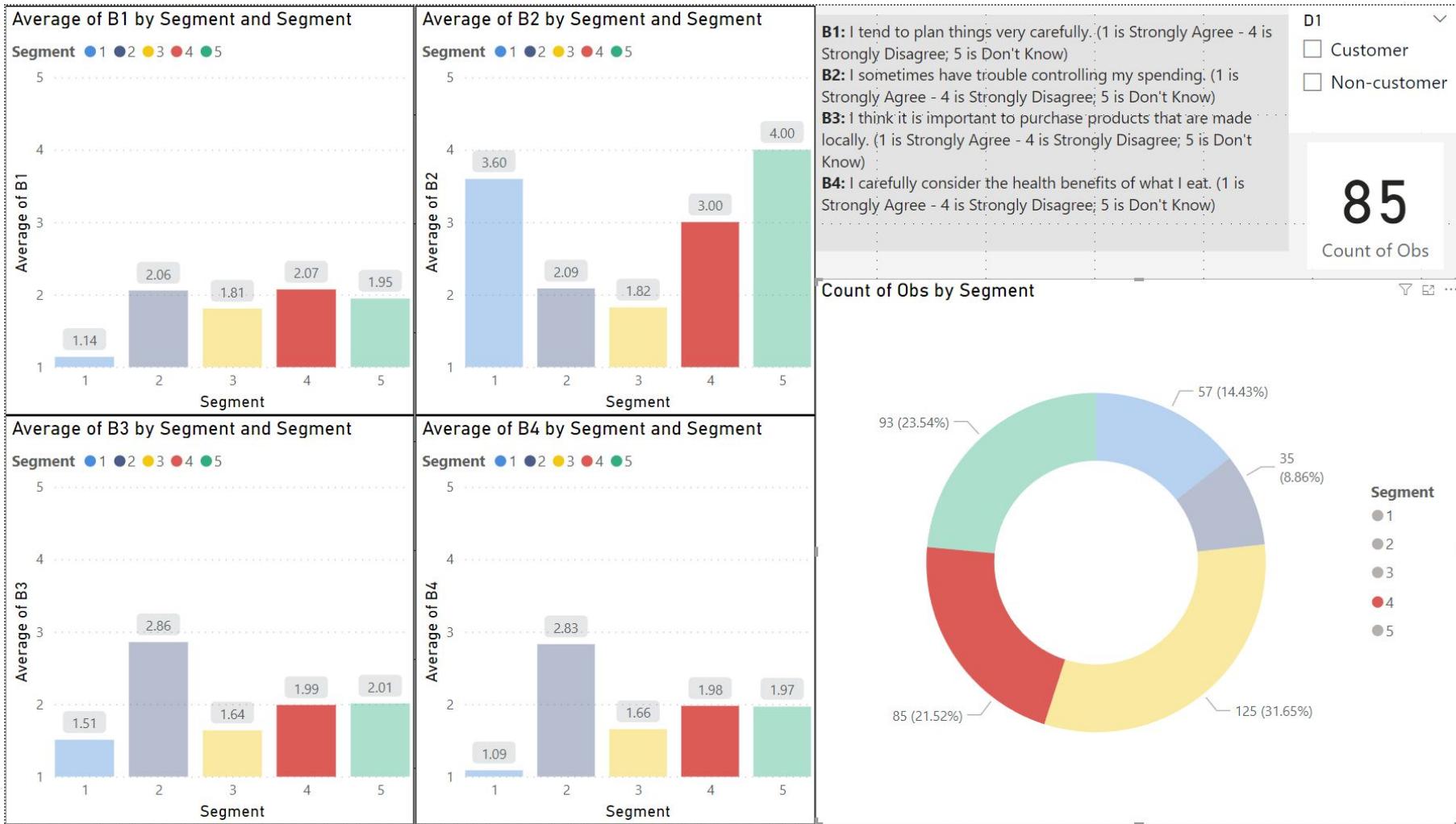
D1  
 Customer  
 Non-customer

125

Count of Obs

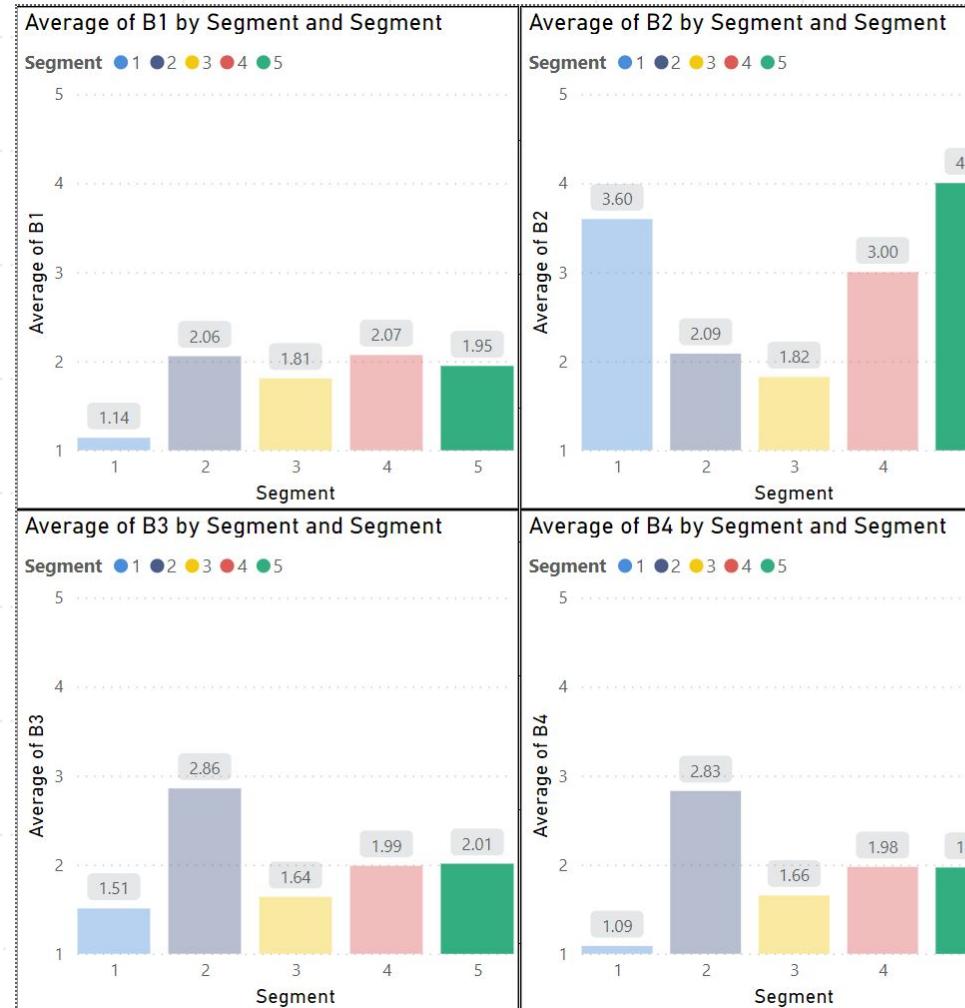
# Segment 4 - Deliberate Supporters of Health and Locality

- Careful planner
- Controlled spender
- Local supporter
- Very health conscious



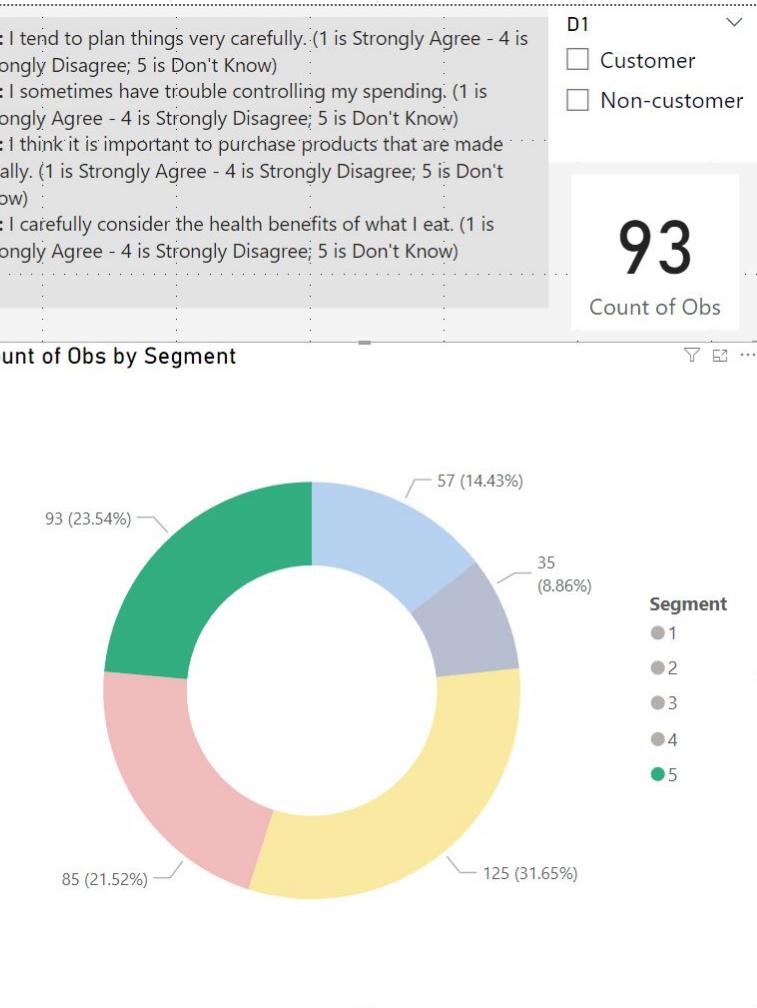
# Segment 5 - Disciplined Local and Health Proponents

- Careful planner
- Extremely controlled spender
- Local supporter
- Very health conscious



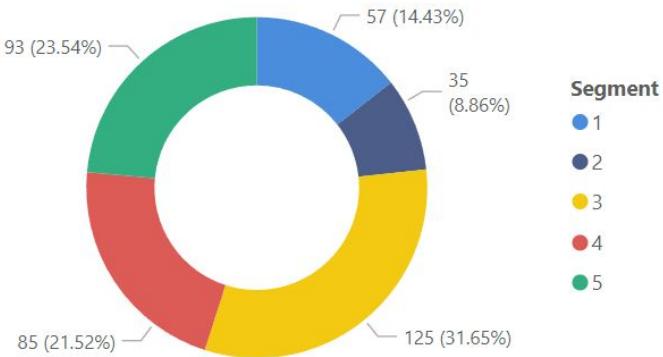
**B1:** I tend to plan things very carefully. (1 is Strongly Agree - 4 is Strongly Disagree; 5 is Don't Know)  
**B2:** I sometimes have trouble controlling my spending. (1 is Strongly Agree - 4 is Strongly Disagree; 5 is Don't Know)  
**B3:** I think it is important to purchase products that are made locally. (1 is Strongly Agree - 4 is Strongly Disagree; 5 is Don't Know)  
**B4:** I carefully consider the health benefits of what I eat. (1 is Strongly Agree - 4 is Strongly Disagree; 5 is Don't Know)

Count of Obs by Segment

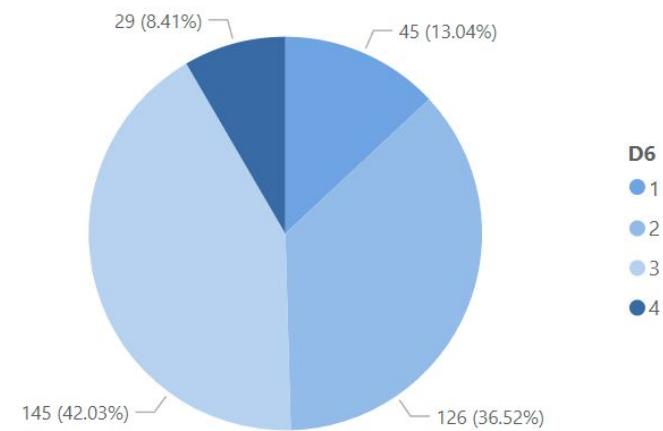


# Descriptor - Age

Count of Obs by Segment

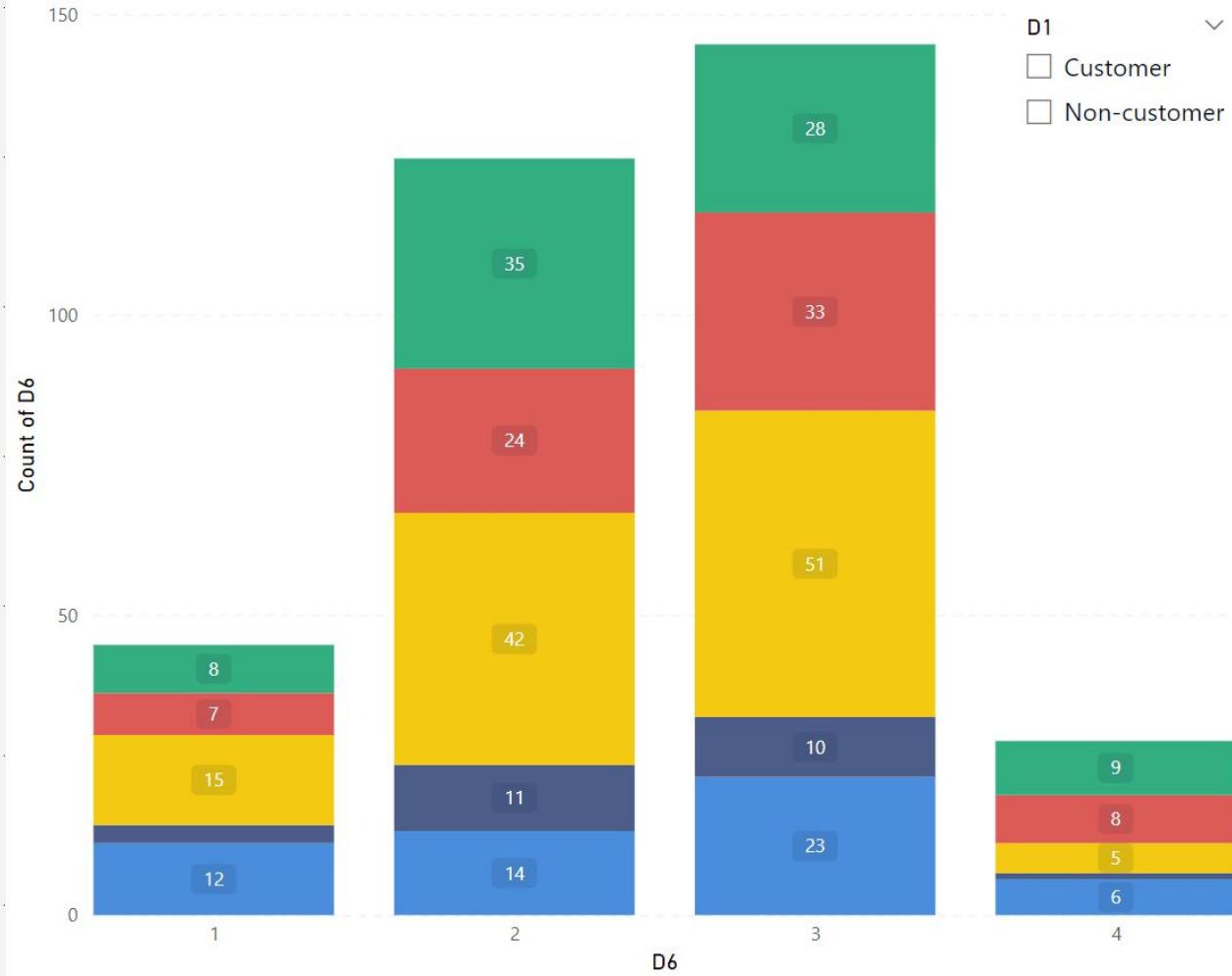


Age Distribution



Age by Segment

Segment ● 1 ● 2 ● 3 ● 4 ● 5



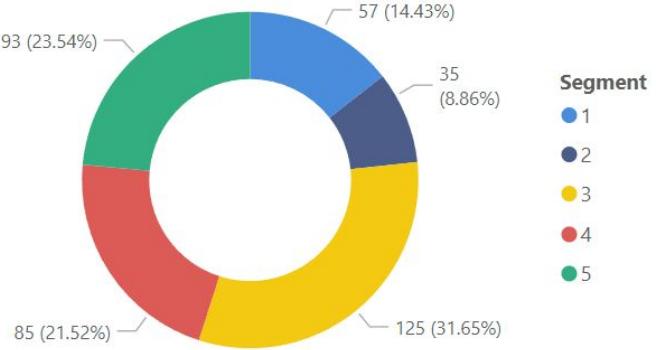
1: 25 or younger  
2: 26-40  
3: 31-65  
4: 66 or older

D1  
Customer  
Non-customer

- All segments have similar proportion of members in each age range

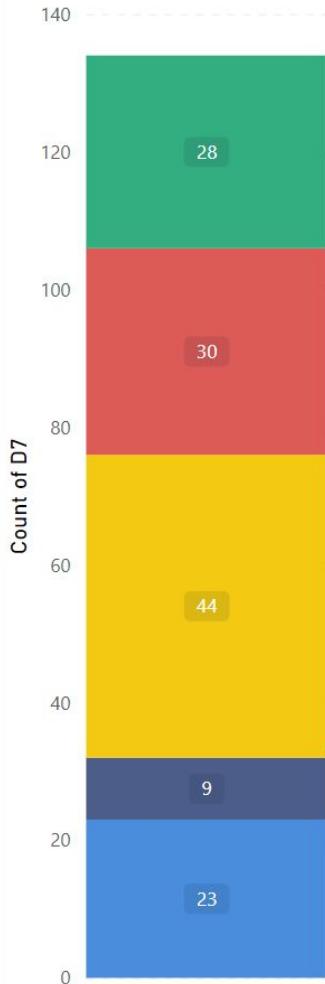
# Descriptor - Income

Count of Obs by Segment

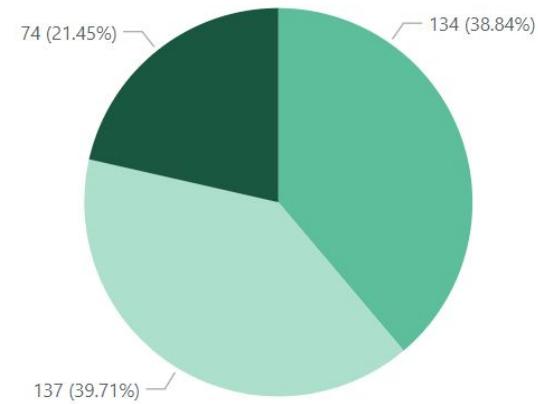


Count of D7 by D7 and Segment

Segment ● 1 ● 2 ● 3 ● 4 ● 5



Count of D7 by D7



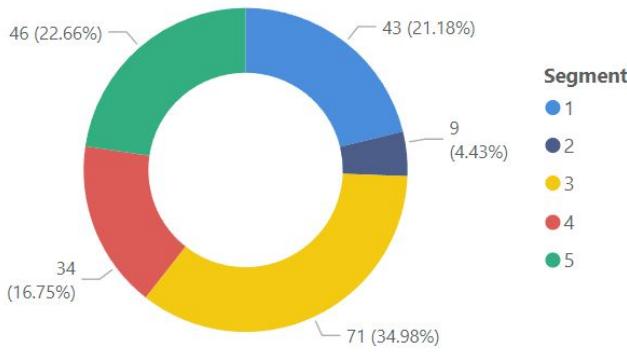
1: < \$50K  
2: \$50K - 100K  
3: > \$100K

D1  
Customer  
Non-customer

- Most of the market falls within 0 – 100K for income

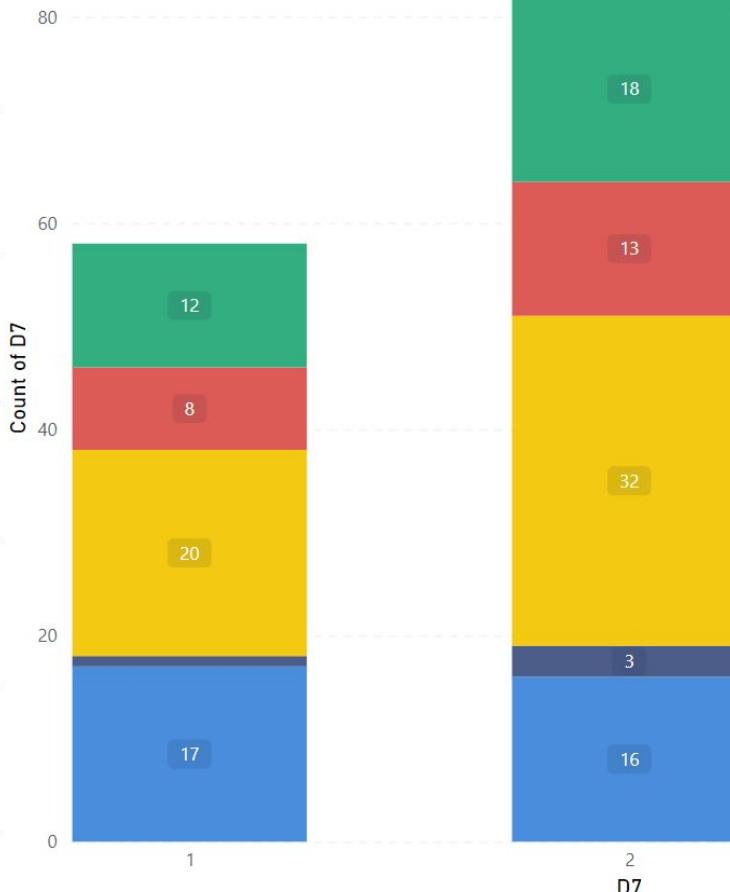
# Descriptor – Income (customers)

Count of Obs by Segment

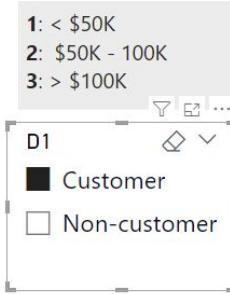
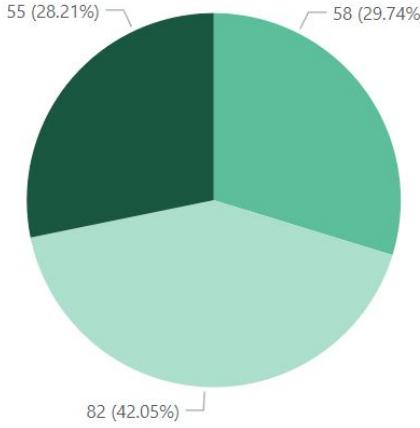


Count of D7 by D7 and Segment

Segment ● 1 ● 2 ● 3 ● 4 ● 5



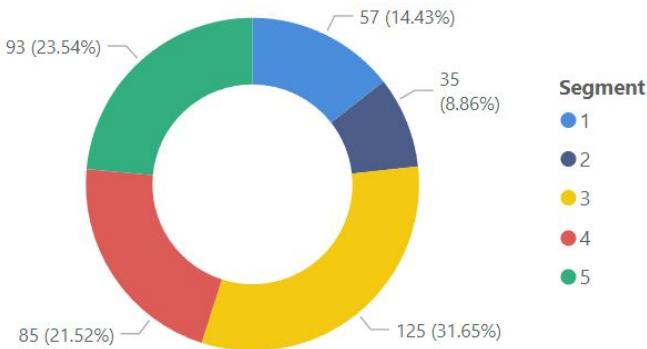
Count of D7 by D7



- When splicing by current customers, the peak of the income is \$50K - \$100K

# Descriptor – Household Type

Count of Obs by Segment



Count of D8 by D8 and Segment

Segment ● 1 ● 2 ● 3 ● 4 ● 5

200

150

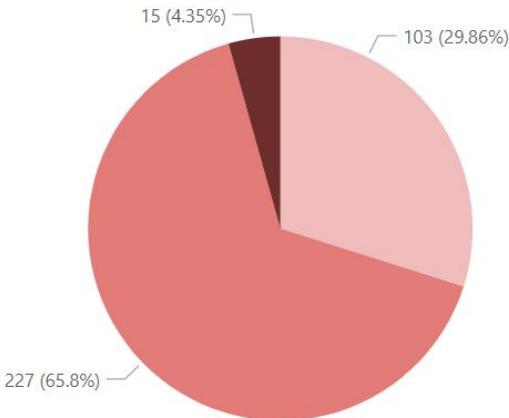
100

50

0

Count of D8

Count of D8 by D8



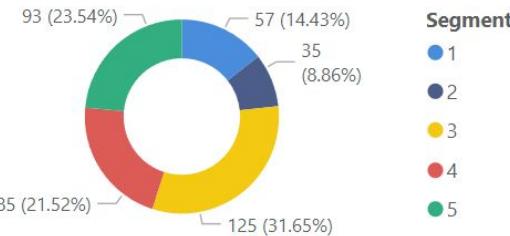
1: Single  
2: Couple/Family  
3: Other/Shared

D1  
Customer  
Non-customer

- Majority of the market is Couple/Family household

# Descriptor – Lunch Decisions

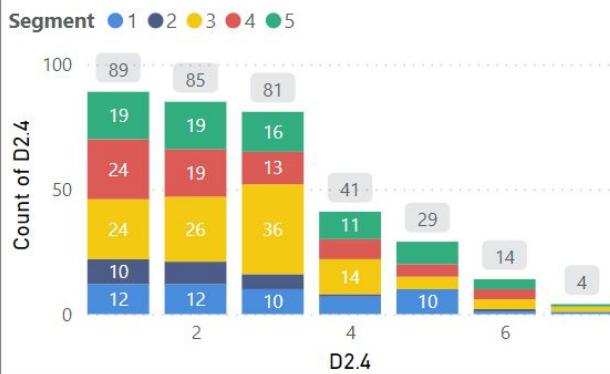
Count of Obs by Segment



Count of D2.1 by D2.1 and Segment



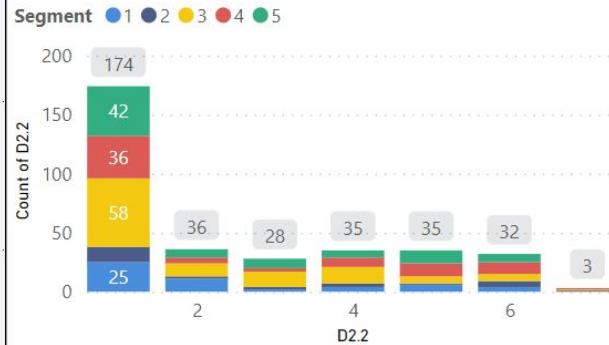
Count of D2.4 by D2.4 and Segment



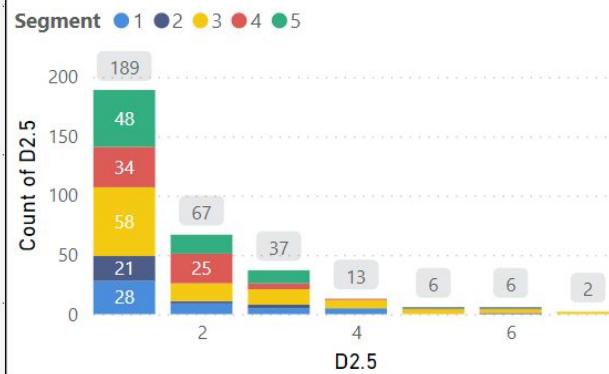
- D2.1: How many times in the last week did you do the following? - Make/eat lunch at home
- D2.2: How many times in the last week did you do the following? - Bring lunch to work
- D2.3: How many times in the last week did you do the following? - Buy lunch at work
- D2.4: How many times in the last week did you do the following? - Buy lunch at restaurant
- D2.5: How many times in the last week did you do the following? - Skipped lunch
- D2.6: How many times in the last week did you do the following? - Other

D1  
 Customer  
 Non-customer

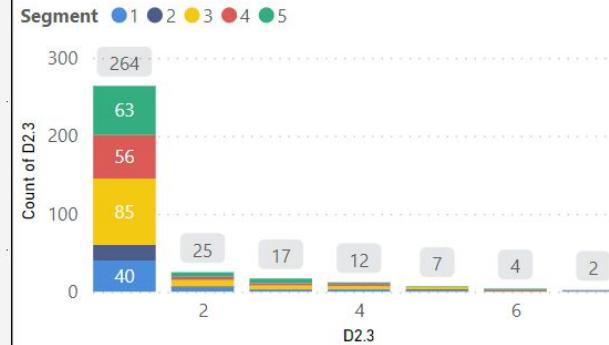
Count of D2.2 by D2.2 and Segment



Count of D2.5 by D2.5 and Segment



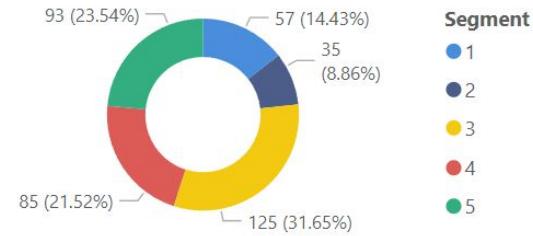
Count of D2.3 by D2.3 and Segment



- Segment 3 and 5 bought lunch at restaurants much more than other segments.

# Descriptor – Restaurant Factors

Count of Obs by Segment



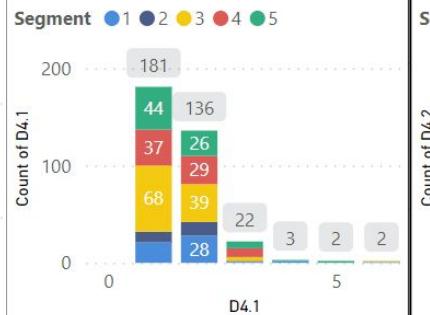
- D4.1:** Please indicate how important the following factors are when you visit a restaurant - Convenient  
**D4.2:** Please indicate how important the following factors are when you visit a restaurant - Variety  
**D4.3:** Please indicate how important the following factors are when you visit a restaurant - Value  
**D4.4:** Please indicate how important the following factors are when you visit a restaurant - Healthy  
**D4.5:** Please indicate how important the following factors are when you visit a restaurant - Taste  
**D4.6:** Please indicate how important the following factors are when you visit a restaurant - Staff  
**D4.7:** Please indicate how important the following factors are when you visit a restaurant - Ambiance  
**D4.8:** Please indicate how important the following factors are when you visit a restaurant - Consistency  
**D4.9:** Please indicate how important the following factors are when you visit a restaurant - Community  
**D4.10:** Please indicate how important the following factors are when you visit a restaurant - Other

D1

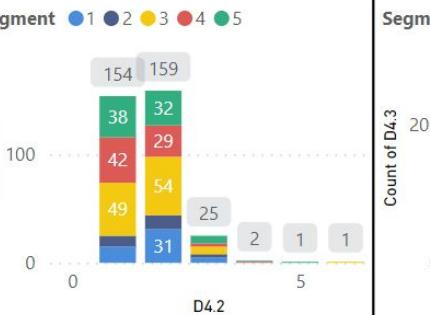
- Customer
- Non-customer

- All segments answered similarly

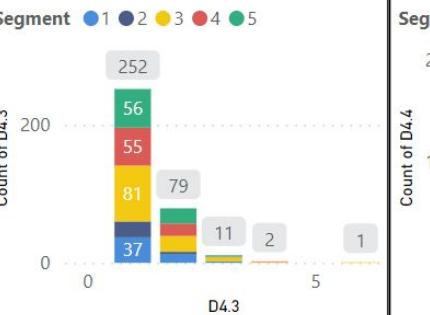
Count of D4.1 by D4.1 and Segment



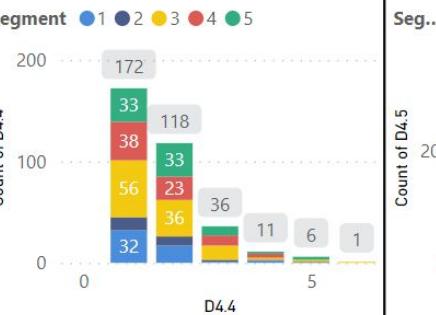
Count of D4.2 by D4.2 and Segment



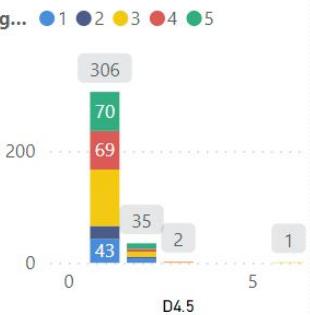
Count of D4.3 by D4.3 and Segment



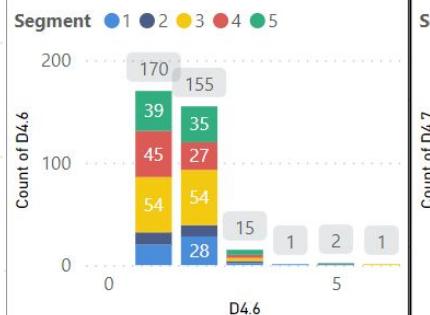
Count of D4.4 by D4.4 and Segment



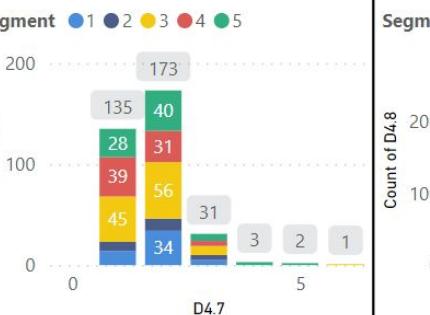
Count of D4.5 by D4.5 and Segment



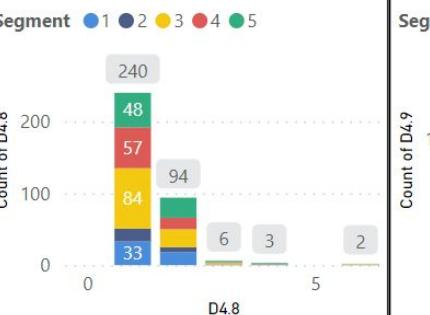
Count of D4.6 by D4.6 and Segment



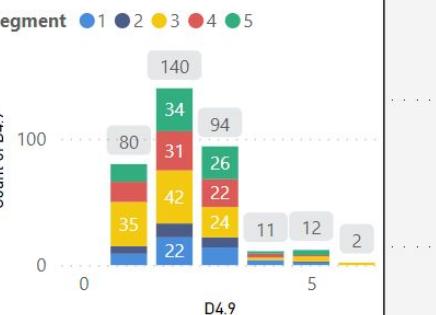
Count of D4.7 by D4.7 and Segment



Count of D4.8 by D4.8 and Segment

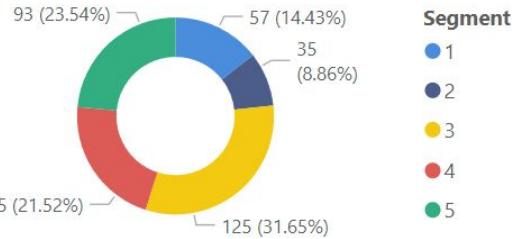


Count of D4.9 by D4.9 and Segment



# Descriptor - Profession

Count of Obs by Segment

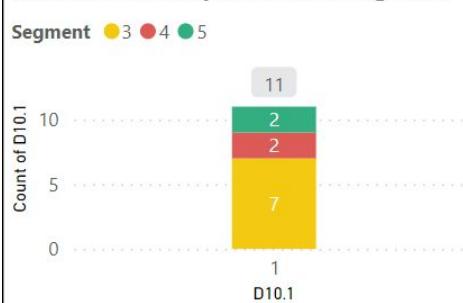


- D10.1: What is your profession? - Accountant
- D10.2: What is your profession? - Lawyer
- D10.3: What is your profession? - General purpose contractor
- D10.4: What is your profession? - Design
- D10.5: What is your profession? - Educator
- D10.6: What is your profession? - Homemaker
- D10.7: What is your profession? - Business professional
- D10.8: What is your profession? - Other

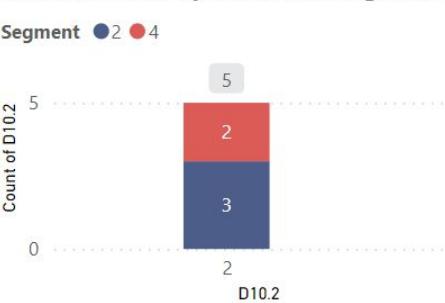
D1  
 Customer  
 Non-customer

- Most common profession: business professional

Count of D10.1 by D10.1 and Segment



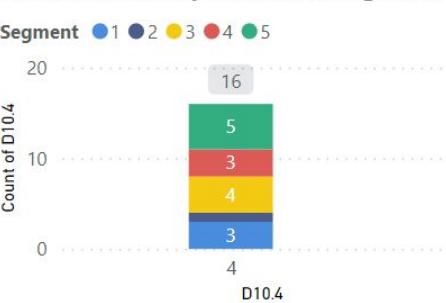
Count of D10.2 by D10.2 and Segment



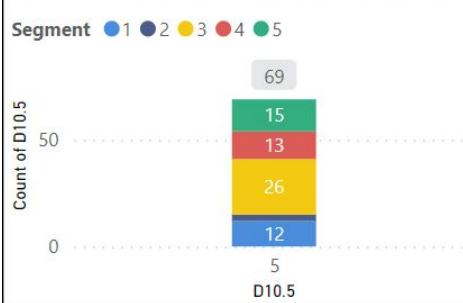
Count of D10.3 by D10.3 and Segment



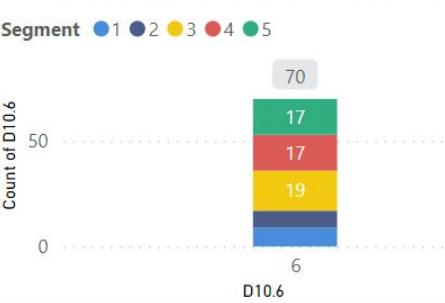
Count of D10.4 by D10.4 and Segment



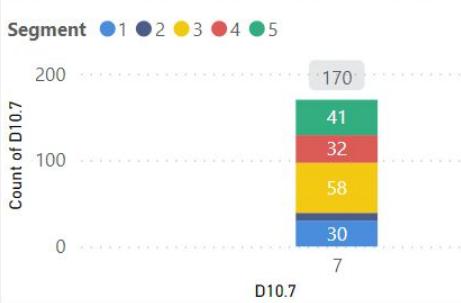
Count of D10.5 by D10.5 and Segment



Count of D10.6 by D10.6 and Segment



Count of D10.7 by D10.7 and Segment



Segment Count of D10.8

Segment	Count of D10.8
1	22
2	11
3	47
4	28
5	38
Total	146

# Which Segments to Target? (2c)

- We choose that is best to target: **Segments 3 and 5**
- Both have similar needs and desires:
  - Strong preference for local restaurants
  - Very health conscious
  - Careful planners
- Segments only differ in spending control
  - 3 has trouble controlling spending, while 5 is very controlled
- Segments 3 and 5 make up for nearly 55% of the market, based on the surveys
  - These segments also purchased lunch at restaurants more per week than other the segments

Given that Sticks focuses on high-quality, healthy food that it can deliver quickly, Sticks successfully meets the needs and desires of segments 3 and 5. These segments have also been shown to be financially valuable through their purchase decisions related to lunch.

# Recommendation on Next Location (3)

Loc.	Pop.	Median Age	Median Income	Consumer Spend	Consumer Spend Per Household	Major Customer Profiles
A	29,321	39.1	\$92,700	\$722M	\$62,404	Middleburg managers, Movers & Shakers, Upper Crust, Gray Power, Empty Nests
B	34,183	32.5	\$31,900	\$482M	\$36,720	American Classics, American Dreams, Aspiring A-listers, Back Country Folks
C	42,913	32.5	\$55,700	\$754M	\$46,828	Winner's Circle, Kids & Cul-de-Sacs, Cruisin to Retirement, Beltway Boomers, Executive Suites
D	57,509	34.8	\$75,500	\$1,184M	\$57,880	Striving Selfies, Upward Bound, Generation Web, Young and Influential, Up and Comers

# Recommendation on Next Location (3)

- Median age falls within 26-65 (32.5)
- Median income falls within \$50K - \$100K
- **Major profiles matched up best to attributes of target segments:**
  - Profile themes: Wealthy middle age, upscale middle-aged family mix, upscale middle-aged mostly w/ kids
  - Given that we want to target people within the ages of 26-65, business professionals, income \$50K - \$100K, and couple/families, the major customer profiles of location C best satisfied these conditions.

# Recommendation on Next Location – Positioning (3)

- Emphasize the following:
  - Made for the busy families and anyone looking for a quick and healthy meal
    - Quick business lunch with spacious indoors, or take-home dinner for the family
  - Food made from fresh ingredients

## Positioning statement example:

Sticks is the go-to destination for busy families and professionals seeking quick, healthy meals crafted with fresh ingredients for a quick upscale dining experience on the go.

