

# Survey 2

Statenfreude

## Questions

We decided to select questions 1 & 2 from our survey.

**Question 1:** Please rank the following stores in order of your preference (1-4) for a new store in Laramie.

**Question 2:** Please rank the following characteristics of each store: price, quality, and variety.

## A priori hypotheses

The survey questions generated a number of hypotheses. We explored the 3 listed here.

- 1) For question 1, we expected Target and Costco to be rated the highest out of the four options.
- 2) There was an alternate hypothesis that Trader Joe's and Whole Foods might be more popular with students given that students are probably most interested in food options rather than general shopping.
- 3) Target has been experiencing push back on DEI business decisions and that may affect its ranking.
- 4) For question 2, we expected that the mean (combined price, quality, and variety scores) of overall approval of Whole Foods will be higher for individuals who rated Target higher than Costco in question 1. This is based on the impression that ranking Target above Costco implies cost may be less important to ranking, which would diminish one of the most salient cons of Whole Foods (price).

We did not capture demographic data, but nearly all of our sampling was conducted in the student union, so most of the survey respondents are very likely to be students at the university.

## Results question 1

### Hypotheses 1-3

The mean rankings and other descriptive statistics are listed in the table below. The highest ranked store was Target, followed by Costco. This is counter to the second hypothesis about store rankings but may support the first. Target did rank the highest in the survey, which runs counter to the hypothesis that Target is perceived in a negative light. However, the survey was not designed to explore this question, so no firm conclusions can be drawn from this result.

Table 1: Descriptive statistics for store rankings.

Store	Avg	Std dev	Min	Max	Median
Target	2.1	0.98	1	4	2
Whole Foods	3.1	1.03	1	4	3
Costco	2.3	1.05	1	4	2
Trader Joe's	2.5	1.19	1	4	2

### Comparison of store rankings

Lower scores indicate a higher preference



Data points have been jittered both vertically and horizontally to prevent overplotting.

### Hypothesis 4

For respondents who rank Target above Costco, the aggregate rating score is 2.95. The aggregate rating score for respondents who rank Costco above Target is 3.32. This result is counter

to what was initially hypothesised.

## Question 2

The second survey question asks respondents to rate each store on 3 characteristics: price, quality, and variety. Each characteristic is measured on a multiple rating scale from 1 (poor) to 5 (excellent). The average characteristic score for each store is presented in the heat map below.



Figure 1: Heatmap of store characteristics. Darker colours indicate higher rankings.

Costco rates the highest of the 4 stores across each characteristic. Costco was noted ranked the highest in question 1, so it is interesting that it is rated highest in both price and variety and equivalent to Whole Foods and Trader Joe's on quality. This could be a situation where respondents are not consistently applying transitivity of rankings. A future survey design would need to take this into account.

## Challenges

### Question 1

- Missingness

- People misunderstood the question and circled instead of ranking
- These responses were coded as NAs
- Scale use ambiguity
  - Failed to define 1 as highest or lowest preference
  - We assume 1 = highest preference for analysis
  - No way of knowing if/which respondents interpreted different to us

## **Questions 1 & 2**

- Inapplicability
  - Some respondents had never been to some of the stores
  - One instance of NA response (when respondent asked and was told to write NA)
  - Overall ambiguity of ‘No opinion’ response option -> Does this mean neutrality or inapplicability?

## **Overall**

- Undefined population
  - No target population
  - No demographic information collected
  - Limits our conclusions
  - Unable to explore further questions

## **Conclusion**

- Target received the highest ranking across the four stores
- Tension between results of items 1 and 2
- Mean Whole Foods ranking in item 2 is lower for respondents who ranked Target higher than Costco in item 1