BETTER IN BULK?

WHAT THE CONSUMER HABITS OF CAP 5771 CAN REVEAL COMPARED ALONGSIDE THE AVERAGE COSTCO CUSTOMER

By Hayden Kirkeide and Alan Van Etten

INTRODUCTION

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- Costco Wholesale: membership-based wholesale retail chain founded in 1983
  - 1976: The first official store opens in San Diego, California, operating under a different company that merged with the Costco corporation in 1993
  - Today: locations in 14 different countries across 4 continents

- Mission statement: to provide products ranging from produce, furniture, and even insurance and tires of the "best value" it can possibly provide

- 76.2 million Costco membership holders - 2024 fiscal year documents
  - 7.3% YOY increase compared to 2023
  - Also taking into account a $5.00 membership price increase in September 2024

- Demographics tend to skew towards middle-aged individuals with families, but recent demographic inquiries have shown consistent growth in new memberships belonging to millennials (30 - 35 y/o) and Generation Z (20 - 25)

RESEARCH

RESEARCH QUESTIONS

Our guiding research questions:

1. What do the motivations and benefits of shopping at Costco versus other stores tell us about our demographic as students that are young adults?

2. Do our class's Costco and general shopping habits provide insight into the global trends of Costco consumers when compared against them?

3. What can the limited study of our consumer habits – while of varied socioeconomic circumstances – as students in this time of economic uncertainty reveal about consumer habits in the modern day?

PAST RESEARCH

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- Nilsson et al. (2014) classified types of shoppers by frequency of trips and choice of store format and found significant differences between the demographic characteristics of the classes. In particular, household size, access to transportation and age were all noticeably different between groups.

- Prasad (2010) analyzed markets in India. Identified age, income, family size, travel distance, gender, education, and occupation as significant factors in choice of store.

- Bai et al. (2008) analyzed markets in Qingdao, China, finding higher income and access to transportation significant predictors for the likelihood that a person may shop at larger supercenters.

- These studies indicate a level of universality in the factors' influences on consumer behavior, with similar findings across a variety of societies. Additionally, while income and access to transportation are recurring factors, young adults are known for their lack of both, yet Costco membership among young adults seems to be increasing.

NOVELTY

- Narrowing focus to one specific demographic group

- Aimed at Costco in particular rather than analysis over a group of stores

- Potential changes in trends over time, especially in a post-COVID market

- Goal of comparing against global trends rather than determining global trends

ALGORITHMIC

ALGORITHMIC PROCESSES

- Using Python via Google Colab

- Storing the survey data in Excel, importing as a dataframe

- Exploratory analysis provided by Google Forms

- Statistical analysis: Chi-square tests, ANOVA tests

- Modelling: linear regression, logistic regression, k-means clustering, multi-layer perceptron

EXPERIMENTS &

EXPERIMENTS AND ANALYSIS

- Chi-square tests for independence between the various attributes being analyzed

- ANOVA tests to search for correlations between the categorical demographic attributes and the continuous shopping attributes

- Linear regression to visualize the relationship between the separate shopping attributes

- K-means clustering to find common groupings of demographic attributes within a range of shopping attribute values

- Logistic regression and a multi-layer perceptron for predictive analysis, cross-validated and using previous tests as a baseline for which attributes to include and their starting weights in order to predict membership/non-membership based on demographic characteristics

DATASETS

DATASETS

EARNINGS DOCUMENTS

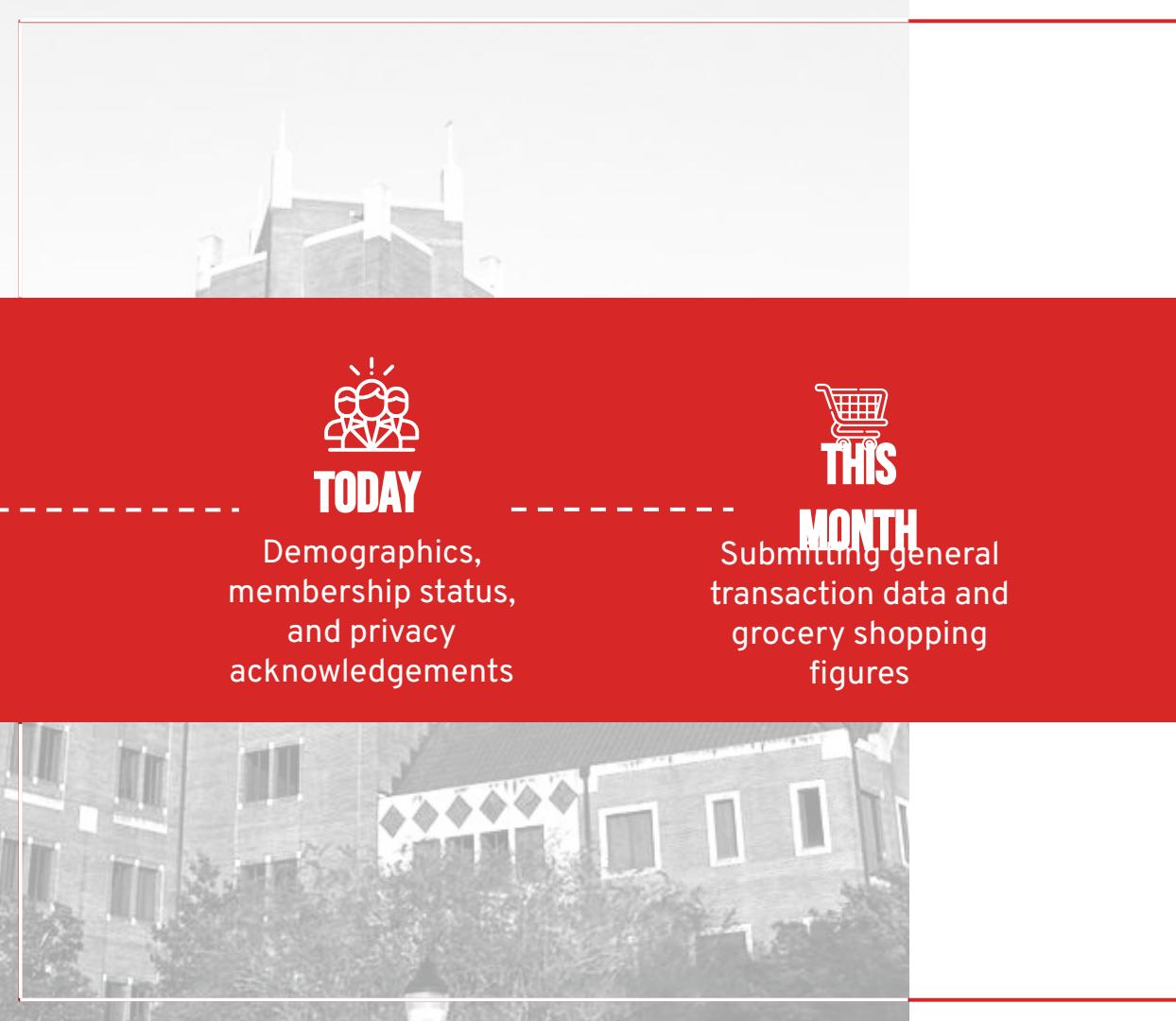Include growth in membership and revenue

VERIFIABLE FIGURES

Websites performing independent studies with verified results

YOU!

Survey responses of demographic and transaction data

SURVEYS

TODAY

Demographics, membership status, and privacy acknowledgements

THIS MONTH

Submitting general transaction data and grocery shopping figures

SURVEY DESCRIPTIONS

SURVEY INFORMATION

Preliminary Survey:

- Split into 3 parts:
  - Demographics and Personal Information
    - **Please sign in with your Florida State email address**
      - This will allow us to give you a unique 3-digit Personal ID (PID) to keep your information anonymous in subsequent surveys
      - Hayden (hlk21@fsu.edu) will email you with your PID after you submit
    - Age range
    - Employment status
    - Privacy and contact acknowledgements

SURVEY INFORMATION
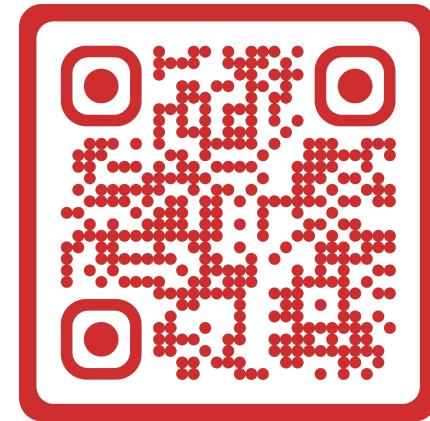
Preliminary Survey:

- Split into 3 parts:
  - General Costco/Grocery Shopping Habits
    - Costco membership status
      - **If you don't have a Costco membership, you will still be able to participate in the surveys**
    - Frequency of Costco/grocery shopping trips
    - Average cost of shopping trip
    - Average time spent on shopping trip

SURVEY INFORMATION

Preliminary Survey:

- Split into 3 parts:
  - Respondent Feedback
    - Any questions or suggestions regarding your participation in the survey
    - Expanding on any responses you think necessary
    - If you have any concerns about your responses
    - Or tell us a story!

SURVEY INFORMATION

Weekly Costco/Grocery Shopping Survey:

- 5 weeks of submission:
  - Frequency and Transaction data
    - Cost of your trip
    - Date of your trip
    - Time you spent in the store
    - Additional information to be determined
  - There will be a discussion post at the beginning and end of each week (i.e. Monday and Friday) that will serve as reminders
    - The survey link will be in each post so you don't need to keep track of it
  - Dates of discussion posts:
    - Week 1: Friday October 10th
    - Week 2: Monday, October 13th; Friday, October 17th

TIMELINE

SIGNIFICANT DATES

OCTOBER 8TH — Project proposal presentation

OCTOBER 10TH — Weekly shopping survey first posted

NOVEMBER 7TH — Weekly shopping survey final reminder

NOVEMBER 8TH — Final analysis begins

NOVEMBER 25TH — Final report submitted

WEEK-BY-WEEK: OCTOBER

OCTOBER 8TH — Project proposal presentation

OCTOBER 10TH - 18TH — Collection of data, preliminary descriptive analysis

OCTOBER 19TH - 25TH — Continued data analysis and descriptive analysis

OCTOBER 26TH - NOVEMBER 1ST — Continued data collection, preliminary ANOVA and Chi-square analysis

WEEK-BY-WEE K: NOVEMBER

NOVEMBER 2ND - 8TH
Data collection complete, linear regression and K-means clustering

NOVEMBER 9TH - 15TH
Logistic regression and multi-layer perceptron

NOVEMBER 16TH - 22ND
Finalizing conclusions and writing final report

NOVEMBER 23RD - 25TH
Editing final report for submission on 25th and preparing final presentation

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? QUESTION

For concerns regarding survey:
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