# Capstone Project
# Cart Abandonment

*Understanding & Optimizing Digital Ordering Behavior through Google Analytics*

Claranne Fechter, Bryson Burr, Carl Freeze

# Overview

- Business Problem

- Approach

- Distribution of Behaviors

- Analytical Results

- High Risk Behaviors

- Business Impact

- Tactical Targeting

- Challenges

- Future Analysis

- Recommendations

# Business Problem

- **Cart abandonments**

- **Loss in potential revenue**

# Approach
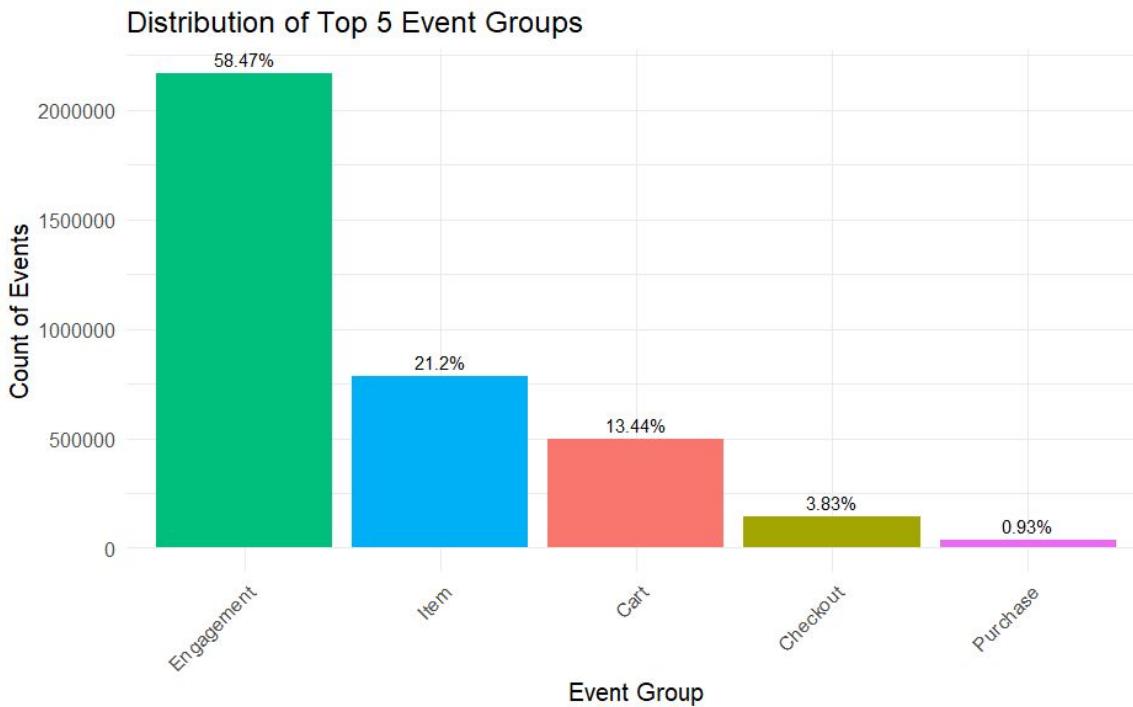
✓ **Analyze customer behavior**

✓ **What leads to abandonment?**

# Distribution of Behaviors

~58% standard engagements

~21% interactions with items

~13% cart behaviors

~4% checkout events

~1% purchase activity



Distribution of Top 5 Event Groups

# Analytical Results

## Modeling

- Raw event models -> Low AUC

- Logistic Regression AUC: 0.895

- Random Forest AUC: 0.98

## Results

- Heavy browsing without checkout

- Remove after adding item to cart

SWIRE COCA-COLA
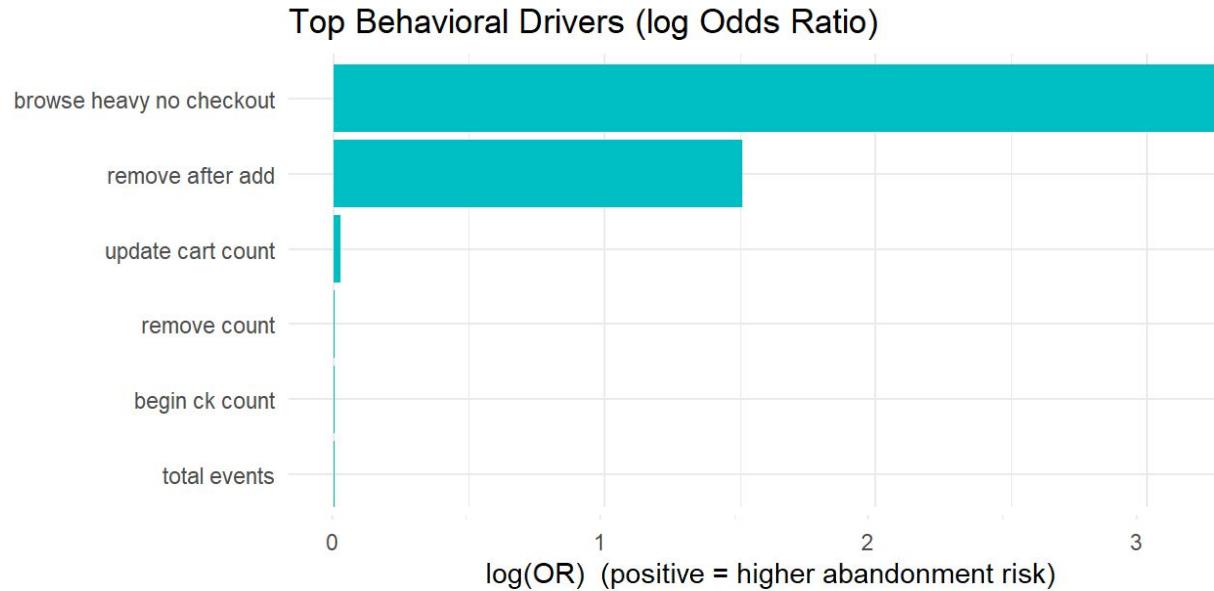
# High Risk Behaviors

## Heavy Browsing, No Checkout
26 times more likely to abandon

## Remove after add
4.5 times more likely to abandon



Top Behavioral Drivers (log Odds Ratio)

| | |
|---|---|
| browse heavy no checkout | |
| remove after add | |
| update cart count | |
| remove count | |
| begin ck count | |
| total events | |

log(OR)  (positive = higher abandonment risk)
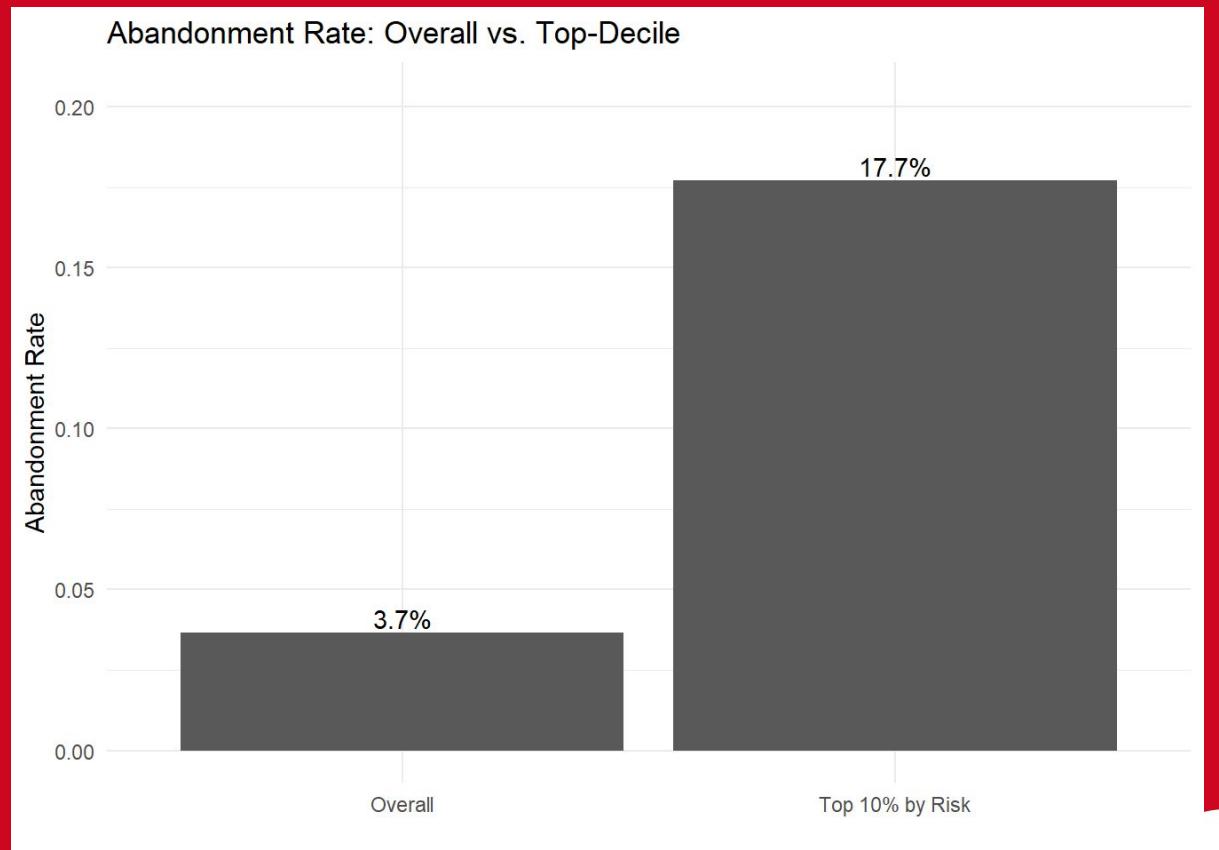
Direction   Decreases Odds   Increases Odds

# Business Impact

**Targeting high risk carts**

**14 percentage point lift**



Abandonment Rate: Overall vs. Top-Decile
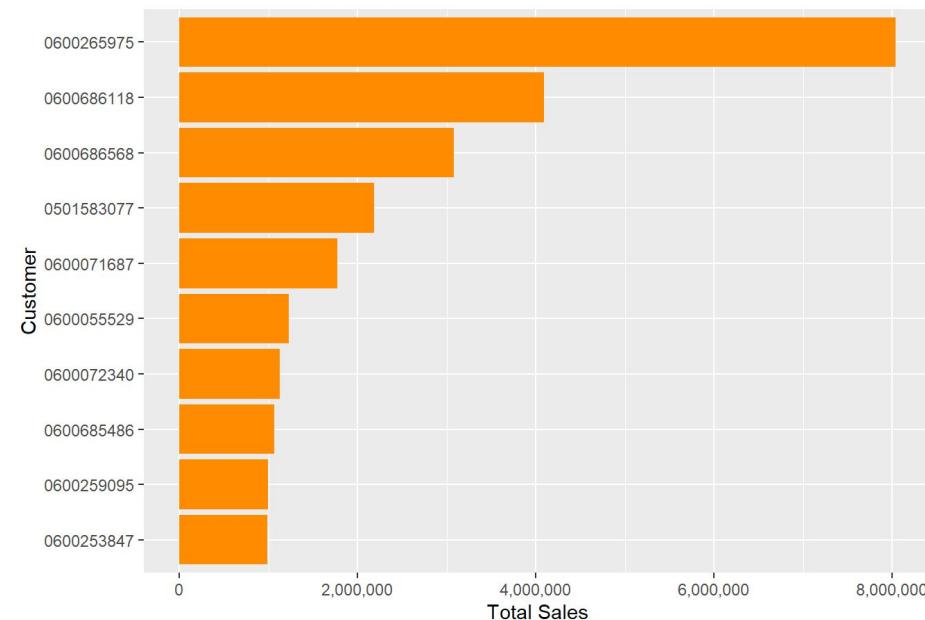
# Tactical Targeting

Sales highly concentrated in Top Customer       Plant G261 has highest volume of No Purchases

- Protect high value customers       • Focus efforts here to measure success
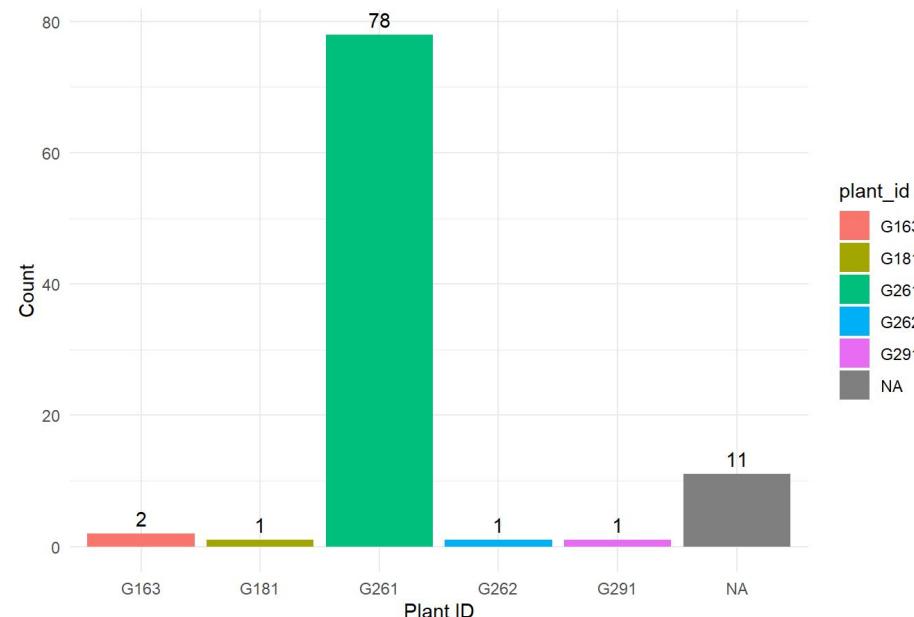


Top 10 Customers by Sales



No Purchase Orders by Plant

SWIRE COCA-COLA

# Challenges

**Complexities with Target Variable**

- Combine Anchor Date, Frequency, and Cutoff Time
- Policies constantly changing

**Over Optimistic Results**

- Data leakage from variables reflecting abandonment rather than predicting it

# Future Analysis

- Add in other features surrounding materials (target interventions at the product level)
- More advanced features like sequence of behaviors (create flow to prevent sequence from happening)
- Only looked at AUC, maximize profit (cost benefit analysis)
- Determine financial impact (what is the average cost per abandonment? What would the increase in profit be from decreasing abandonment from the top 10% high risk customers? Adding larger promotions and discounts at the cost of reducing abandonment?)

# Recommendations

- Live chat
- Save cart
- Checkout reminders
- Simplify user interface
- Discounts for bulk items



SAVE FOR LATER

# Questions?