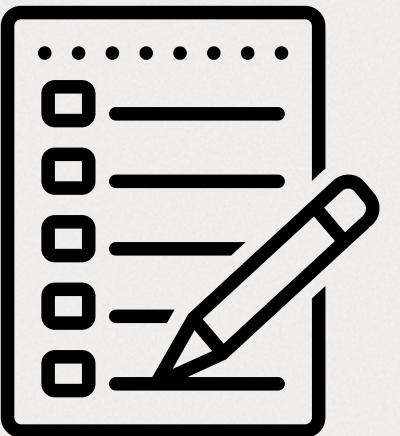


# Cart Abandonment

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# Agenda

- ▶ Introduction 01
- ▶ Exploring the Data 02
- ▶ Defining Abandonment 03
- ▶ Purchase to Cart Ratio 04
- ▶ Modeling Intervention Strategy 05
- ▶ Business Recommendations 06

Business Problem Statement

# Introduction

01

Adds Product to  
their online  
shopping cart

02

Decides not to buy  
the product

03

Leaves the website  
without buying  
anything

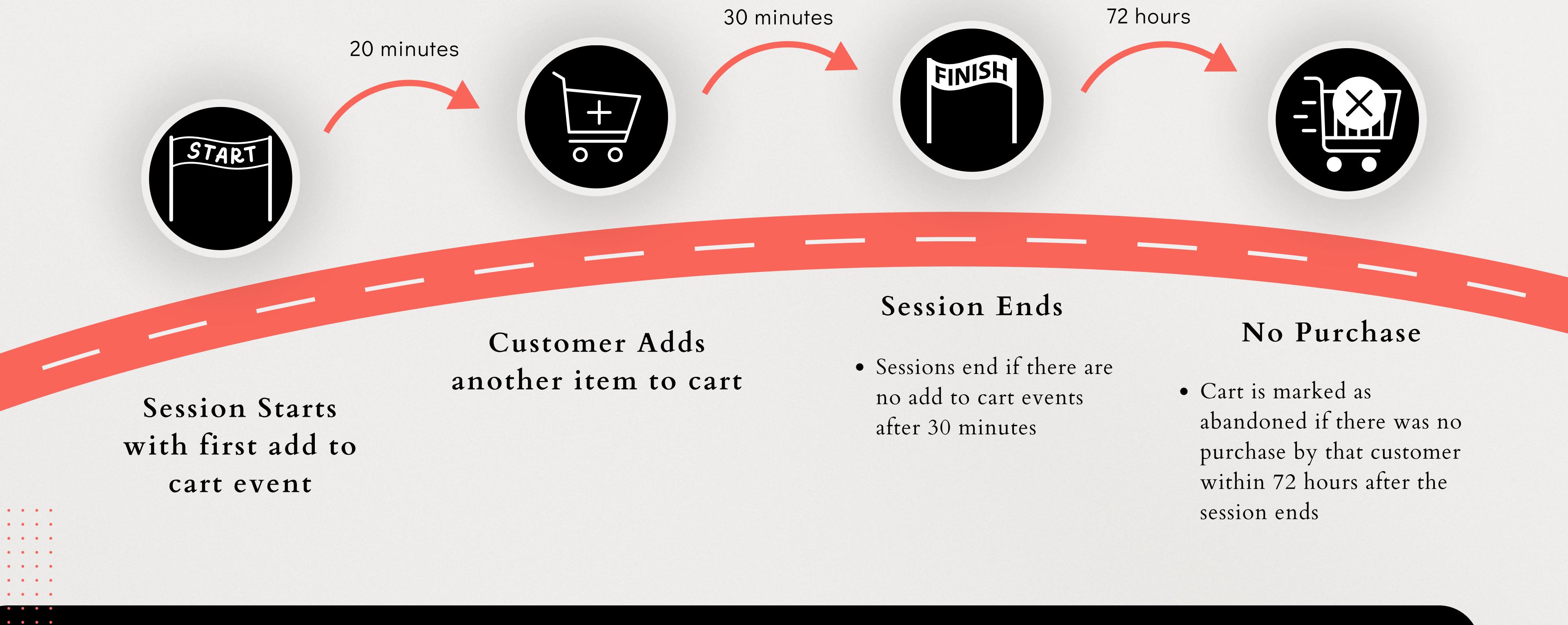
04

Does not buy  
through another  
format such as  
phone call.



# Defining Cart Abandonment

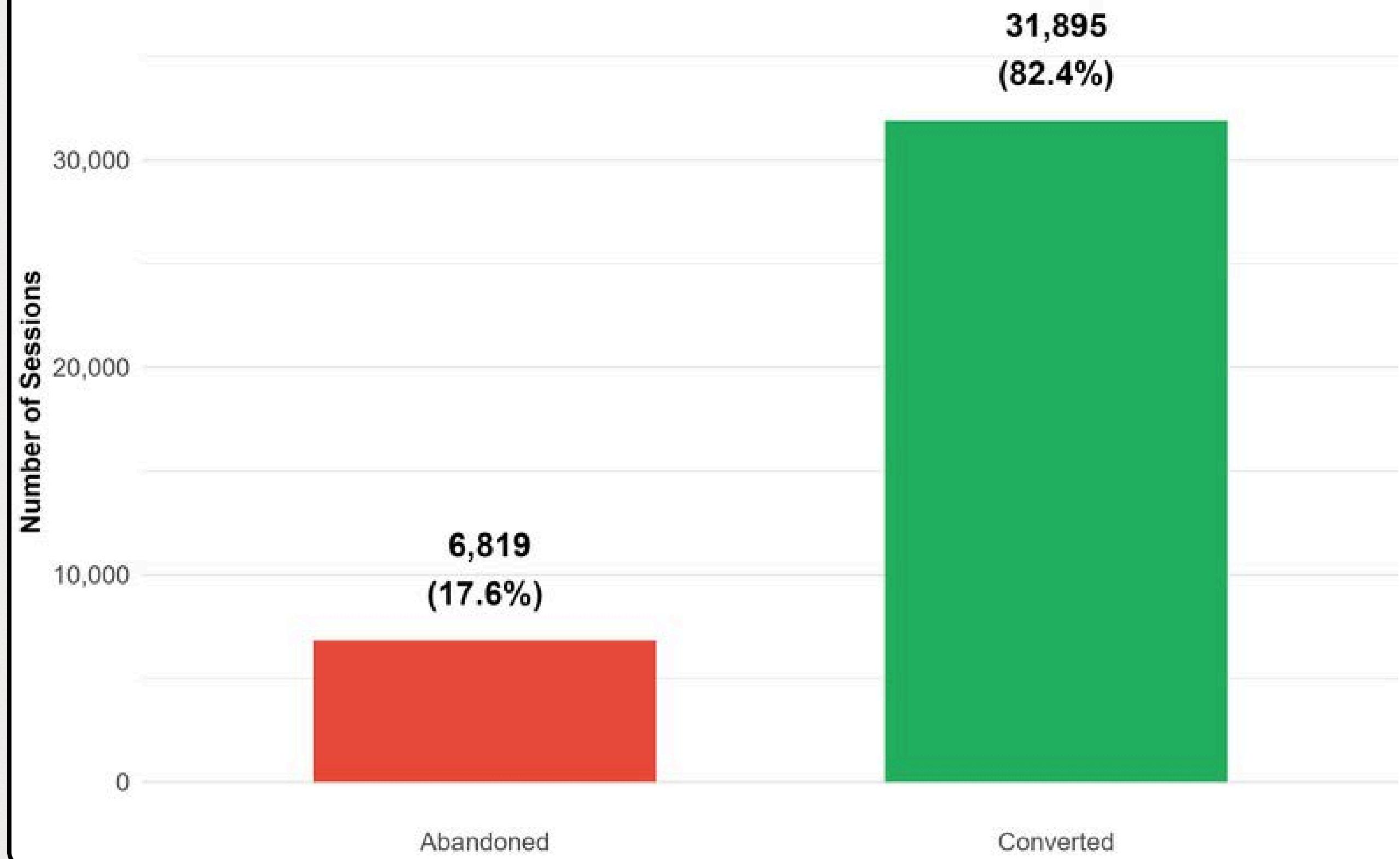
## Session Level by Customer



# Abandonment Overview

## Session Abandonment Overview

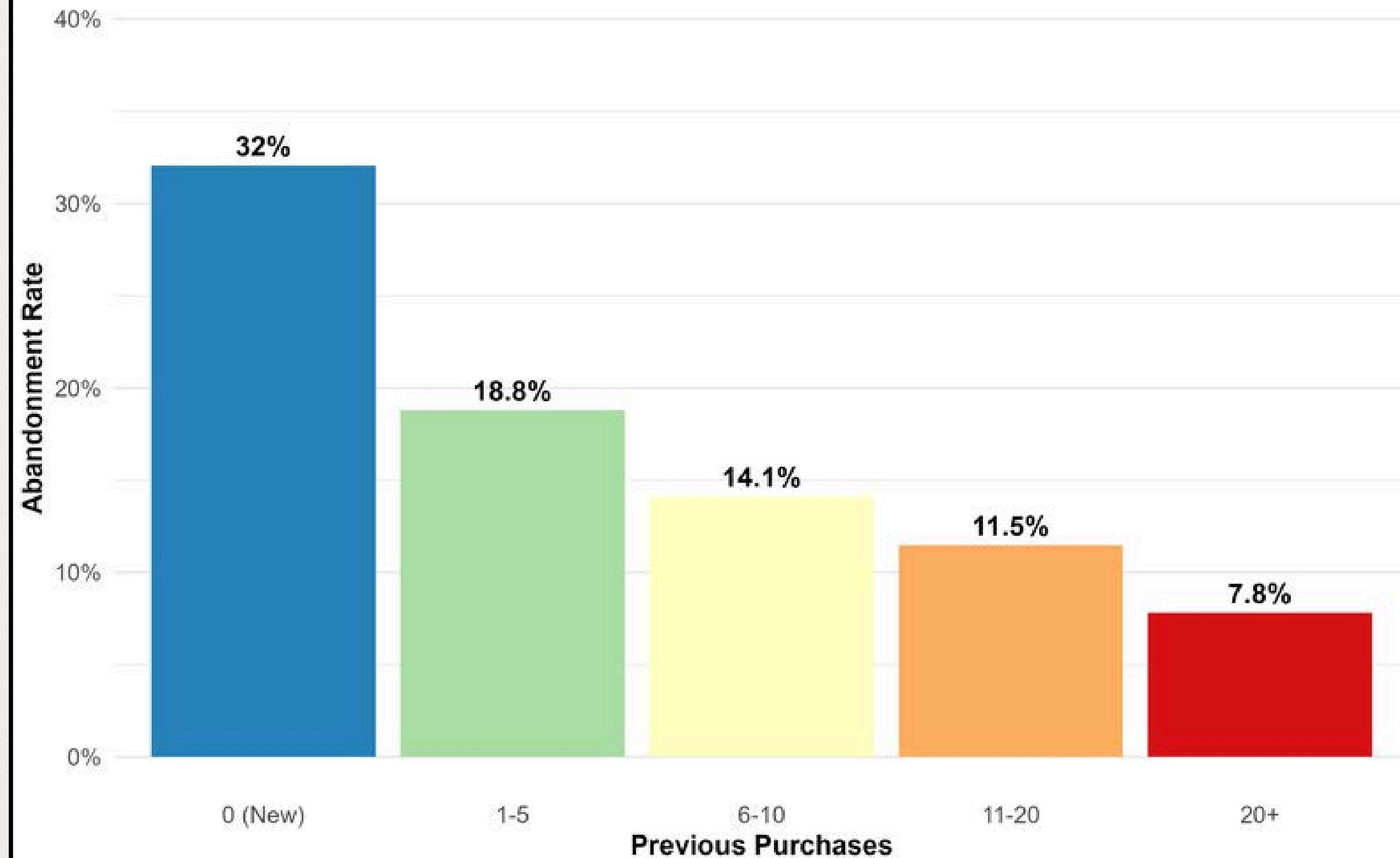
Overall abandonment rate: 17.6%



# Customer History

## Abandonment Rate by Customer Purchase History

New customers vs repeat customers



# Purchase to Cart Ratio

## ► Items Purchased / Items Added to Cart

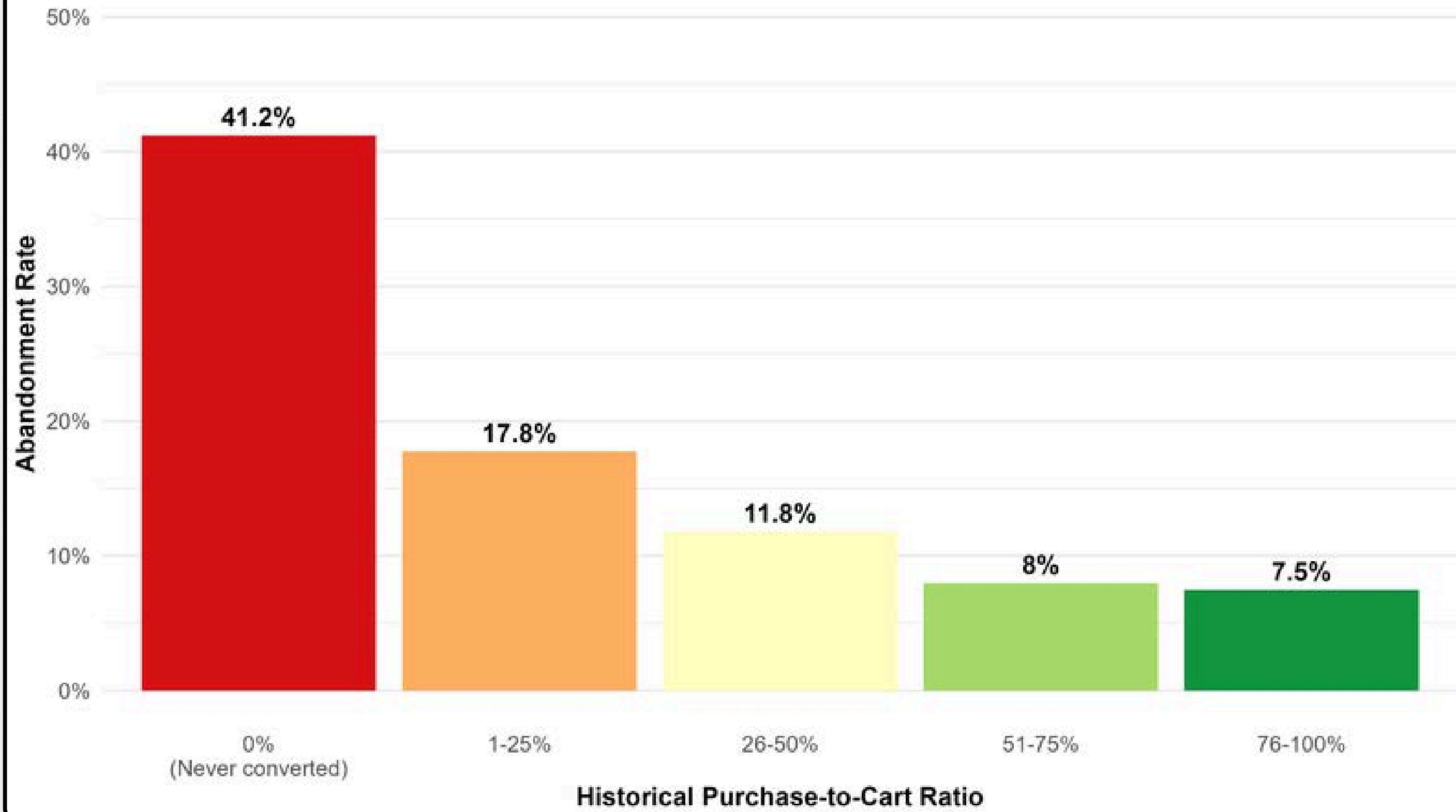
- We did account for data leakage in doing the ratio before each purchase



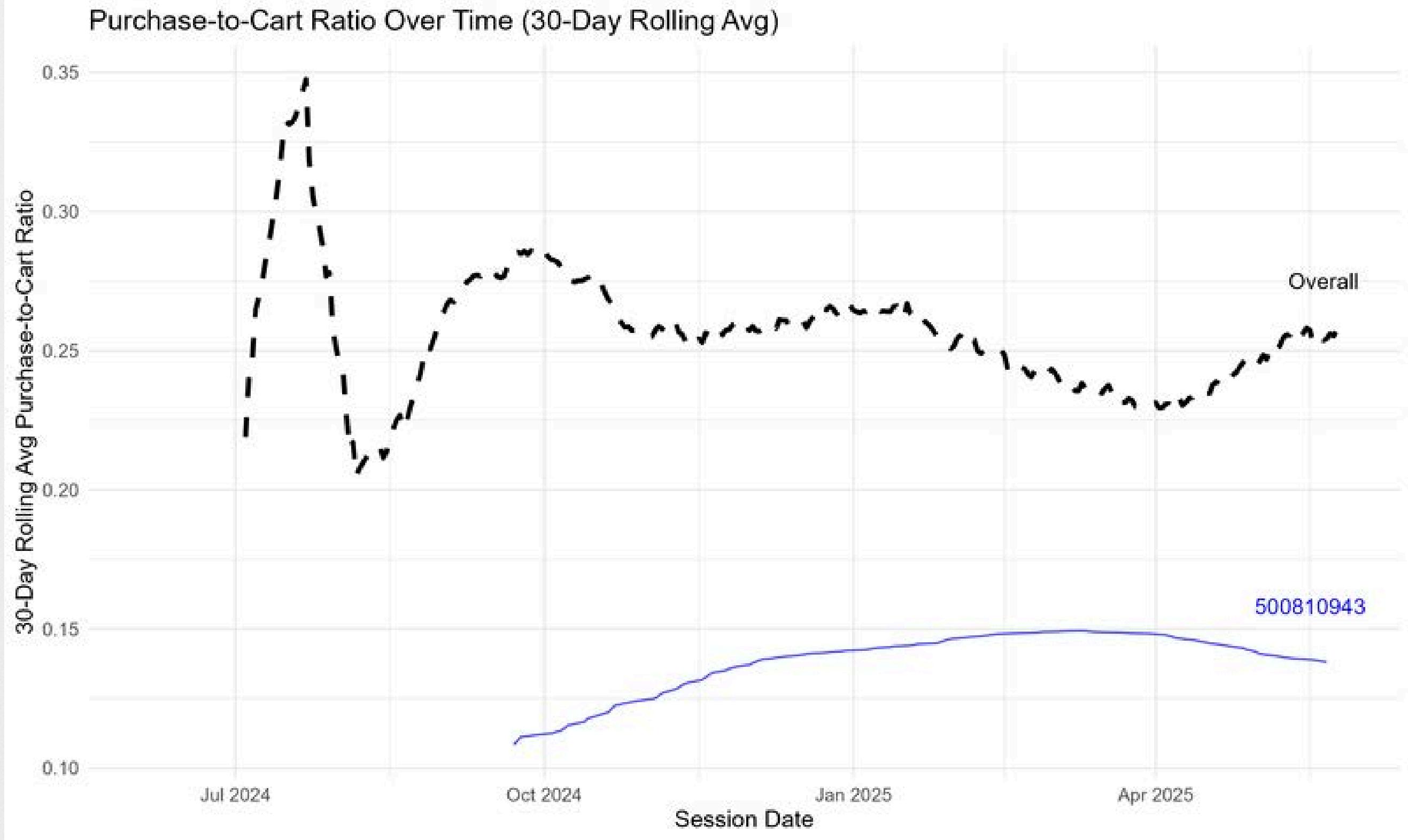
# Purchase to Cart Ratio History

## Abandonment Rate by Historical Conversion Rate

Customer's past purchase-to-cart ratio



# Purchase to Cart Ratio



Coke 360 AVG  
All Time: 0.226

# Top Predictors by Group

| Feature Group           | Number of Features | Examples   |
|-------------------------|--------------------|--|
| Purchase History        | 7                  | <code>purchase_to_cart_ratio,</code><br><code>purchase_cart_per_day,</code><br><code>total_order_items_before</code> , + more            |
| Temporal                | 6                  | <code>customer_days_since_first_event,</code><br><code>day_of_week</code> , <code>month</code> , <code>sessions_same_day</code><br>+more |
| Cart Behavior           | 4                  | <code>n_adds</code> , <code>add_to_cart</code> , <b><code>avg_adds_per_session</code></b> ,<br><code>total_add_to_carts_before</code>    |
| Session Characteristics | 1                  | <code>session_duration_mins</code>   |

# Modeling Application

## Predicting Abandonment

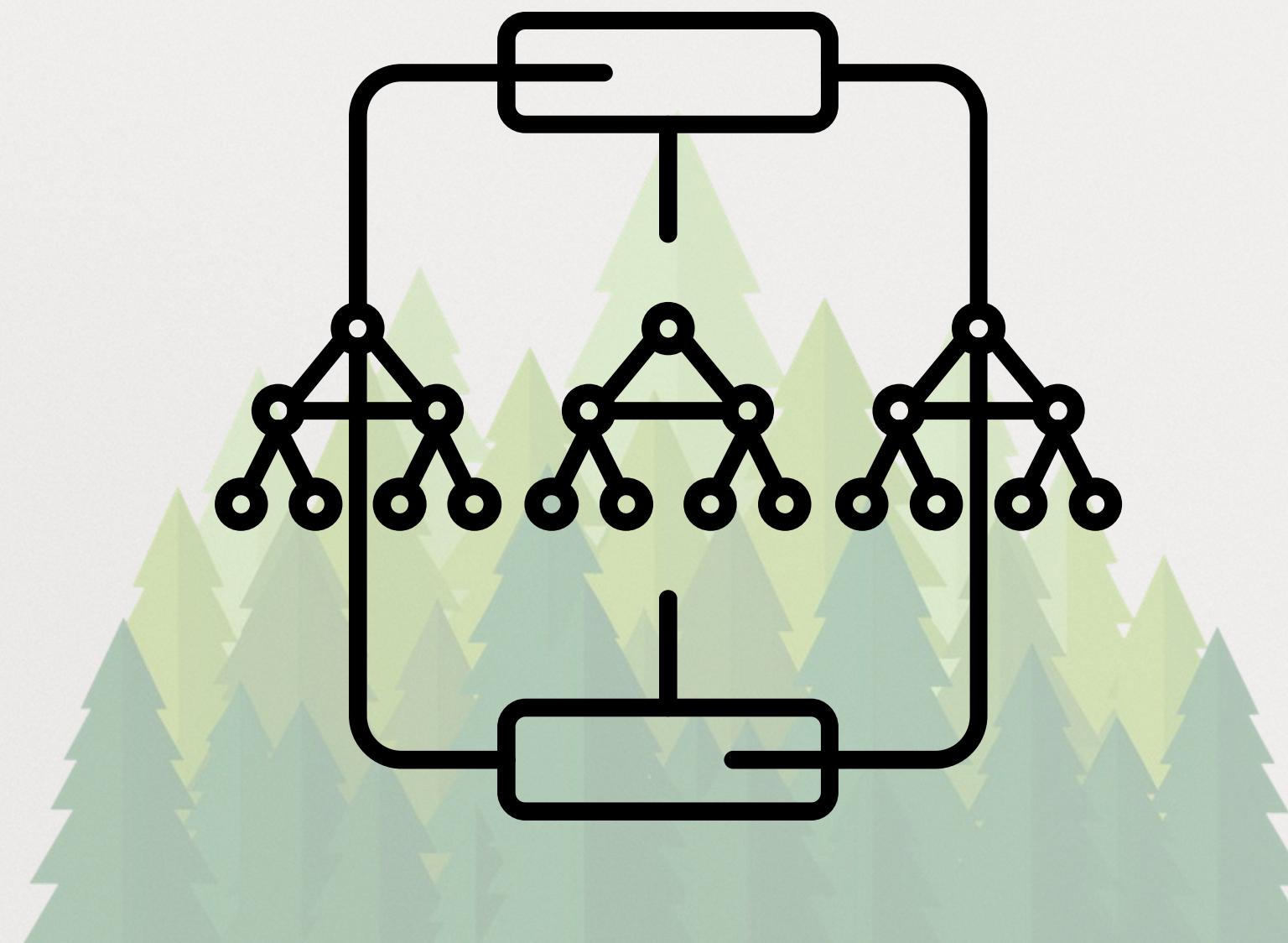
- Intervention Window (Session Ends)
- Identify high risk sessions using modeling

## Trigger Intervention

- Send emails to high risk session customers
- Focus on:
  - New customers, single item carts, customers approaching order window cutoff

## Business Impact

- Increase Recovery Rates among high risk sessions



# Behavioral Clusters

Cluster  
4

Abandonment  
Rate 19.2%

Cluster  
3

Abandonment  
Rate 22%

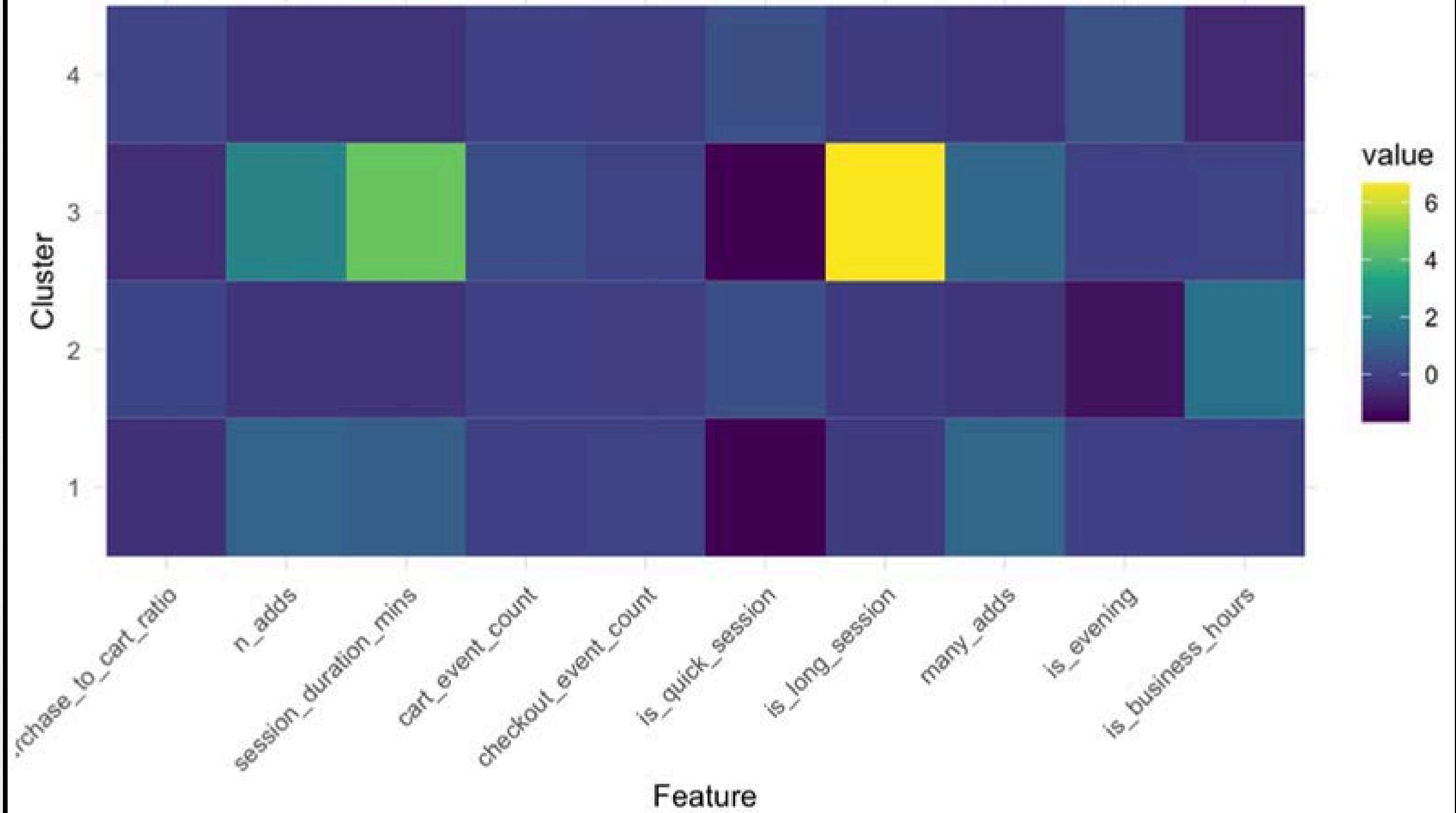
Cluster  
2

Abandonment  
Rate 16.2%

Cluster  
1

Abandonment  
Rate 14.8%

Heatmap of Cluster Centers





# Reasons for Cart Abandonment

- Browsing / Not ready to buy
- Extra costs too high (shipping, etc.)
- Delivery was too slow
- Didn't trust the site
- Checkout process too long/complex
- Return policy wasn't satisfactory
- Website had errors/crashed
- Couldn't see total order cost upfront
- Not enough payment methods
- Credit card declined
- Site not mobile friendly

# Business Recommendations



Implement notifications for  
high risk customers



AB Testing

Try different websites and  
see if you can improve one  
reason for cart  
abandonment at a time.



Live pricing on all  
Pages

Research says that the  
more the customer knows  
before checking out the  
better.



Customer Survey

Understanding why  
customers are doing what  
they are doing is important.

# Questions?

