

*Veronica's*

---

## Sales Analysis

Ironhack  
Data Analytics  
Jonathan Tsui





*Veronica's*

---

**Bakery and Pasta Shop Opened in 2022**

Breads | Pastries | Sandwiches | Coffee  
House Made Fresh Pasta | Gourmet Pantry Items

Ontario, Canada  
Population: 785 000

February 2023 to November 2024  
**Total Net Sales: \$2,090,908.68**

# Business Problem:

How can Veronica's Bakery use sales patterns influenced by:

1. Holidays
2. Weather Conditions

To make better decisions for:

- Revenue Growth
- Operational Efficiency

# Key Questions:

- Which **days, months, and seasons** have the highest sales?
- How do **rainfall, snowfall, and temperature** affect sales?
- How do sales fluctuate around the **holidays** compared to **regular days**?



# Dataset

**Sales:** Gathered from Point of Sale app

**Weather:** Government of Canada

**Holidays:** python holidays library

**Time Frame:** last 22 months



Original Features	Holidays/ Weather	Feature Engineering
gross_sales	holiday name	is_store_open
discount	is_holiday	season
net_sales	mean_temp_c	temp_category
tax	total_rain_mm	is_holiday_prev_2
gift_card_sales	total_snow_mm	is_holiday_prev_1
tips	total_precip_mm	is_holiday_next_1
payment_methods		is_holiday_next_2

# Statistical Tests

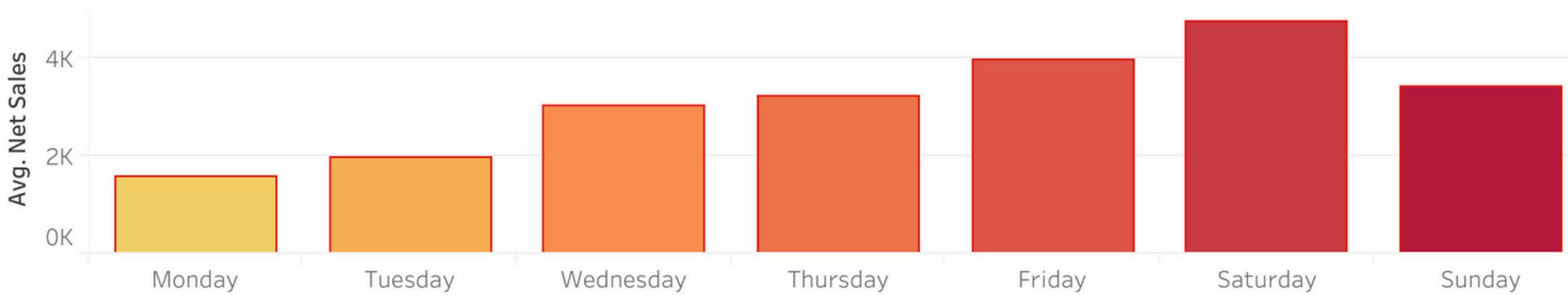
Hypothesis:	Conclusion:
Sales by Day of the Week	Significant Difference ✓
Rainy vs. Non-Rainy Days	No Significant Difference ✗
Snowy vs. Non-Snowy Days	Significant Difference ✓
Holidays vs. Non-Holidays	Significant Difference ✓
Sales Across Seasons	No Significant Difference ✗



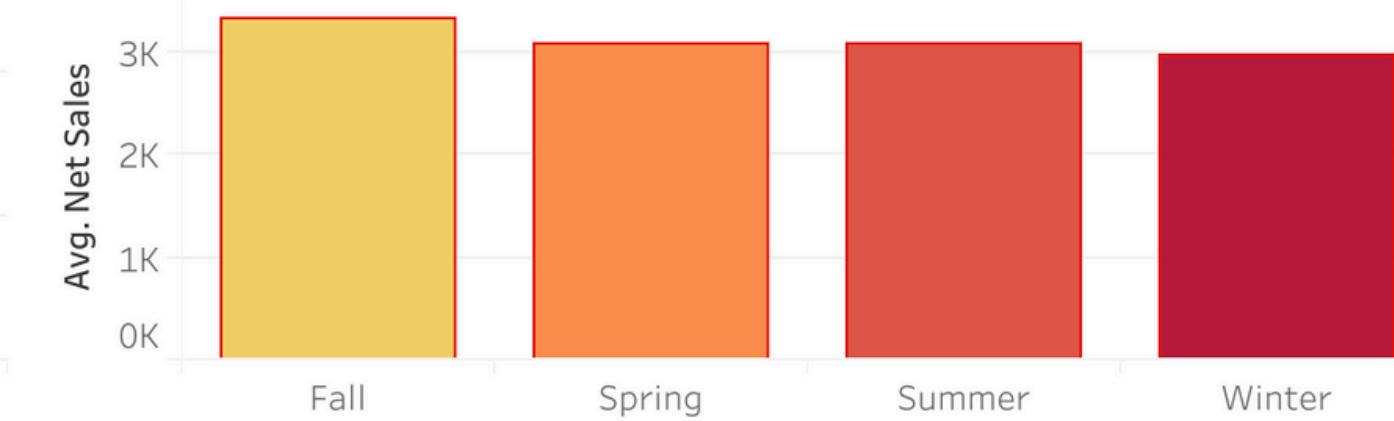
# Sales Insights: Veronica's

Time Frame: 2023-02 - 2024-11 Total Net Sales: \$2,090,908.68 Net Profit Margin: 15%

Average Sales by Day of the Week



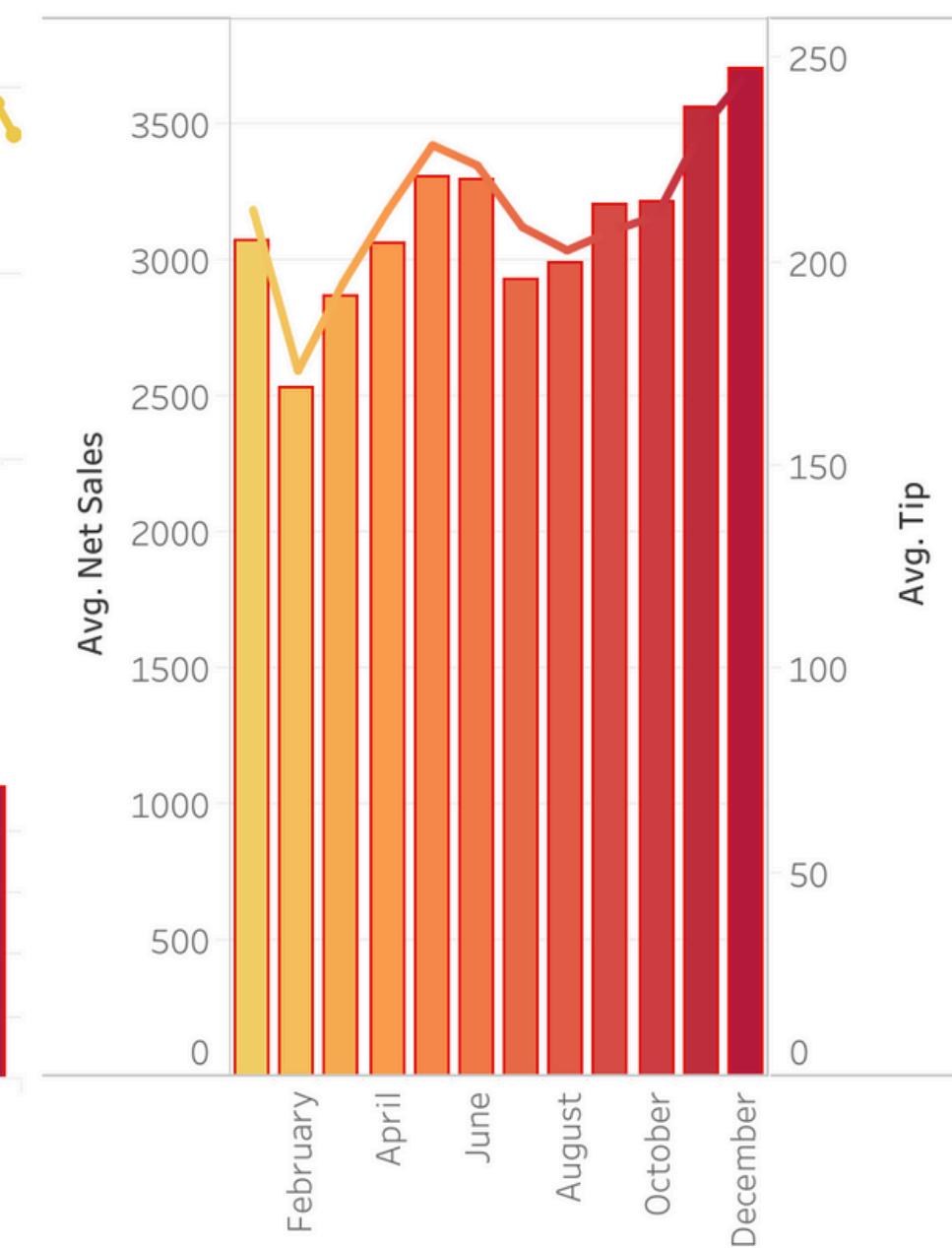
Average Sales by Season



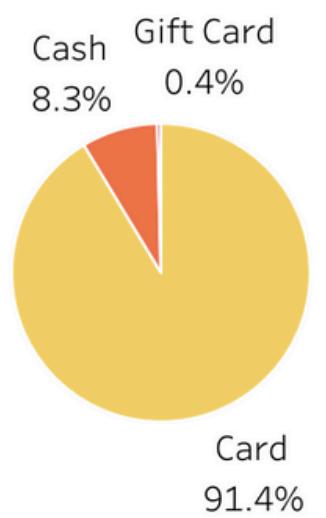
Weekly Sales Trend



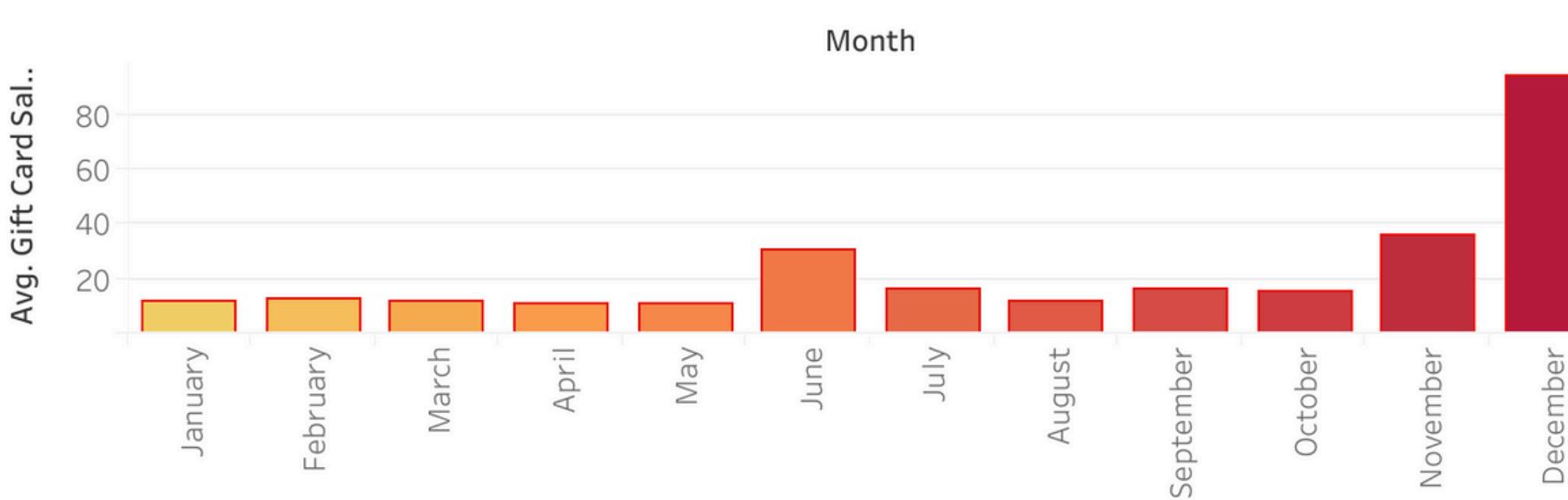
Average Sales per Month with Average Tips (6.75%)



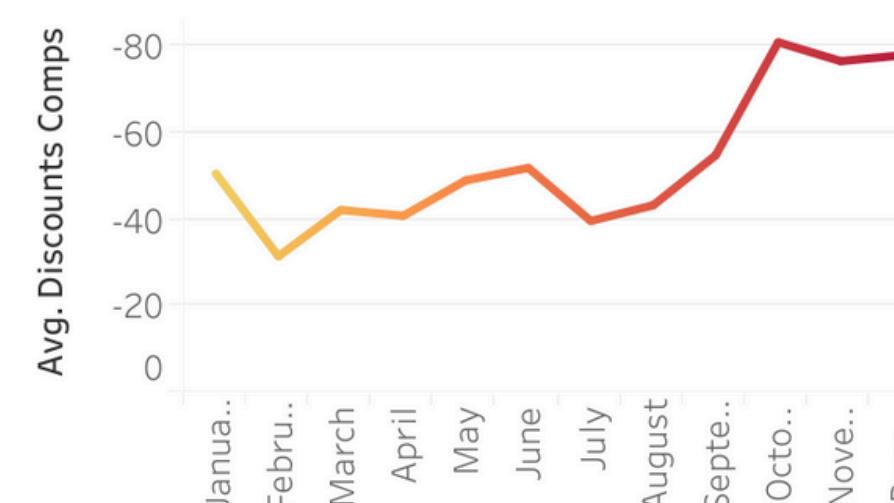
Customer Payment Methods



Average Gift Card Sales per Month



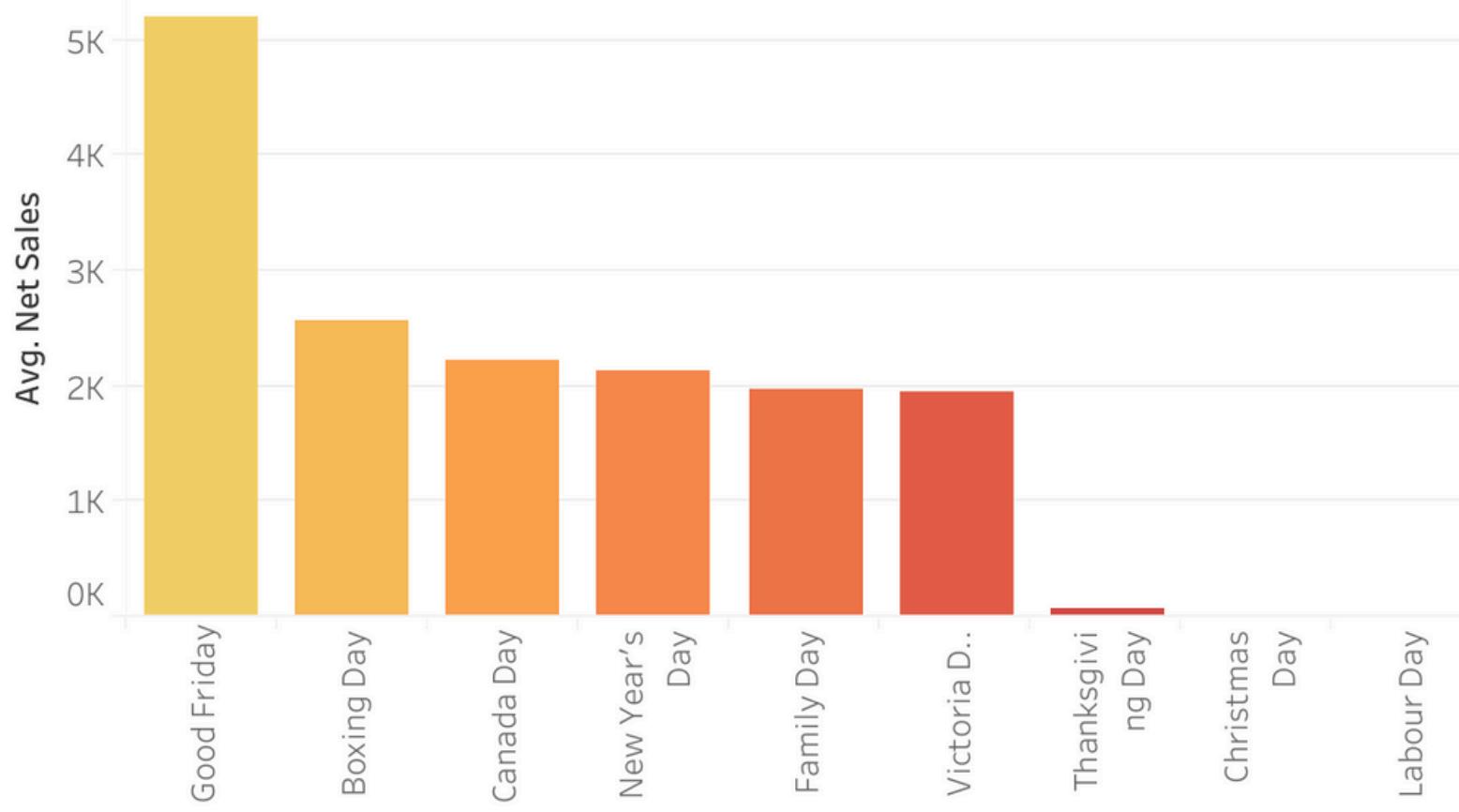
Average Discount Amount



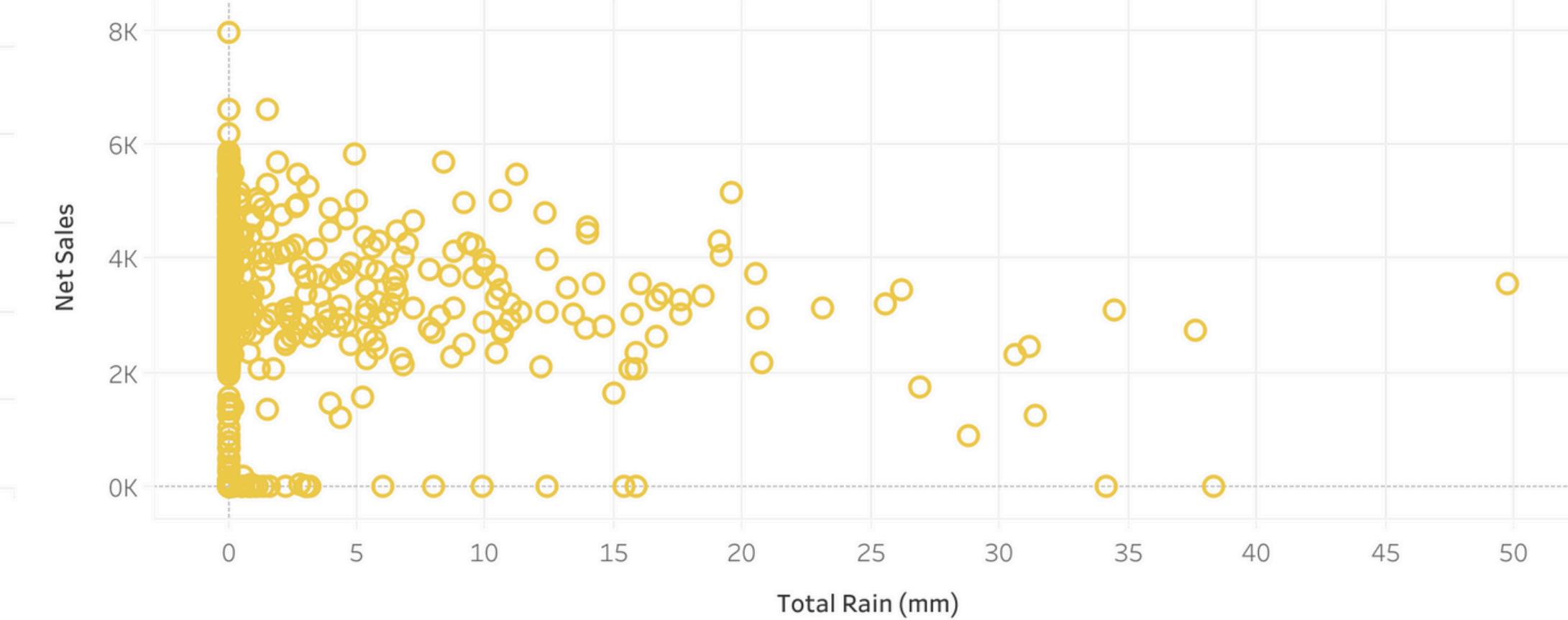
# Holiday and Weather Condition Patterns - Veronica's

Time Frame: 2023-02 - 2024-11 Total Net Sales: \$2,090,908.68 Net Profit Margin: 15%

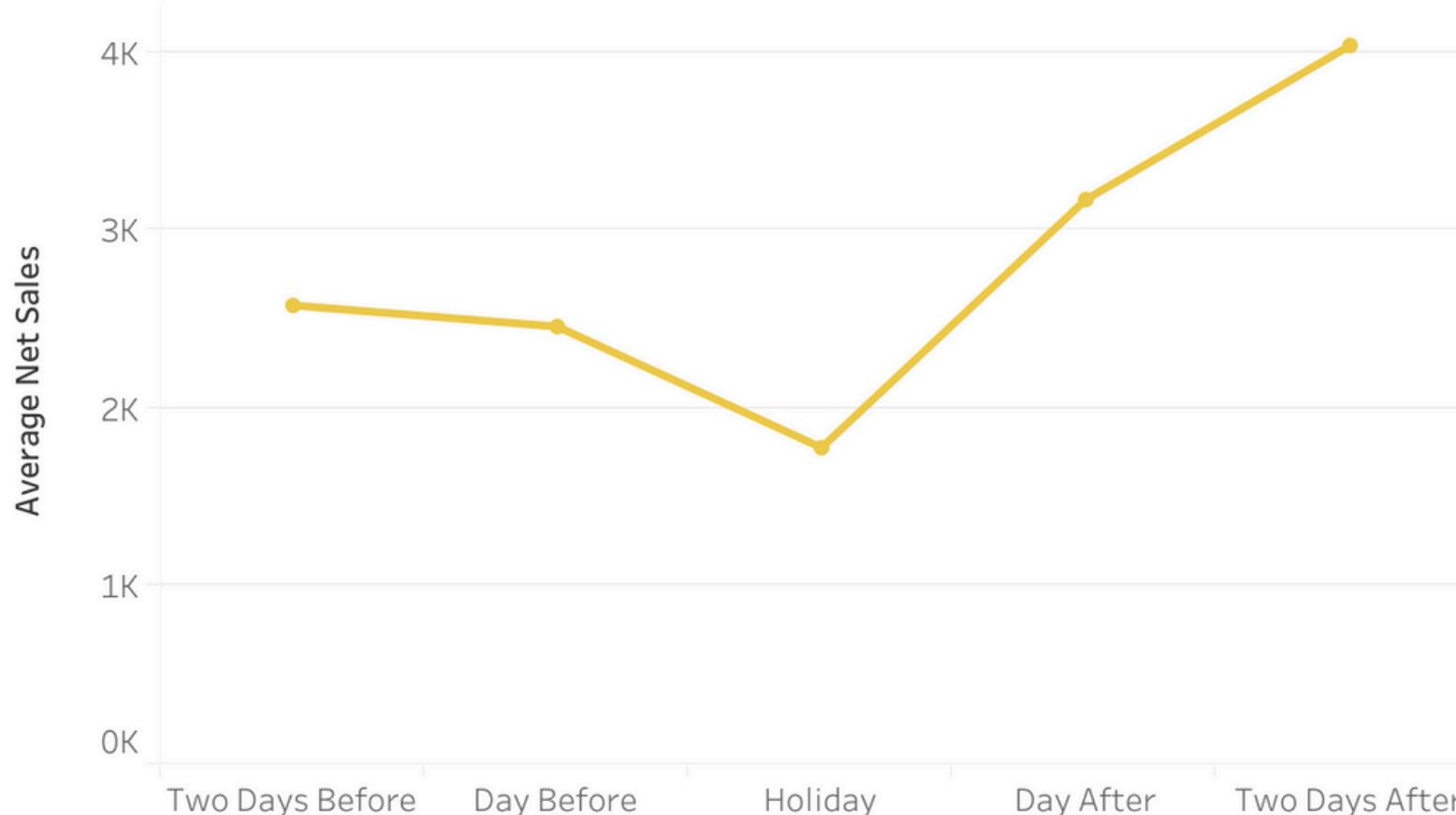
Top Performing Holidays



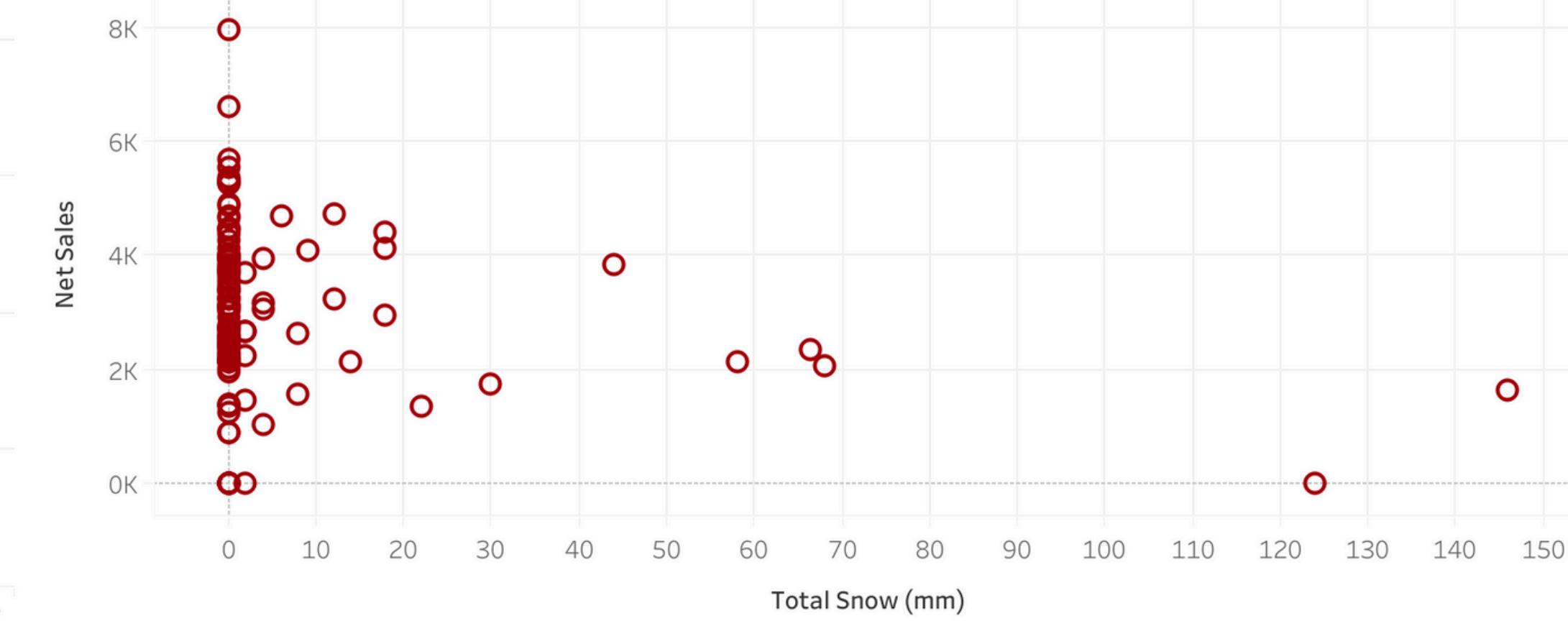
Rainfall Impact on Sales (Total # of Rainy Days: 241)



Average Sales During Holiday Time



Snowfall Impact on Sales (Total # of Snowy Days: 45)

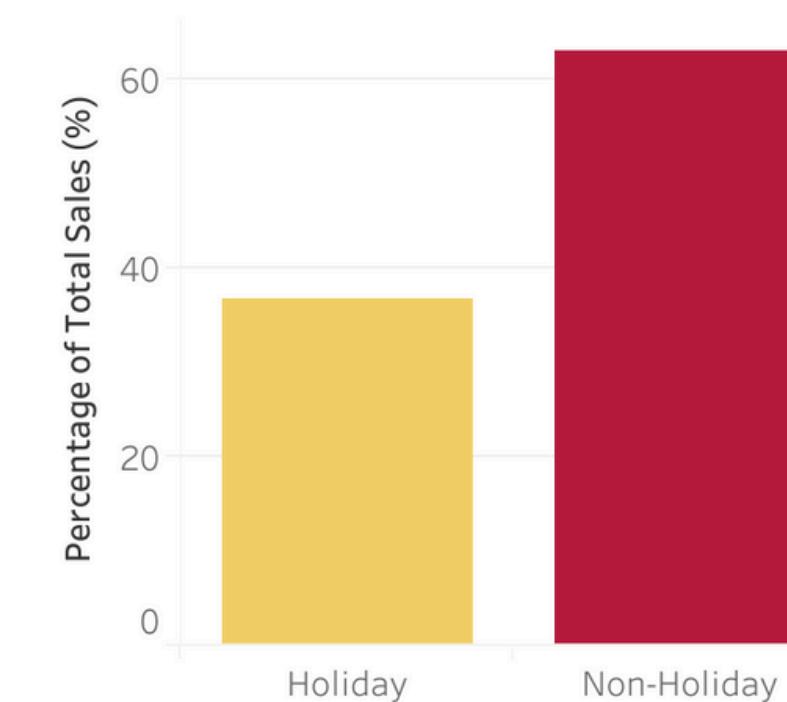


# Key Performance Indicators - Veronica's

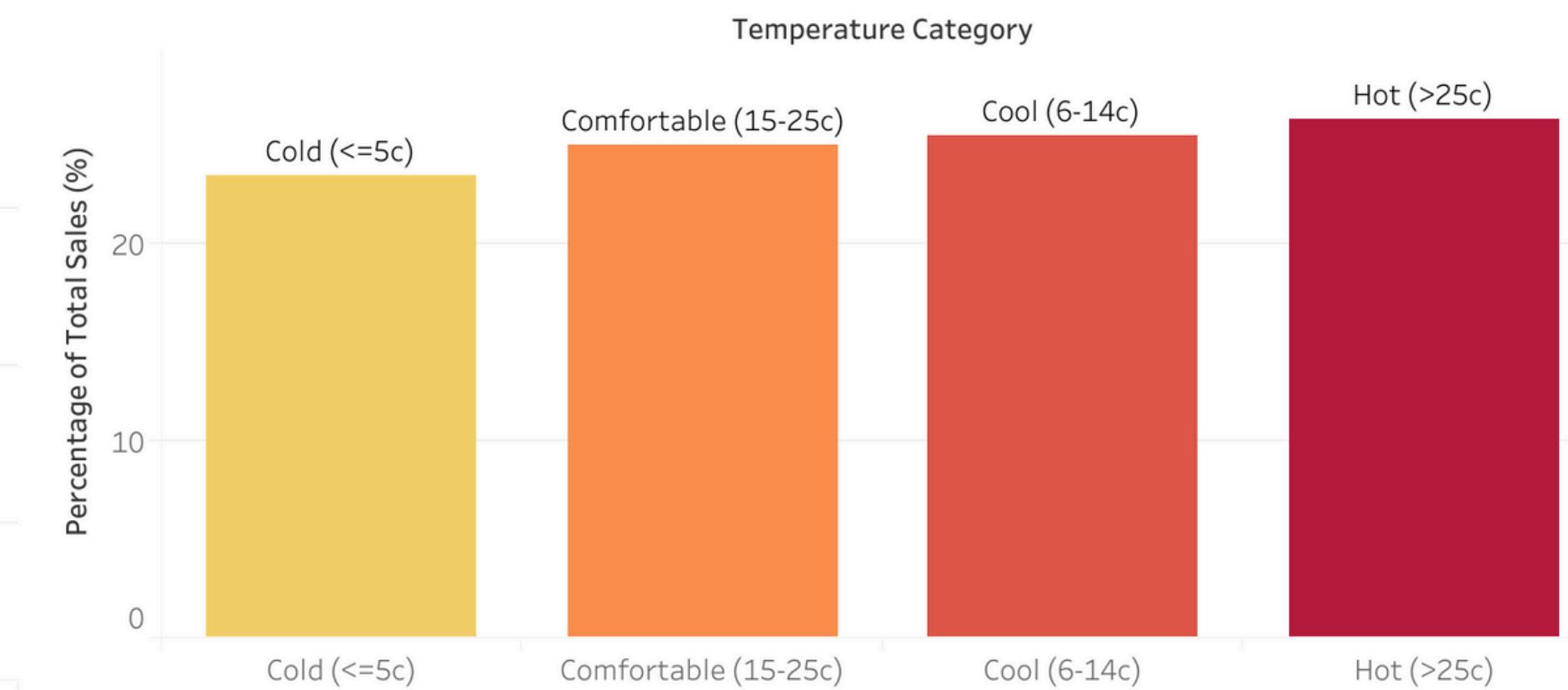
Time Frame: 2023-02 - 2024-11 Total Net Sales: \$2,090,908.68 Net Profit Margin: 15%

#1: Average Sales Per Day = **\$3125.42**

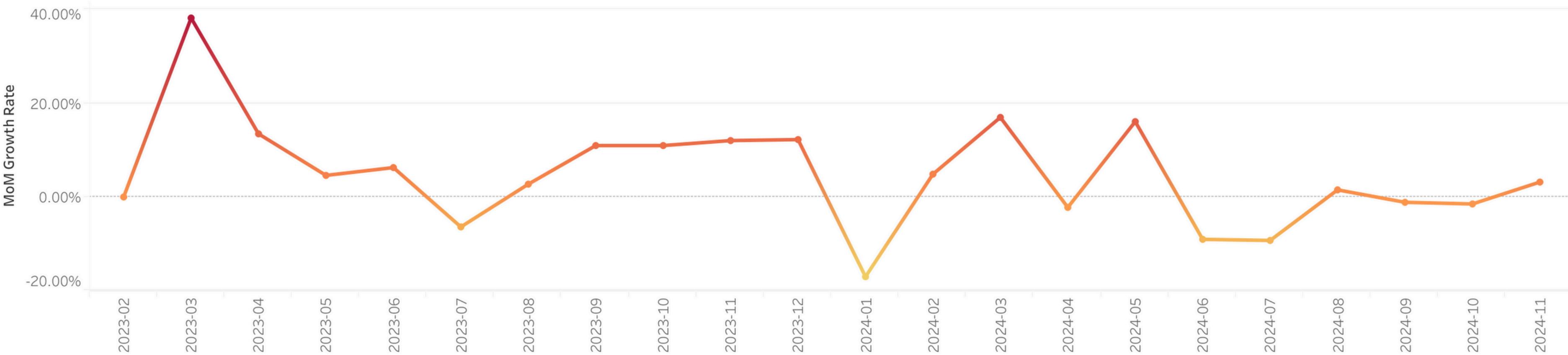
# 2: Holiday vs. Non-Holiday Sales Percentage  
Average Net Sales:  
**Holiday: \$1,833 | Non-Holiday: \$3,155**



#3: Temperature Impact on Sales Percentage



#4: Sales Growth Rate (Month-over-Month)



# Recommendations:



1

## Boost Daily Sales

- Target: > \$3,125.42/day
- Promotions: Specials on Mondays and Tuesdays

2

## Increase Sales Growth

- Focus Months: February, March, July

3

## Optimize Holiday Strategy

- Pre-Holiday Deals: 1-2 days before holidays
- Post-Holiday Discounts: 2 days after holidays

4

## Leverage Weather Trends

- Hot Days: Cold drinks & snacks
- Cold Days: Warm drinks & comfort food
- Seasonal Menus & Delivery Service during cold weather

5

## Enhance Data Collection

- Upgrade POS System to track: itemized/category sales, transactions and employee hours
- New KPIs:
  - Avg. Transaction Value, Sales per Category, Employee Turnover



# Future Work

## Improve Predictive Sales Model

Current Best Models:

- 1) Linear Regression:  $R^2: 50.2\%$
- 2) Gradient Boosting (Random Search):  $R^2: 47.9\%$

## Cost-Benefit Analysis

Determine if opening on holidays is worthwhile by considering:

- Revenue Potential
- Operational Costs (e.g., staffing, utilities)
- Customer Sentiment
- Impact on Brand Image

## Develop Loyalty Club App

Ability to track:

Visit Frequency, Spending Habits, and Demographics

*Veronica's*

---

**Thank you!**



[GitHub Repo](#)

