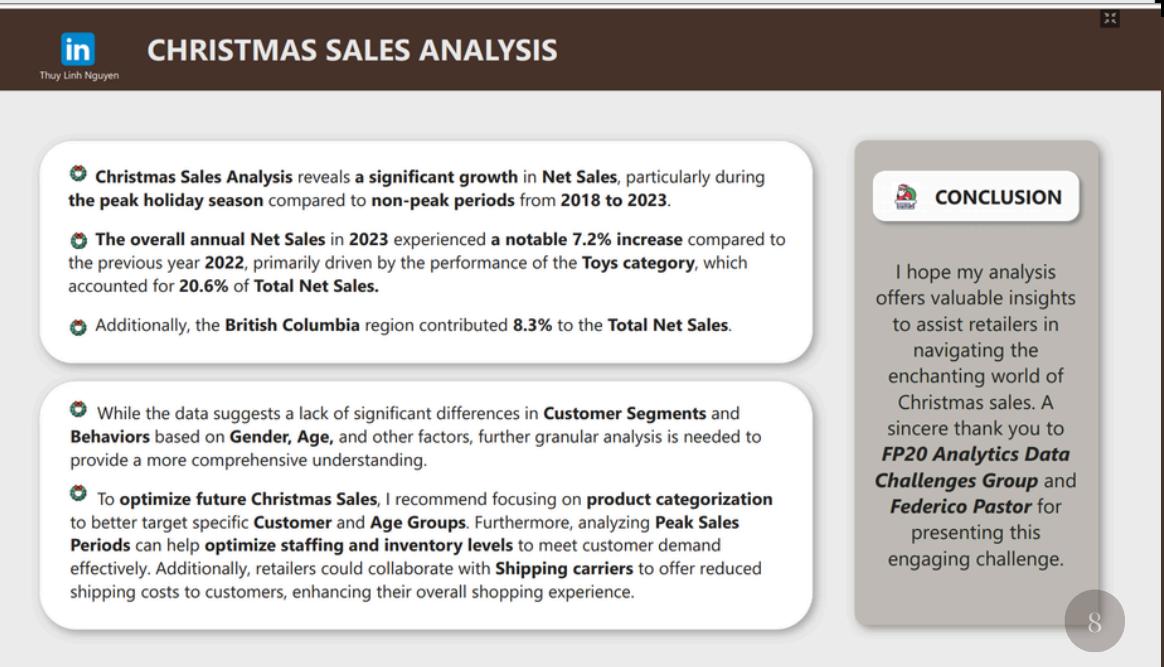
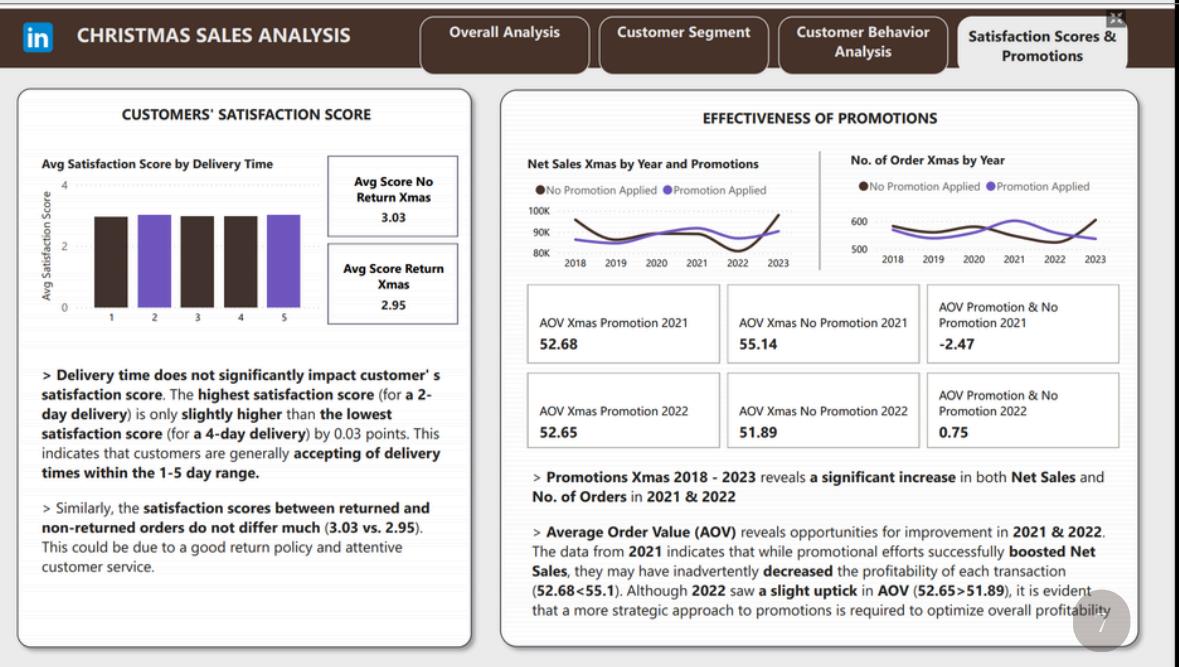
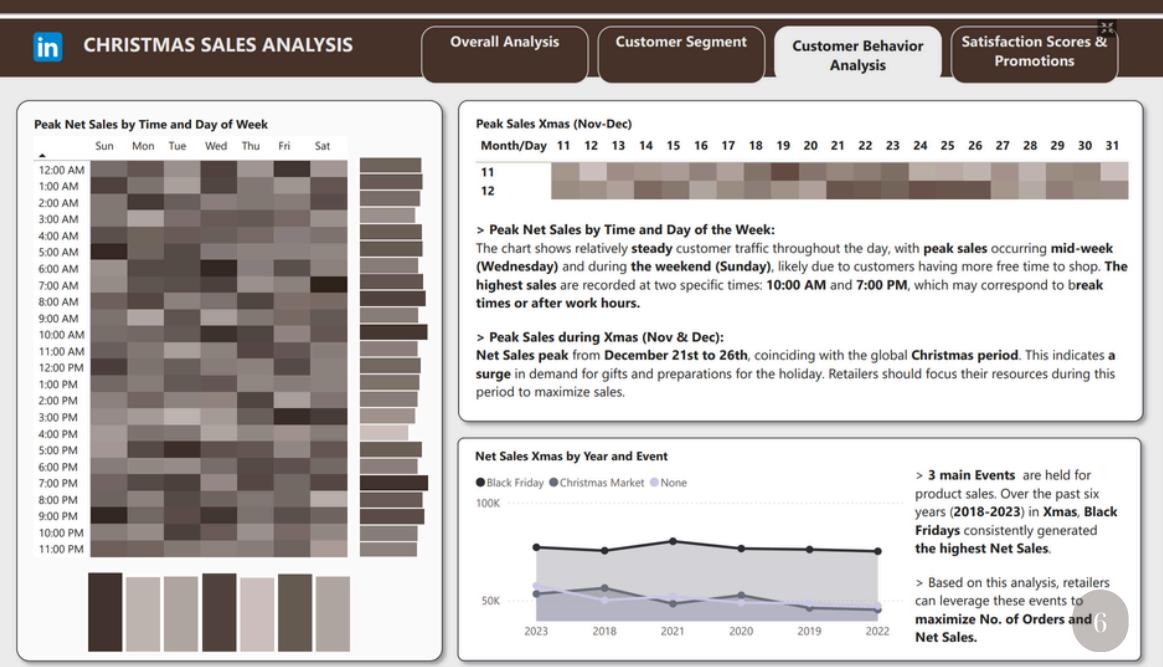


CHRISTMAS SALES PROJECT

Thuy Linh Nguyen





INTRODUCTION

CHRISTMAS SALES & TRENDS ANALYSIS

A leading market research firm has gathered comprehensive data on Holiday Sales, covering customer demographics, purchase behavior, promotional effectiveness, and satisfaction metrics. The goal is to analyze shopping trends, explore the impact of promotions, identify key drivers of customer satisfaction, and provide valuable insights to enhance future holiday strategies.

Objectives:

- > Exploring the dynamic world of holiday shopping and uncover the factors influencing Christmas consumer behavior.
- > Capturing trends and insights from Christmas sales, revealing customer preferences and shopping patterns during the holiday season.

Source: FP20 Analytics Data Challenges Group - Federico Pastor



Page 1: Xmas & Non-Xmas

Analyzing the Overall Sales from 2018 to 2023, comparing key factors between the Xmas period (Nov -Dec) and the non-Xmas period (Jan-Oct).



Page 2: Customer Behavior in Xmas

Examining shopping behavior during the Xmas, including customer segmentation for different products. Analyze other relevant factors such as Promotions, Customer Satisfaction Scores, and Payment Types.



Other Pages

Providing additional insights from the Xmas Sales & Trends data, summarizing key findings for improved strategy planning.



CHRISTMAS SALES DASHBOARD

Xmas & Non-Xmas

Customer Behavior in Xmas



OVERALL

Net Sales	1,585K
Latest Year	274.08K
YoY Growth	+7.2% ▲

No. of Order	10.00K
Latest Year	1.68K
YoY Growth	+2.4% ▲

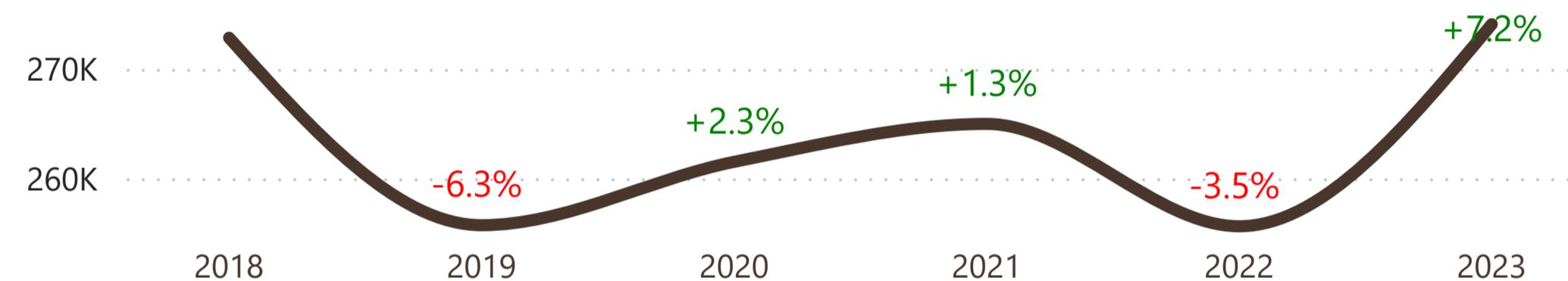
Qty	30.11K
Latest Year	5.13K
YoY Growth	+4.1% ▲

Year

All

Net Sales by Year

> 2023 saw the highest net sales growth.

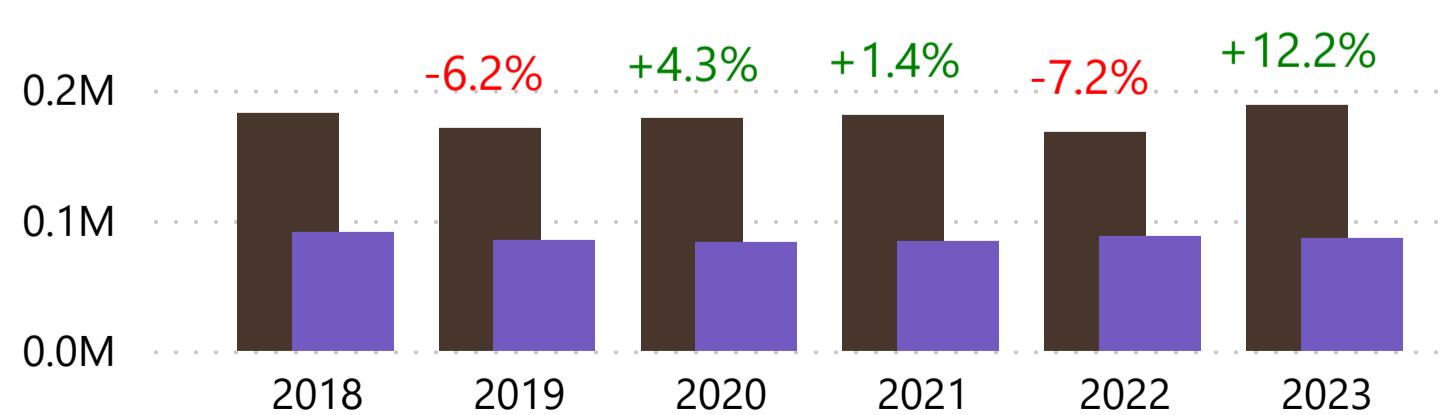


NON-XMAS (Jan - Oct) & XMAS (Nov - Dec)

Net Sales by Year & Xmas Net Sales Growth

> Xmas sales consistently double Non-Xmas sales over the 6-year period, despite fluctuations.

● Non-Xmas ● Xmas



Net Sales Xmas
1,068K

Net Sales Non-Xmas
516.99K

Net Sales by Category

> Toys dominate Net Sales, while Electronics lead in Quantity.

Category	Qty	Net Sales	Net Sales by Year	% of Total	Net Sales YoY Growth
Toys	6105	326.24K		20.6%	+17.4%
Electronics	6226	321.93K		20.3%	+1.1%
Food	6021	318.84K		20.1%	-1.7%

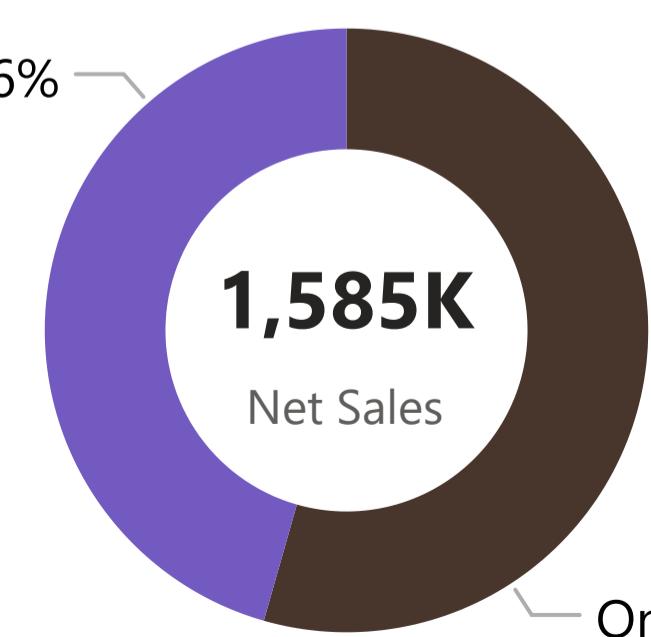
Net Sales by Location

> British Columbia leads both the Quantity and Net Sales over years

Location	Qty	Net Sales	Net Sales by Year	% of Total	Net Sales YoY Growth
British Columbia	2577	131.92K		8.3%	-13.5%
Nunavut	2319	126.99K		8.0%	+17.9%
Ontario	2363	125.33K		7.9%	-16.3%

A Comparison of Net Sales Categories

> Select corresponding slicers to view details.



Select Season

- Select all
- Non-Xmas
- Xmas

Select other details

- Online Order Flag
- Gift Wrap
- Shipping Method

- > **Online Order Flag:** Online orders consistently generate higher revenue than offline orders, although Xmas sees a slight dip in online sales.
- > **Gift wrap:** Gift wrap usage shows no significant increase during the Xmas period.



CHRISTMAS SALES DASHBOARD

Xmas & Non-Xmas

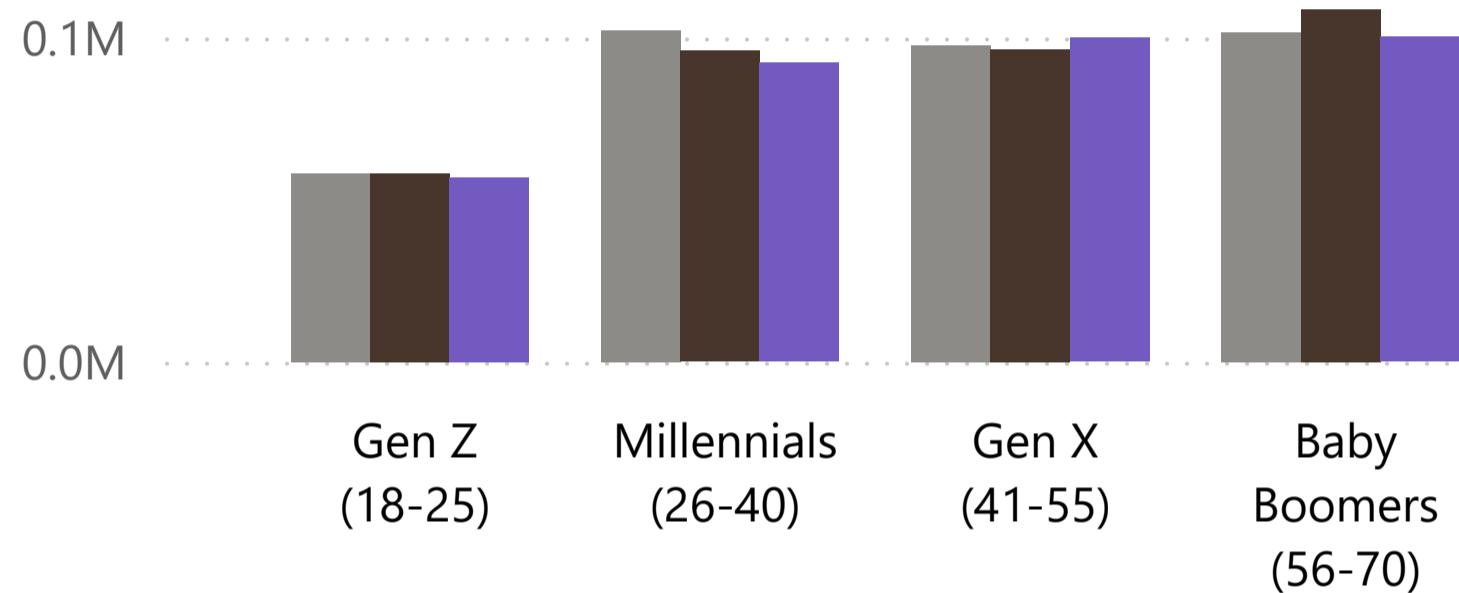


Thuy Linh
Nguyen

Net Sales Xmas by Age Group & Gender

> Gen Z has the lowest net sales, with minimal difference in revenue contribution between genders across all age groups.

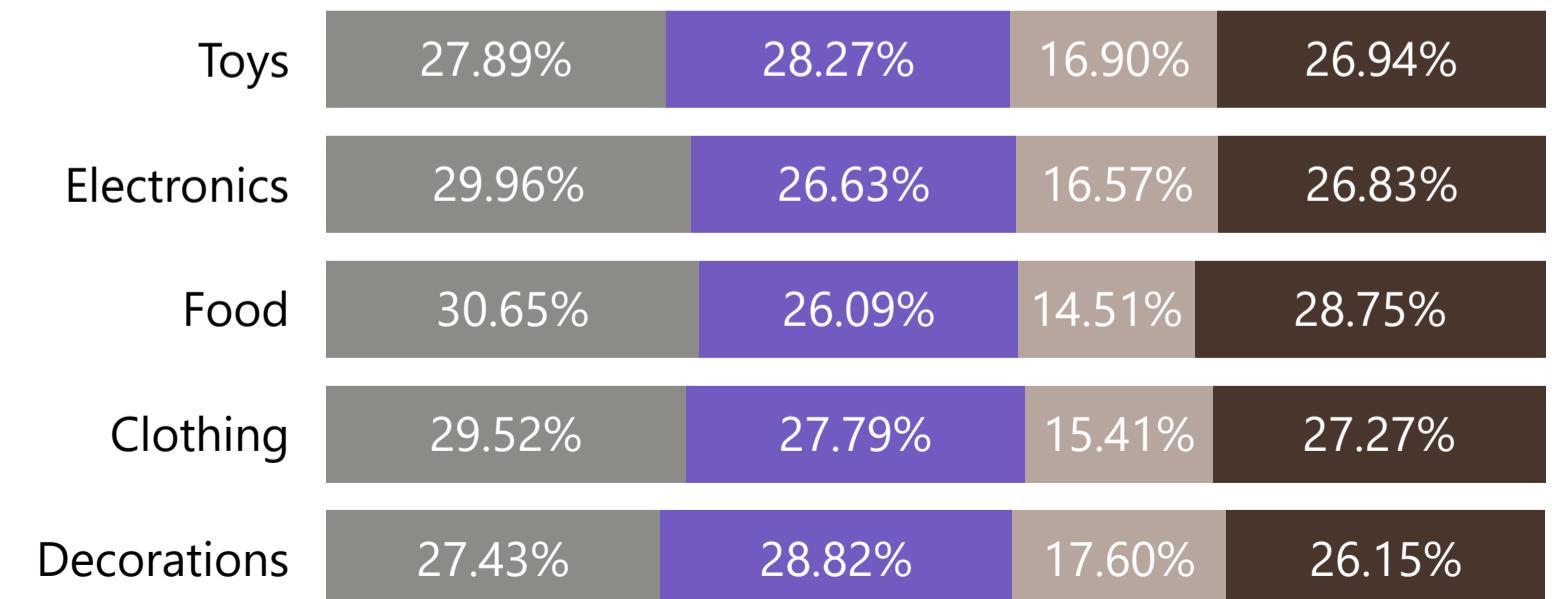
● Female ● Male ● Other



% Net Sales Xmas of Category By

> Baby Boomers and Female customers are the largest contributors to Toys Net Sales.

● Baby Boomers ● Gen X ● Gen Z ● Millennials

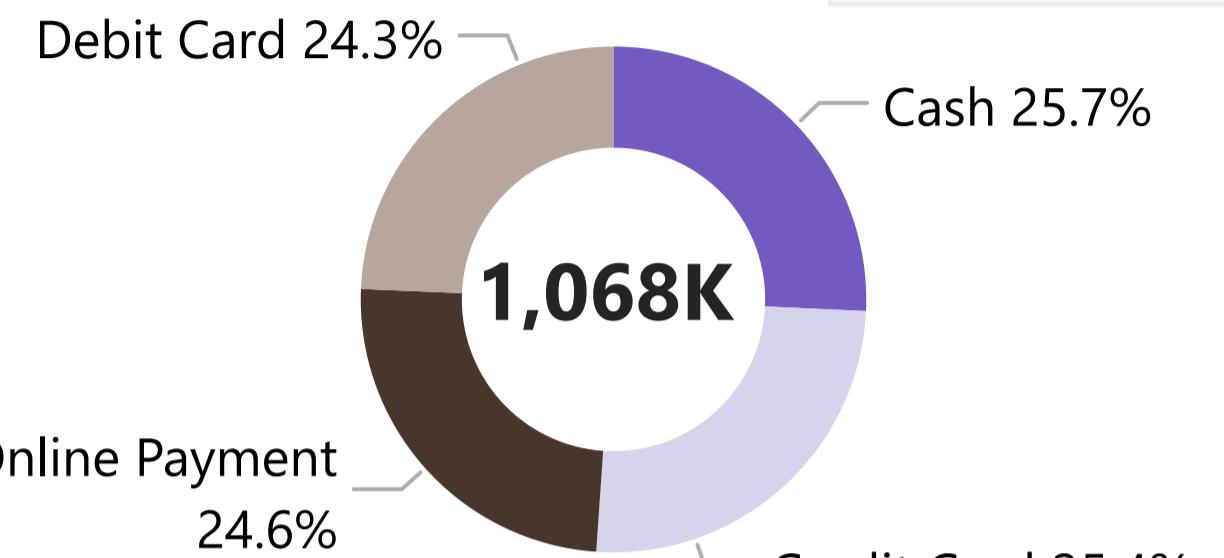


Peak Net Sales by Time and Day of Week

> Peak Xmas Sales occur on Sun, especially at 5 AM and 9 PM

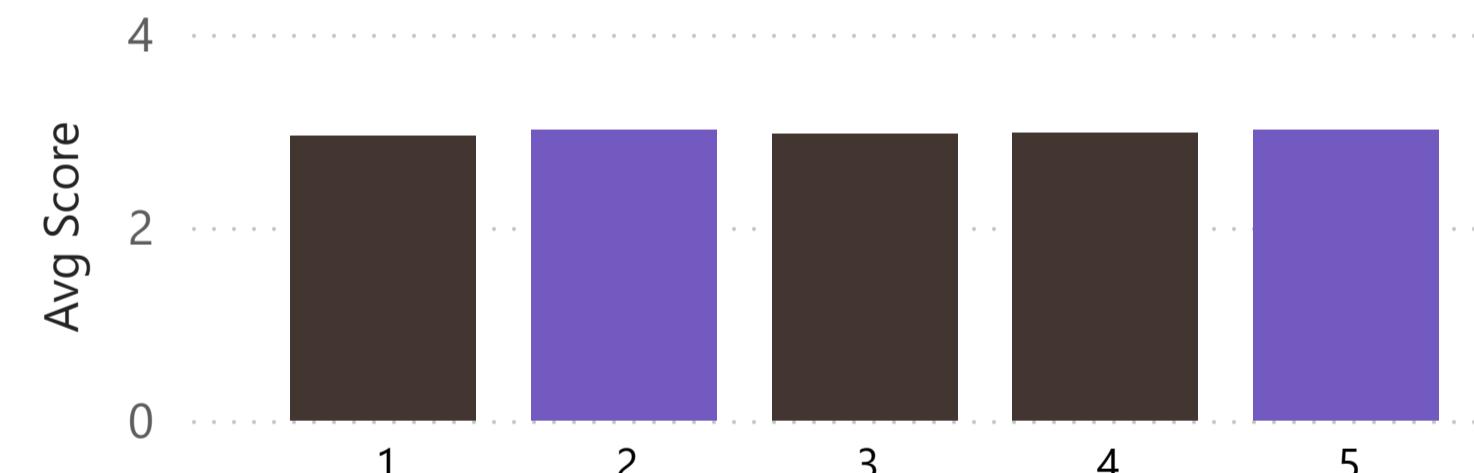


Net Sales Xmas Filter by



Avg Satisfaction Score by Delivery Time

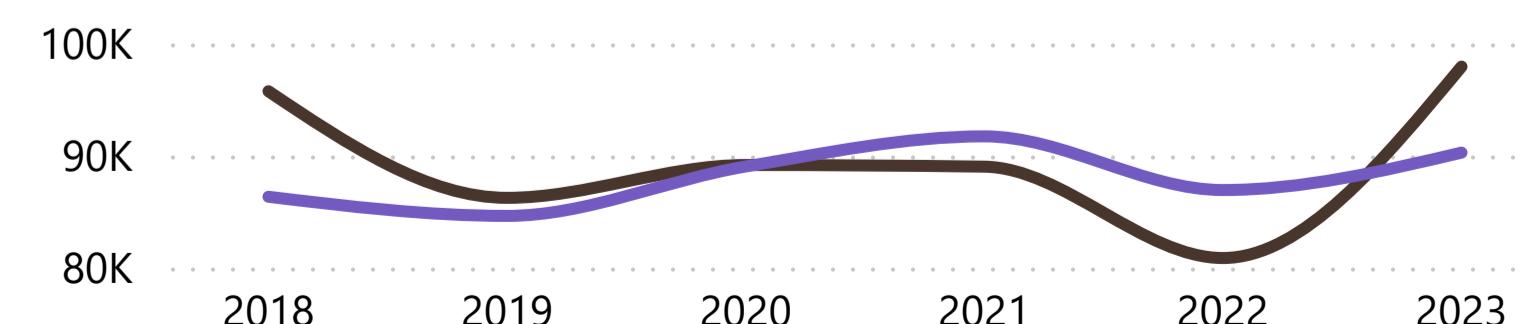
> Customers are most satisfied with delivery times of 2 or 5 days.



Net Sales Xmas by Year and Promotions

> Promotions only boosted Xmas Net Sales in 2021 and 2022.

● No Promotion Applied ● Promotion Applied

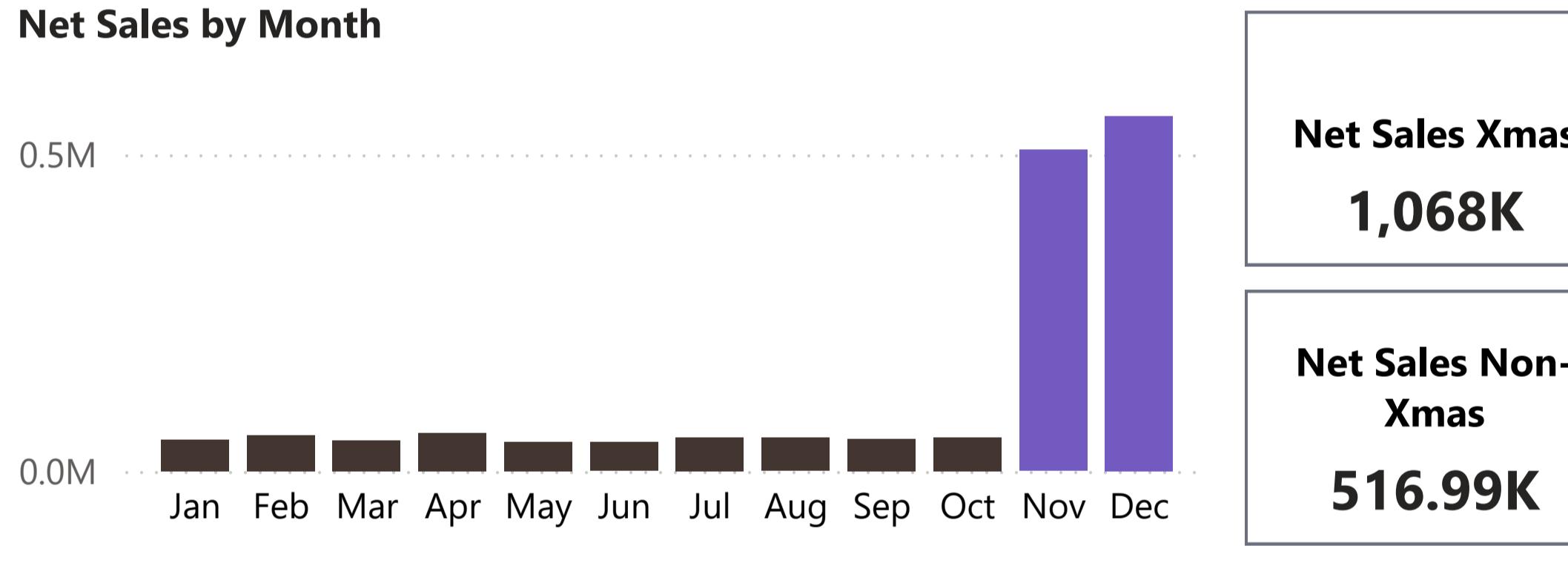




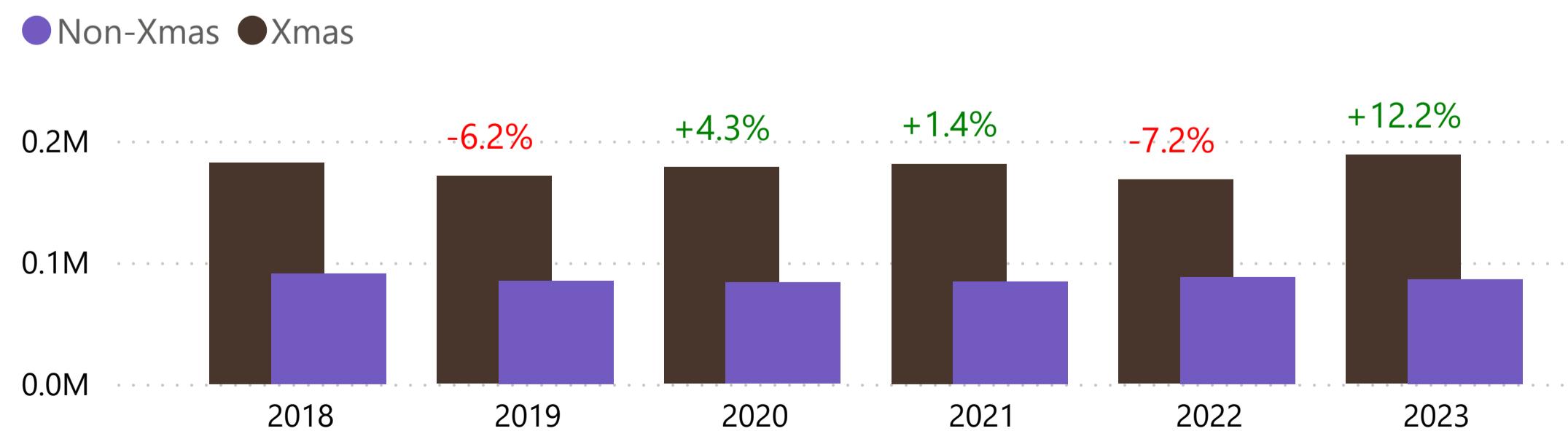
Net Sales by Year (Select Year)



Net Sales by Month



Net Sales by Year & Xmas Net Sales Growth



> 2018-2023 Overview:

Net Sales have shown **significant fluctuations** over the years, particularly with **noticeable declines** in **2019 and 2022**. However, the period from **2022 to 2023** saw a **notable recovery**, with **Net Sales increasing** from ~ 255k to ~274k

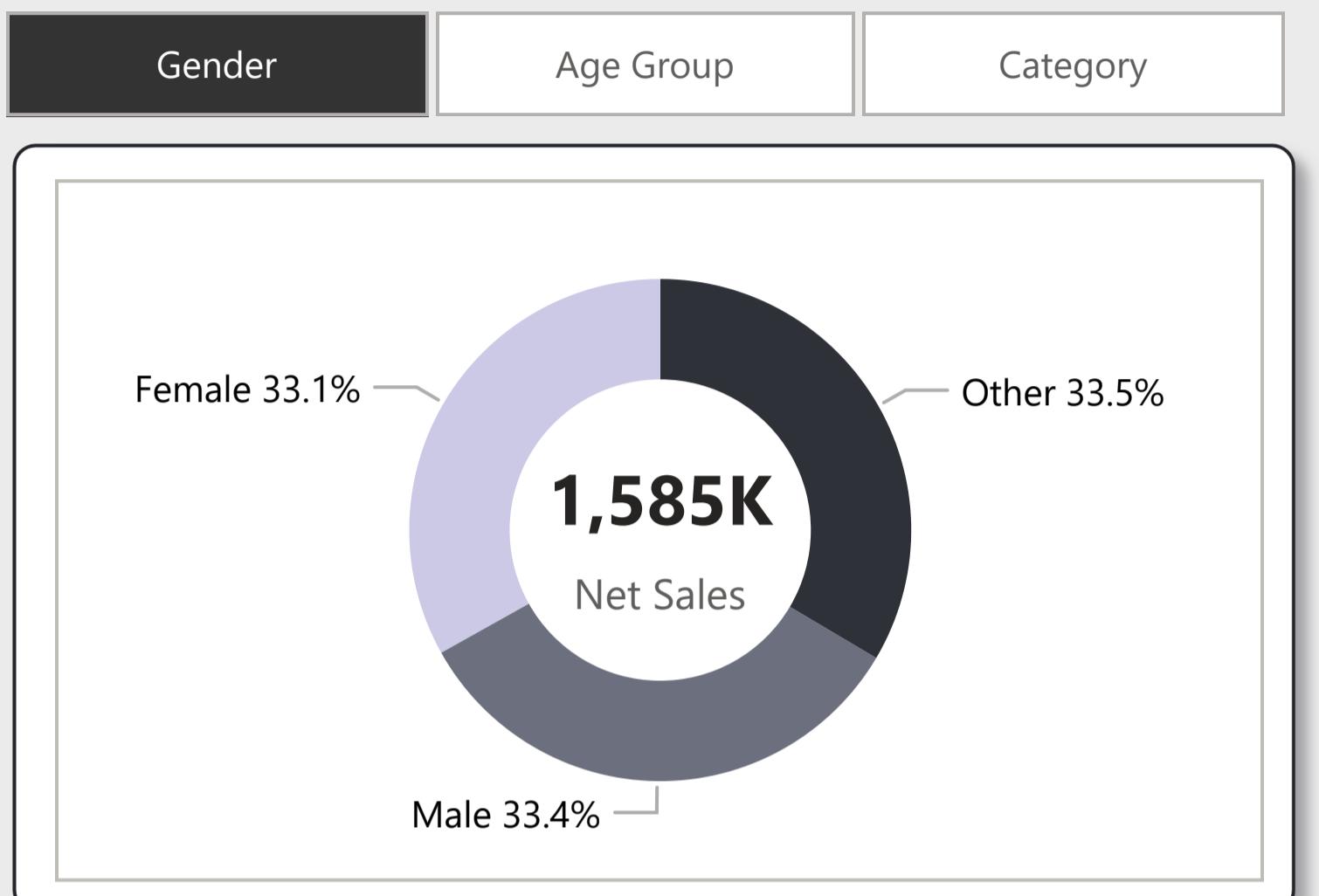
> Yearly Breakdown by Month:

When analyzing individual years, it is clear that **Net Sales in November and December** consistently **outperform** other months. The **Total Net Sales** for these two months (**Nov-Dec**) are approximately **twice** as high compared to the first ten months of the year (**1,068K and 516.99K**). This insight allows us to clearly separate the two periods for more focused analysis: (**Xmas: Nov-Dec**) & (**Non-Xmas: Jan-Oct**).

Did Covid-19 Affect the Net Sales ?

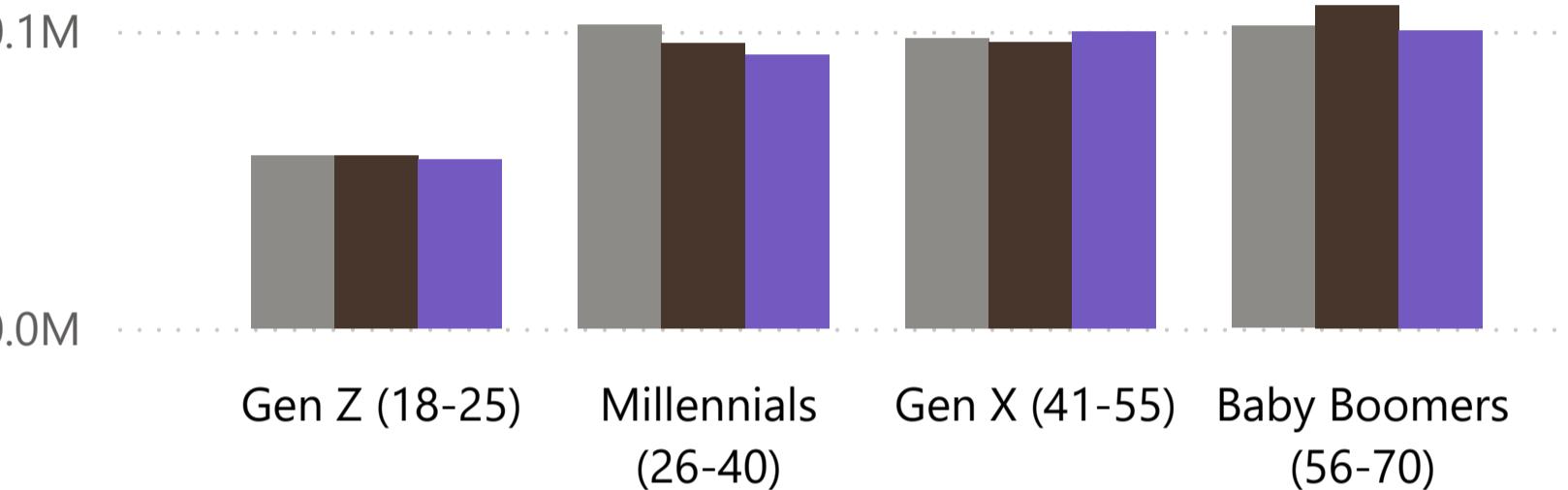
> Although the dataset does not provide detailed information on the specific impact of **COVID-19**, we can observe a **decline in Net Sales 2019 (-6.2%)**. This **decrease** could partly be attributed to the outbreak of the pandemic, which led to business restrictions and affected consumer spending. However, it's important to note that this **decline** could also have been influenced by other factors.

> Comparing to the first year of the period, **2018, Net Sales growth in 2019 dropped by 6.3%**. In **2020**, there was a **slight recovery (an increase of 2.3%)**, but the growth still did not reach the levels seen in **2018**.



Net Sales Xmas by Age Group & Gender

● Female ● Male ● Other



% Net Sales Xmas of Category By

● Baby Boomers ● Gen X ● Gen Z ● Millennials

Category	Baby Boomers	Gen X	Gen Z	Millennials
Toys	27.89%	28.27%	16.90%	26.94%
Food	30.65%	26.09%	28.75%	
Electronics	29.96%	26.63%	16.57%	26.83%
Decorations	27.43%	28.82%	17.60%	26.15%
Clothing	29.52%	27.79%	15.41%	27.27%

AGE GROUP

Age Analysis: The dataset includes **customer age distribution** ranging from **18 to 70**, which has been divided into the following **4 groups**:

- **Gen Z (18-25):** Tech-savvy, values convenience and trends. This group typically has **less purchasing power** compared to older generations.
- **Millennials (26-40):** The largest generation in today's workforce. They value experiences and work-life balance.
- **Gen X (41-55):** Independent and adaptable. This group typically has **stable incomes** and is a major consumer across many categories.
- **Baby Boomers (56-70):** An influential generation entering retirement. They tend to spend on health, travel, and leisure.

By segmenting customers into these age groups, we can see clear patterns in **Spending Behavior**. For example, **Gen Z has the lowest spending share** (16.3% of the total), while the other three groups have **relatively similar spending levels**. **Baby Boomers are the highest consumers**, with an expenditure nearly **double** that of **Gen Z (28.4%)**.

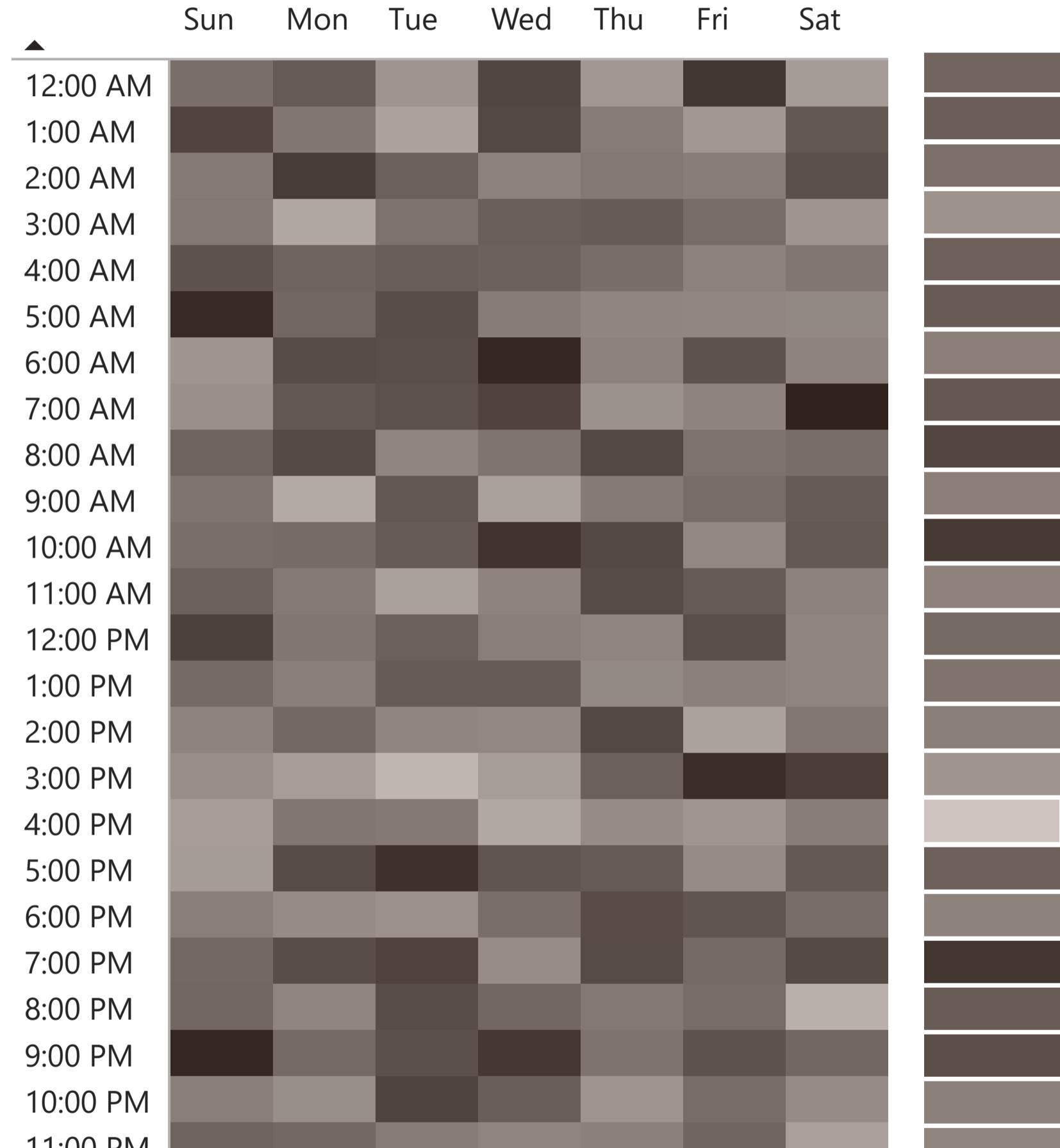
GENDER

> **Net Sales:** Among the different age groups, there is **no significant difference in spending** between genders.

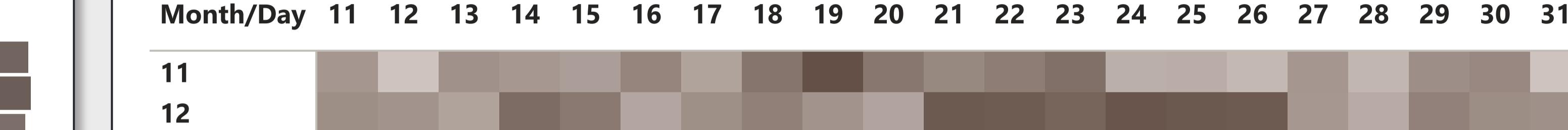
> **Category:** Most genders contribute **fairly evenly** across various categories, with spending ranging from approximately **30% to 35%**. Although **Toy Sales** generate **the highest revenue**, this indicates that consumer purchases during Christmas are quite diverse across product categories.



Peak Net Sales by Time and Day of Week



Peak Sales Xmas (Nov-Dec)



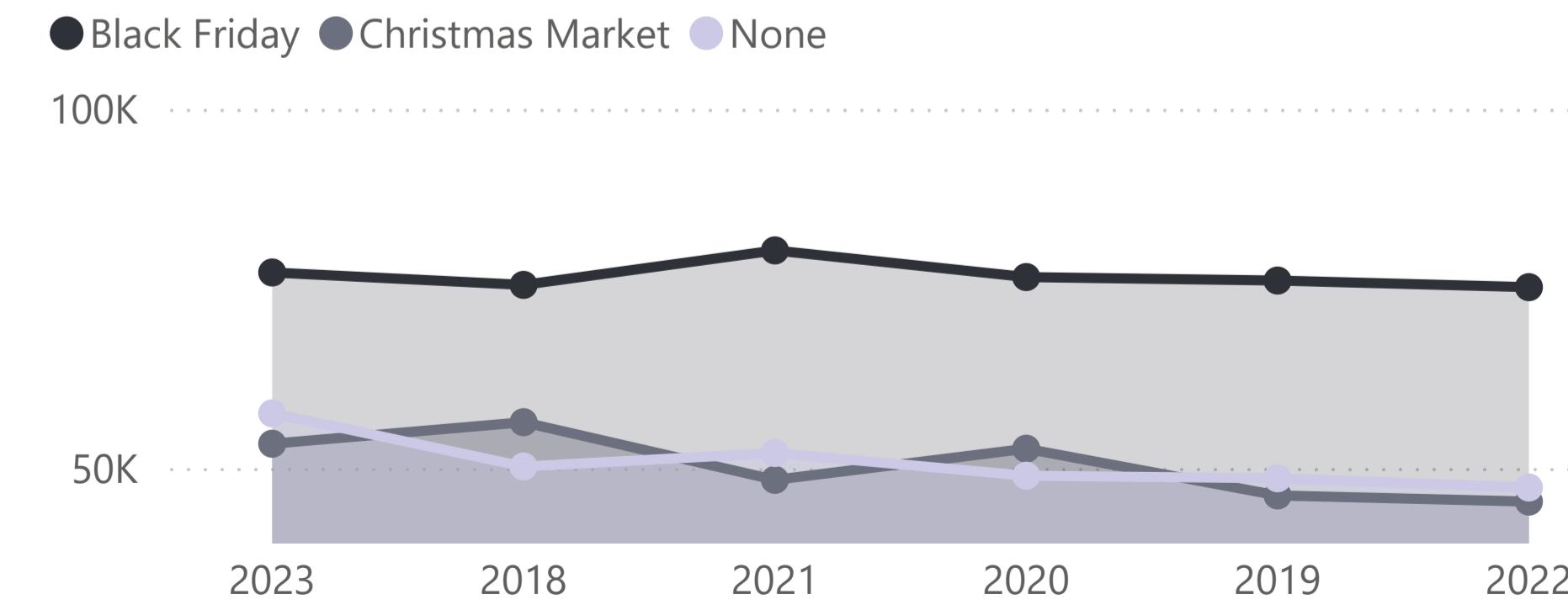
> Peak Net Sales by Time and Day of the Week:

The chart shows relatively **steady** customer traffic throughout the day, with **peak sales** occurring **mid-week (Wednesday)** and during **the weekend (Sunday)**, likely due to customers having more free time to shop. **The highest sales** are recorded at two specific times: **10:00 AM and 7:00 PM**, which may correspond to **break times or after work hours**.

> Peak Sales during Xmas (Nov & Dec):

Net Sales peak from **December 21st to 26th**, coinciding with the global **Christmas period**. This indicates a **surge** in demand for gifts and preparations for the holiday. Retailers should focus their resources during this period to maximize sales.

Net Sales Xmas by Year and Event

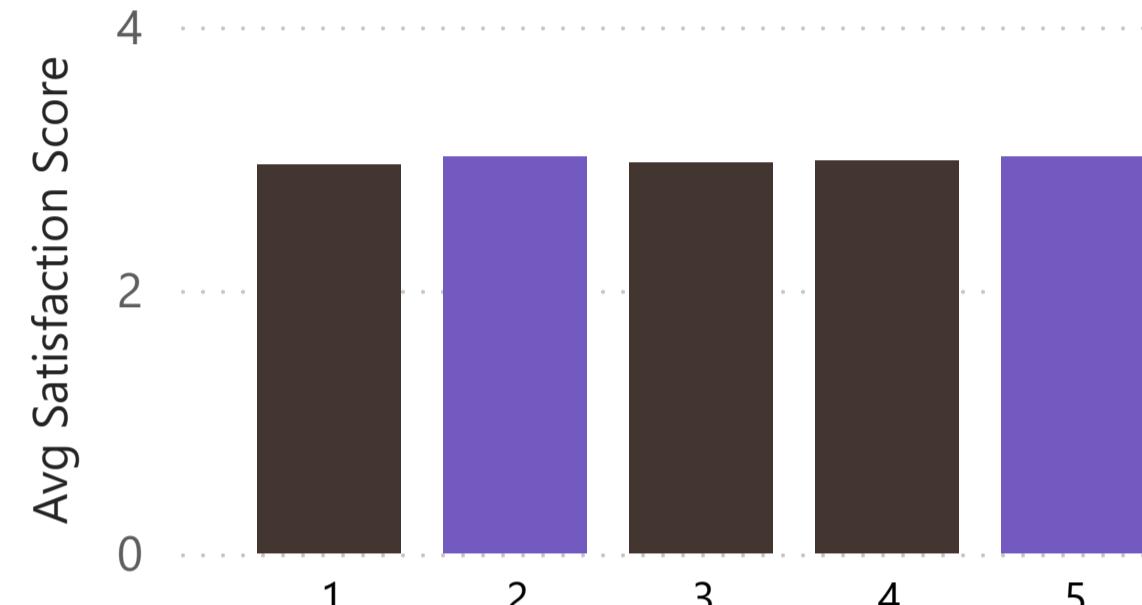


> **3 main Events** are held for product sales. Over the past six years (**2018-2023**) in **Xmas, Black Fridays** consistently generated the highest Net Sales.

> Based on this analysis, retailers can leverage these events to **maximize No. of Orders and Net Sales**.

CUSTOMERS' SATISFACTION SCORE

Avg Satisfaction Score by Delivery Time



Avg Score No Return Xmas

3.03

Avg Score Return Xmas

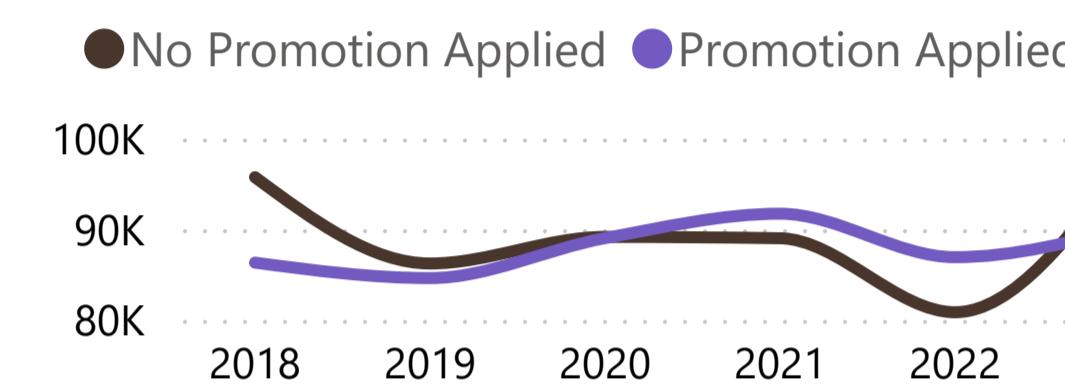
2.95

> **Delivery time does not significantly impact customer's satisfaction score.** The **highest satisfaction score** (for a **2-day delivery**) is only **slightly higher than the lowest satisfaction score** (for a **4-day delivery**) by 0.03 points. This indicates that customers are generally **accepting of delivery times within the 1-5 day range.**

> Similarly, the **satisfaction scores between returned and nonReturned orders do not differ much (3.03 vs. 2.95).** This could be due to a good return policy and attentive customer service.

EFFECTIVENESS OF PROMOTIONS

Net Sales Xmas by Year and Promotions



AOV Xmas Promotion 2021

52.68

AOV Xmas No Promotion 2021

55.14

AOV Promotion & No Promotion 2021

-2.47

AOV Xmas Promotion 2022

52.65

AOV Xmas No Promotion 2022

51.89

AOV Promotion & No Promotion 2022

0.75

> **Promotions Xmas 2018 - 2023** reveals a significant increase in both **Net Sales** and **No. of Orders** in **2021 & 2022**

> **Average Order Value (AOV)** reveals opportunities for improvement in **2021 & 2022**. The data from **2021** indicates that while promotional efforts successfully **boosted Net Sales**, they may have inadvertently **decreased** the profitability of each transaction ($52.68 < 55.1$). Although **2022** saw a slight uptick in **AOV** ($52.65 > 51.89$), it is evident that a more strategic approach to promotions is required to optimize overall profitability



CHRISTMAS SALES ANALYSIS

🎄 Christmas Sales Analysis reveals a significant growth in Net Sales, particularly during the peak holiday season compared to non-peak periods from 2018 to 2023.

🎄 The overall annual Net Sales in 2023 experienced a notable 7.2% increase compared to the previous year 2022, primarily driven by the performance of the Toys category, which accounted for 20.6% of Total Net Sales.

🎄 Additionally, the British Columbia region contributed 8.3% to the Total Net Sales.

🎄 While the data suggests a lack of significant differences in Customer Segments and Behaviors based on Gender, Age, and other factors, further granular analysis is needed to provide a more comprehensive understanding.

🎄 To optimize future Christmas Sales, I recommend focusing on product categorization to better target specific Customer and Age Groups. Furthermore, analyzing Peak Sales Periods can help optimize staffing and inventory levels to meet customer demand effectively. Additionally, retailers could collaborate with Shipping carriers to offer reduced shipping costs to customers, enhancing their overall shopping experience.



CONCLUSION

I hope my analysis offers valuable insights to assist retailers in navigating the enchanting world of Christmas sales. A sincere thank you to **FP20 Analytics Data Challenges Group** and **Federico Pastor** for presenting this engaging challenge.