Holiday Impact Analysis on Retail Sales
[Apparel, Beauty, Home Kitchen, Electronics]

Prepared by

Aanchal Malhotra (amalh9)
Anupama Singh (singh134)
Kritika Singh (kritika6)
Smruti Singh (smrutis3)

School of Information Sciences, University of Illinois Urbana-Champaign

IS 525: Data Warehousing and Business Intelligence

Guided by **Prof. Michael Wonderlich**

December 16th, 2024

Describe the scenario

The scenario focuses on analyzing retail sales performance during the holiday season, a time when businesses see a significant boost in sales. Holidays, like in the Fall and winter seasons, drive increased customer demand for popular brands, products, and categories.

However, retailers often struggle to understand key trends, such as which regions (North, South, East, or West) generate the most sales, which brands customers prefer, and how discounts influence purchases. This analysis uses historical data to uncover these insights, helping businesses make informed decisions about inventory, marketing campaigns, and pricing strategies to better meet customer demand and maximize revenue during holidays.

What is the problem you are trying to solve?

The problem we are trying to solve is understanding how holidays impact retail sales performance and identifying the key factors that drive sales during these peak periods. Businesses often see a significant increase in sales during holidays, but they may struggle to pinpoint which regions, brands, and product categories perform the best and why. This analysis aims to uncover trends, such as which areas generate the most revenue, which brands customers prefer during holidays, and how discounts or promotions influence buying decisions. By answering these questions, we help businesses make smarter decisions about inventory management, marketing campaigns, and pricing strategies to maximize their revenue during the holiday season and better meet customer demand. The goal is to provide clear, actionable insights in a way that is easy for anyone to understand and use.

Who is the intended audience?

- The intended audience for our project, Holiday Impact Analysis on Retail Sales [Apparel, Beauty, Home Kitchen, Electronics], includes stakeholders in the retail and e-commerce industries who are directly or indirectly involved in planning, decision-making, and execution during holiday seasons.

- Store managers, category managers, and regional sales managers who need actionable insights to plan inventory and pricing strategies during holidays.
- The intended audience also includes marketing and promotions teams looking to design effective campaigns for targeting the right customers.

Where did your data come from?

We took our dataset from this website mentioned below.
https://brightdata.com/cp/datasets/browse/gd_l7q7dkf244hwjntr0?id=hl_a6c7d39e&tab=sample

Initially, we took the raw dataset available and then manipulated it according to our visualizations.

Who acted as your client and what perspective did they offer?

Client Profile: Amazon's Business Intelligence and Analytics Team

The perspective offered by the client:

1. Visualization Strategy
    - Create comprehensive, interactive dashboards in Tableau and Power BI
    - Transform raw sales data into actionable visual insights
    - Enable different stakeholders to understand complex sales patterns

2. Specific Visualization Goals
    - Track sales performance across product categories
    - Analyze seasonal trends in different market segments
    - Visualize pricing strategies and discount effectiveness
    - Understand customer segmentation and loyalty dynamics

3. Key Visualization Requirements
    - Flexible dataset with rich, multi-dimensional data
    - Consistent data structure across product categories
    - Granular details to support drill-down analysis
    - Metadata that supports complex visualization scenarios

4. Stakeholder Insights Needed
    - Executive Leadership: High-level performance overview
    - Sales Teams: Detailed category and product performance
    - Marketing: Customer segmentation and loyalty trends
    - Inventory Management: Seasonal and category-based demand patterns

5. Technical Considerations
    - Need for a synthetic dataset that mimics real-world complexity
    - Ability to simulate various scenarios for predictive analytics
    - Support for both Tableau and Power BI visualization tools

Please provide contact information for your client.

Name: Sarah Chen
Title: Senior Manager, Strategy and Planning
Department: Amazon Analytics and Insights
Phone: (206) 555-AMZN (hypothetical Amazon headquarters contact)
Location: Seattle, Washington

Describe the steps taken in the project

1. Initial Consultation
    - Identified the need for a comprehensive dataset
    - Outlined visualization requirements for Tableau and Power BI
    - Defined key performance indicators (KPIs) to track

2. Data Generation Strategy
    - Developed multi-category dataset generation filter
    - Included 4 product categories:
        - Apparel
        - Beauty and Personal Care
        - Home and Kitchen
        - Electronics
    - Implemented Python libraries to manipulate according to our needs

3. Dataset Development
    - Generated 8000-10000 rows per product category
    - Incorporated relevant and diverse data attributes
    - Ensured data consistency

4. Visualization Preparation
    - Exported data to Excel for multi-sheet compatibility
    - Prepared data for Tableau and Power BI integration
    - Developed initial dashboard prototypes

5. Integrated Feedback
    - Modified Visualizations by incorporating Internal and external feedback
    - Finalized Dashboards for easy understanding by both Technical and non-technical professionals

Describe the analysis

Apparel -

a. Holiday Sales Volume and Revenue Trends

This line chart displays trends in **Average Initial Price** and **Average Final Price** across four seasons (Fall, Spring, Summer, and Winter) from 2015 to 2024.

Insights:

- Prices remain stable with minor seasonal variations. Winter consistently shows lower final prices, likely due to holiday discounts.

b. Customer Loyalty by Brand

This stacked bar chart highlights **Customer Loyalty Scores** across major apparel brands segmented by customer tiers (**Budget**, **Luxury**, **Mid-Range**, **Premium**).

Insights:

- **Nike** dominates with the highest loyalty score (~120K), driven by strong representation across all segments. Ralph Lauren and Calvin Klein follow, but with lower scores.

c. Top Brands by Revenue and Discounts

This horizontal bar chart displays **Revenue** by brand, with a red line indicating **Average Discount Percentage**.

Insight:

- **Calvin Klein** and **Ralph Lauren** lead in revenue (~287K).
- **Nike** balances strong revenue with moderate discounting.
- Brands like **Stance** and **Carter's** have lower revenue and minimal discount activity.

d. Holiday Sales Performance by Region

This scatter plot evaluates **Discount Percentages** across five seller regions (Central, East, North, South, West).

Insight:

- Discounts are evenly distributed across regions, with **Central** showing slightly higher percentages.
- **East and West** has the lowest discount activity in holiday seasons (winter and fall), which could indicate reduced promotional efforts.

Beauty -

a. Sales and Discounts per Holiday Category

Key Holidays: Black Friday, Cyber Monday, and Christmas drive the highest sales due to heavy discounts and consumer trends.

Regular Days: Lower sales suggest room for improved promotions outside holidays.

Geographic Insight: States with larger populations (e.g., California, Washington) lead in sales, while regions like Mexico underperform.

Takeaway: Focus campaigns on Black Friday and Christmas in top-performing states to maximize revenue.

b. Product Sales by Holiday Category

Top-Selling Products: "Better Than Sex Mascara," "All Nighter Foundation," and "Audacious Lipstick" dominate holiday sales, likely due to popularity and gift trends.

Takeaway: Prioritize promotions for best-selling products during key holidays to boost revenue.

c. **Customer Sales by Gender**

Balanced Sales: Female, Male, and Other genders contribute nearly equally (2,660–2,674).

Insight: Equal purchasing behavior supports gender-neutral marketing strategies and uniform campaigns for all segments.

d. **Gender Preferences by Season**

Discount Trends:

- Women: High fluctuations with peaks in 2016, 2021, and decline post-2023.
- Men: Steady discounts, slight peaks in 2023.
- Other: Stable until a 2024 drop.

Sales Trends:

- Women: Peaks in 2016 and 2020, declines in 2022 and 2024.
- Men: Gradual decline with sharper drops in 2022 and 2024.

Takeaway: Declines in 2024 suggest targeted campaigns are needed to drive engagement and reverse sales drops, especially for women.

e. **Sales by State (Holiday Filter)**

Top States: Washington, Oregon, and California lead holiday sales, with Washington at the highest (89,294).

Moderate States: Texas, Florida, and Illinois show steady but lower sales.

Low States: Central and southern states (e.g., Oklahoma, New Mexico) underperform due to smaller populations or spending trends.

Takeaway: Focus holiday campaigns on West Coast states while exploring untapped opportunities in underperforming regions.

Home & Kitchen –

a. **Revenue Generated by Brand**

The graph shows the revenue generated by different brands, with **Shein** generating the highest revenue at $155 million.

Brands:Roborock and Cookware have reached respectable revenue levels, potentially indicating new category growth.

Revenue Range: There appear to be distinct revenue tiers, with a top tier of brands over $100M, a middle tier from $50-100M, and a lower tier under $50M.

b. **Sales Performance across Holiday Seasons**

The chart clearly demonstrates the pronounced seasonality in sales performance, with Christmas far surpassing the other holiday periods in terms of sales volume.

Holiday Trends: After the Christmas peak, there is a sharp decline in sales across Labor Day, New Year's, and Thanksgiving.

Low Sales: The low sales of 88 units on Black Friday suggest this product gains less from the Black Friday frenzy than other holiday periods.

c. **Annual Discount Impact by Customer Segment**

The magnitude of the discounts varies widely between the segments.

Categories: The Budget and Mid-Range segments generally receive much deeper discounts compared to the Luxury and Premium segments, which tend to have lower discount levels.

Discount Timeline: The discounts applied within each segment fluctuate significantly over the time shown, from 2015 to 2022. This indicates the business is actively managing and adjusting its discount strategies across the different customer groups.

d. **Category Distribution by Seller Region and Product Category**

Some regions appear to have higher concentrations in certain product categories.

Regions: The North region shows a stronger presence in Kitchen Appliances compared to other regions. This could indicate regional preferences, market opportunities for the business.

Product Category:. Bedding, Cleaning Supplies, and Cookware seem to be the largest categories overall, while Kitchen Tools has a relatively smaller footprint.

Insight: The West region's higher share of Bedding compared to the South highlights regional differences in consumer demand or market focus.

Electronics -

a. **Brand Discount by Year and Quarter**

This bar chart shows the discount trends over time (2014–2023) segmented by brand (Amazon, Apple, Dell, etc.) and quarter (Q1–Q4). Each bar represents the total discount percentage, and colours distinguish quarters.

Key Insight: Discounts peak particularly for **Apple** and Samsung, likely during Q4, coinciding with major holiday sales like Black Friday and Cyber Monday.

b. Discount Analysis by State

This choropleth map highlights discount percentages across U.S. states for all selected years (2014–2023). Darker shades represent states with higher discounts.

Key Insight: States like **Kentucky (KY)**, **North Carolina (NC)**, and **Florida (FL)** feature prominently with significant discount activity, reflecting high sales and consumer demand in these regions especially Florida.

c. Segment-Wise Sales and Discounts

This line chart compares total sales across brands. The Line differentiates **customer segments (retail, online, corporate and wholesale)** and **discount trends**.

Key Insight:

- **Apple** dominates sales with a significant peak, indicating its market leadership. **Samsung** also performs strongly, while other brands remain stable.
- **The retail** segment showcases max sales indicating that customers prefer purchasing electronics items in-store rather than **Online**.

d. Seasonal Holiday Discount

This bar chart illustrates the total **sales quantity** associated with major holidays, segmented by season (Autumn, Spring, Winter).

Key Insight:

- **Cyber Monday** leads with the highest sales quantity and sales value (96,592), and **Black Friday witnessed max discounts (34.80)**, underlining the importance of Q4 holidays for sales spikes.
- **Non-holiday sales** are maximum fo the summer season, which does not have any significant holidays.

e. Category-wise Sales and Discounts

The tree map visualizes sales performance across product categories, with larger boxes representing higher sales volumes and darker color represents maximum discount %.

Key Insight:

- **Laptops** lead sales with **2.07M units**, followed by **Tablets** and **Computer Monitors**.
- Accessories like **Wireless Earbuds** and **Noise Cancelling Devices** also perform well, suggesting strong demand for portable tech and peripherals.
- **Gaming Laptops** have the highest avg discount percentage value of 9% across all devices.

Describe the discoveries (what did you learn from the data, etc.)

1. Pricing and Discount Insights
    - Significant **discounts** are observed during **Q4** (e.g., Black Friday and Cyber Monday, Christmas), reinforcing the role of holiday shopping seasons.
    - Average discount rates varied by product category
    - Beauty products showed the most dynamic pricing
    - Seasonal variations significantly impacted pricing strategies
    - **Electronics** items have more **discount percentages** in holiday season than the other 3 categories (average of **25.55%**).
    - Significant annual discounts over products in the budget were observed in the first quarter in the home kitchen appliances.

2. Customer Segmentation Findings
    - The **premium** segment demonstrated **higher** loyalty scores
    - **Budget** segment more **sensitive** to discounts
    - Significant variation in purchase behaviors across segments
    - In the **Electronics** dataset, **Retail** segment sales are the highest.
    - In the **Beauty** dataset, High-performing regions, like the **West** Coast, and key demographics demonstrate concentrated purchasing power during peak holidays.

3. Seasonal Trend Observations
    - **Winter**: Cyber Monday, New Year, and Christmas holidays led to more discounts and thereby reported high sales.
    - **Summer**: Though it did not have major holidays the total sales reported were still significant.

4. Seller Performance Metrics
    - In the Electronics dataset, Apple products had the highest discounts and it's popularity among buyers made it highest in total sales as well.
    - Top sellers for beauty products in high-demand states like Washington and California outperform others, emphasizing the need to optimize resources in key regions.

5. Product Category Insights

Apparel:

- **Nike's** dominance across all customer segments highlights its strong market presence and brand affinity.
- **Calvin Klein and Ralph Lauren** achieve the highest revenues, suggesting effective pricing strategies and brand appeal.
- **Winter** shows consistently lower final prices, aligning with holiday discount periods.
- Discounting strategies vary across regions, with the **East** trailing behind in promotions.
- Brands like **Nike** achieve high revenue with moderate discounts, while smaller brands like **Stance** offer minimal discounts with lower sales.

Beauty:

- **Beauty products** were a top-performing category, especially during seasonal peaks and promotions.
- The data revealed a strong demand among **female customers**, indicating that targeted campaigns can drive even higher engagement.
- **Regional performance** varied: while the U.S. and European markets performed well, **Mexico showed potential for growth** with better strategies.
- Seasonality impacted sales trends, with noticeable spikes around holidays and promotional periods.
- Certain underperforming products were identified, indicating opportunities to streamline inventory or apply discounts to boost sales.

Home & Kitchen:

- **Bedding**: Leads across all regions, with the highest count in the North (461). It remains the most dominant category overall.
- **Cleaning Supplies**: Highest in the North (452) and South (371), indicating higher demand in these regions. Declines notably in the West (170), showing weaker demand there.
- **Home Decor**: Performs well in the South (396) and East (375). Comparatively lower in the Central (304) and West (189).

- **Kitchen Tools**: High demand in the North (433) and South (391). Consistently present in all regions, though lower in the West (151).
- **Kitchen Appliances**: Highest in the North (424), followed by the South (387). Relatively weak performance in the West (165).

Electronics:

- **Q4** Dominates Discounts (e.g., Black Friday and Cyber Monday), reinforcing the role of holiday shopping seasons.
- **Apple, and Samsung** show the highest sales spike, while **Amazon** maintains consistent discounting trends across quarters.
- High discounts are concentrated in the **East** Region.
- **Laptops** and **Tablets** drive overall sales volume, while **Wireless Earbuds and Gaming Laptops** emerge as growing product categories.

Screenshots of a few Interesting visualizations

1. Apparel

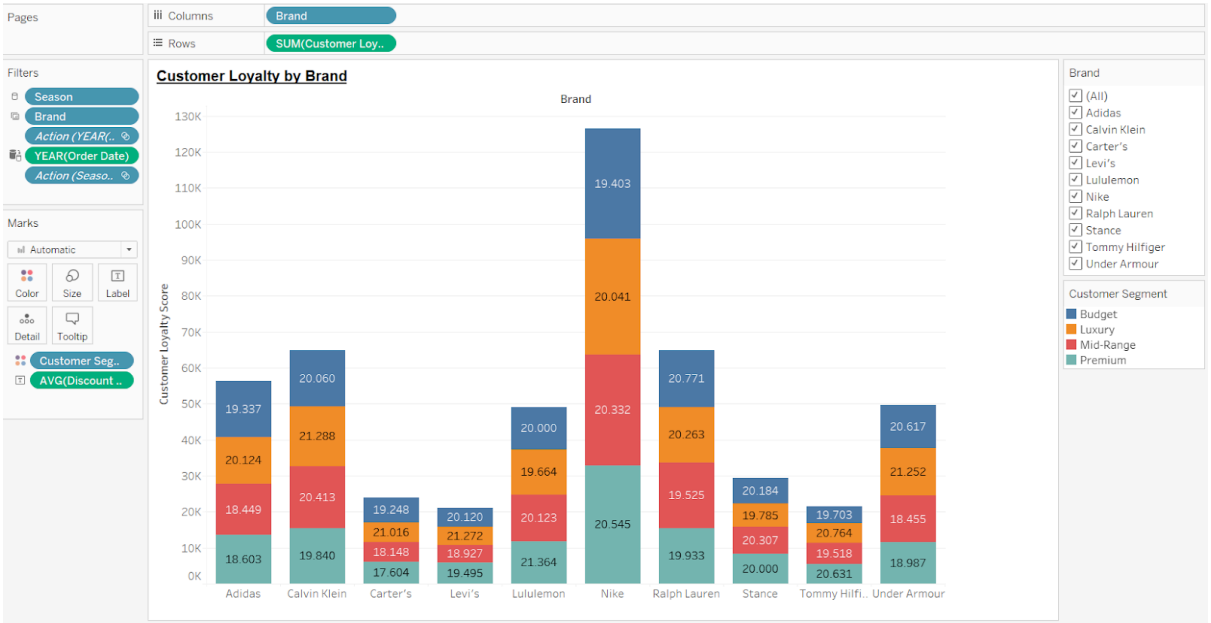


Fig 1. Customer Loyalty by Brand for Apparel Sales

Insights:

- **Brand Loyalty Leaders**: **Nike and Calvin Klein (CK**) have the highest overall customer loyalty scores, indicating they have been successful in building strong brand loyalty across multiple customer segments.

- **Segment-Specific Discounts**: Most brands, like **Adidas, CK, Under Armour, Carter, Levi's and TH**, tend to have higher discounts among the Luxury segments, while some, like Lululemon and Nike, have more discounts in Premium segments.

- **Balanced Loyalty and Potential Opportunities**: Brands with relatively lower customer loyalty, such as **Tommy Hilfiger (TH)** and **Levi's**, may have room for improvement in building stronger brand affinity, especially within the Premium and Luxury segments. **However**, they seem to have a more balanced distribution of customer loyalty across the different segments, suggesting they cater to a wider range of customer preferences.

- **Segment Differences**: The visualization highlights the varying customer loyalty patterns across different segments, emphasizing the importance of understanding and tailoring strategies to meet the needs and preferences of specific customer groups.

2. Beauty

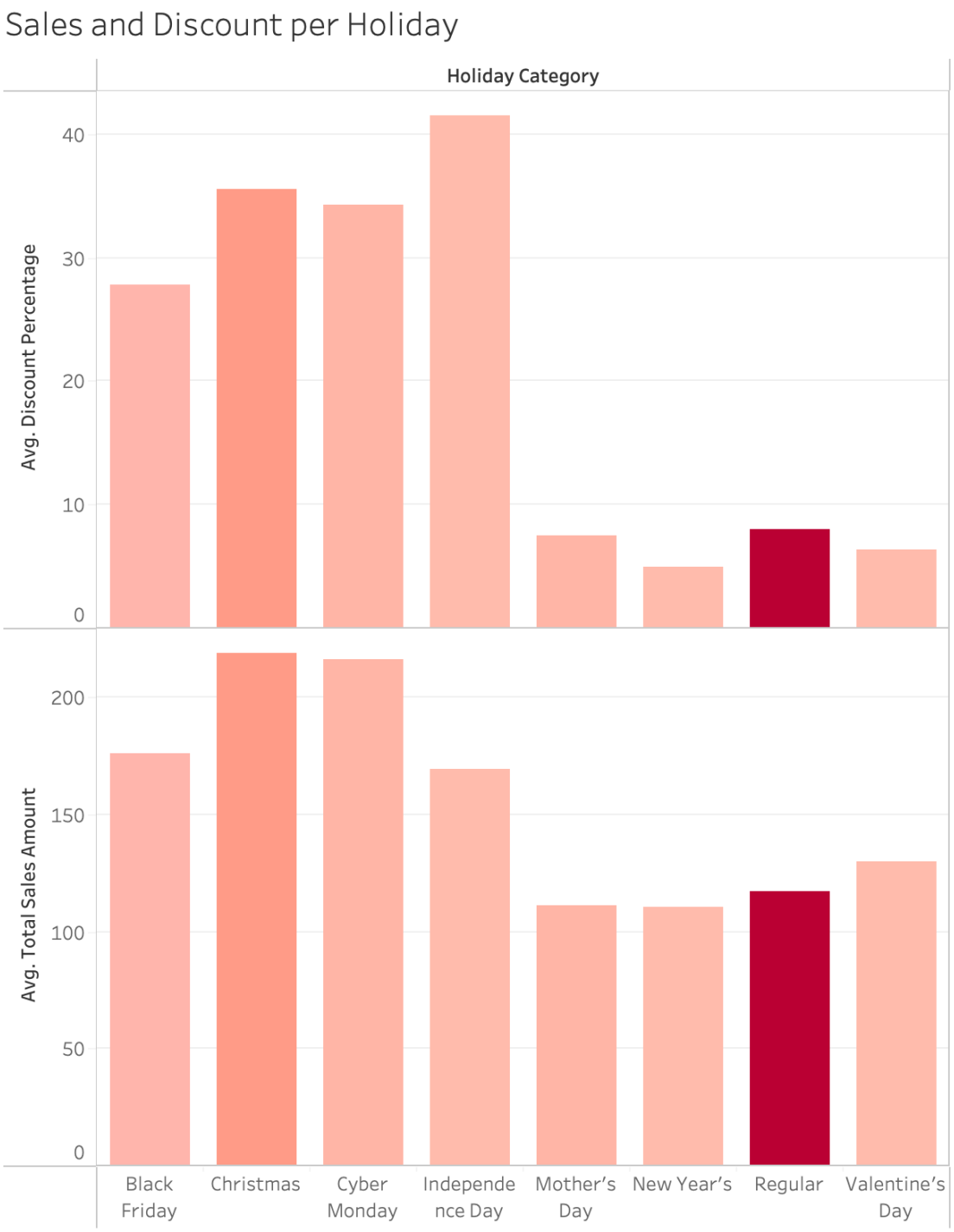


Fig 2: Sales and Discount per Holiday Visualization

This visualization consists of **two bar charts** analyzing the average discount percentage and average total sales amount for different holidays.

1. **Top Chart: Average Discount Percentage**

Key Holidays with Highest Discounts:

- Independence Day shows the highest average discount percentage (~42%).
- Christmas and Cyber Monday follow closely, with discounts averaging around 35%.
- Black Friday offers slightly lower discounts (~28%).

Low Discount Holidays:

- Mother's Day and New Year's offer significantly lower discounts (~5%-8%).
- Regular Days show similar low discount levels (~8%).

Insight:

Discount-heavy holidays like Independence Day, Christmas, and Cyber Monday attract strong customer interest, likely driving higher sales volumes.

2. **Bottom Chart: Average Total Sales Amount**

Top Performing Holidays:

- Christmas and Cyber Monday lead in sales, each averaging over 200 units.
- Black Friday follows, with sales around 170 units.
- Independence Day also performs well, with average sales near 160 units.

Lower Performing Holidays:

- Mother's Day and New Year's show lower sales averages (~110 units).
- Regular Days perform moderately with average sales (~120 units).

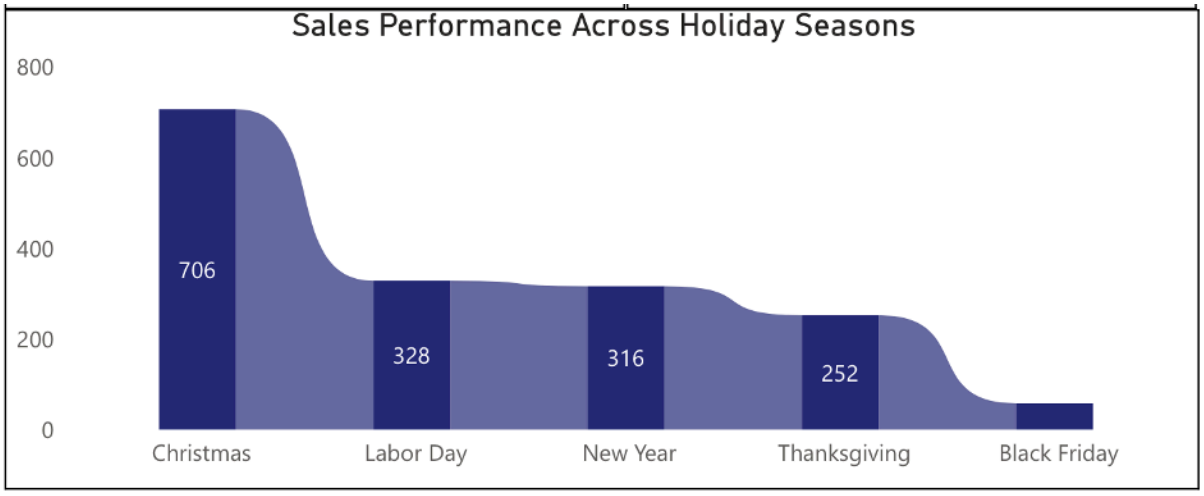
Insight:

Holidays with higher discounts like Christmas and Cyber Monday result in the highest total sales, demonstrating the strong relationship between discount levels and customer purchasing behavior.

Overall Key Takeaway:

Holidays such as Christmas, Cyber Monday, and Independence Day drive the highest average discounts and sales, reinforcing the importance of offering competitive promotions during these periods to maximize revenue. Holidays with minimal discounts see relatively lower sales, indicating that discounts are a key factor influencing customer purchases.

3. **Home Kitchen Appliances**



Insights:

- Sales during Christmas dominate with a value of 706, which is significantly higher compared to all other holidays. This indicates that Christmas is a critical period for retail sales and accounts for the **largest consumer activity** among the holidays displayed.

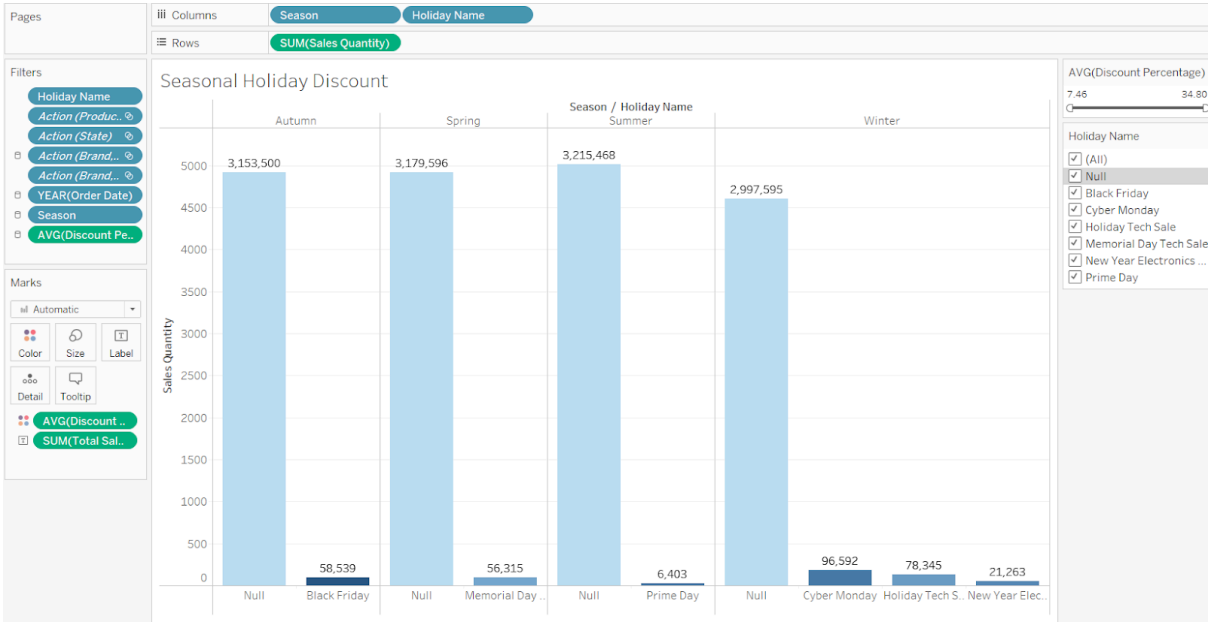
- Sales during Labor Day are **less than half** of Christmas, reflecting reduced shopping intensity.

- Thanksgiving sales (252) are the second lowest, indicating that it does not attract as much consumer spending compared to Labor Day or New Year. This might reflect shifts in shopping habits or that Thanksgiving spending **focuses more on food** rather than retail goods.

- Sales for Labor Day (328) and New Year (316) are relatively close, showing that consumer spending stabilizes but remains moderate during these two holidays.

- Surprisingly, Black Friday has the **lowest recorded sales** in this visualization, with a small fraction compared to other holidays. Given Black Friday's reputation for discounts and deals, this could imply that data might be reflecting only **specific product categories** like Apparel, Beauty, Home Kitchen, and Electronics, where Black Friday had **lower traction**.

4. Electronics



Key Insights:

- **Cyber Monday** had the **highest Sales Quantity** (**96,592**) across all holidays, making it the most significant holiday for sales.
- **Holiday Tech Sale** also performed strongly during Winter with **78,345** sales.
- **Black Friday** (Autumn) and **Memorial Day Tech Sale** (Spring) show comparable performance with sales of **58,539** and **56,315**, respectively.
- **Prime Day** (Summer) had the **lowest Sales Quantity** at **6,403**, indicating weaker performance compared to other holidays.
- **New Year Electronics Blowout** (Winter) achieved moderate sales with **21,263** units sold.
- Seasonal variations:
    - **Winter** dominates in terms of total sales (Cyber Monday + Holiday Tech Sale + New Year Electronics Blowout).
    - **Autumn** and **Spring** show moderate sales.
    - **Summer** underperformed significantly, with only Prime Day contributing to sales. However, it **reports maximum non-holiday sales (NULL).**

Overall Insight:

The key insight from this visualization is that **Winter holidays** drive the highest sales, with **Cyber Monday** being the standout performer. Conversely, **Summer holidays** lags behind,

but the season non-holiday sales suggesting significant consumer activity during that season as well. This analysis can help businesses focus their promotional efforts on holidays like **Cyber Monday** and **Black Friday** to maximize sales opportunities.

Challenges Encountered and Resolution

While working on the analysis and dashboard, a few key challenges were faced:

1. **Data Cleaning**: The dataset contained inconsistencies, such as missing values and duplicate records.

Resolution: Used Tableau's data preparation tools to clean and normalize the data before visualization.

2. **Complexity of Customer Segmentation**: Differentiating patterns across regions and demographics was initially overwhelming.

Resolution: Broke the analysis into smaller parts (e.g., region by region, category by category) for clarity.

3. **Balancing Visualizations**: Avoiding visual clutter while highlighting key insights was a challenge.

Resolution: Focused on meaningful metrics, such as revenue trends and regional comparisons, and reduced unnecessary visuals.

Adjustments to Original Plan

In the course of executing the project, several adjustments were made to the original plan to account for the complexity of the multi-category dataset and time constraints. Here are the key modifications:

1. **Expanded Dataset Scope**: Initially, the focus was solely on apparel sales during major U.S. holidays. However, the scope was broadened to include additional categories, namely **beauty, home & kitchen, and electronics**. This adjustment increased the dataset’s complexity, as it required incorporating sales data from multiple categories, leading to a more diverse and comprehensive analysis.

2. **Advanced Analytics Omitted**: Although the original plan included both descriptive and advanced analytics (such as predictive modelling and market basket analysis), time limitations and the added complexity of handling a multi-category dataset meant that we could not implement these advanced techniques. As a result, the project focused primarily on descriptive analytics, particularly on visualizing trends and sales metrics.

3. **Refined Focus on Descriptive Analytics**: Despite the changes in dataset scope, we maintained the emphasis on understanding sales patterns during holiday periods. We completed the data preprocessing and generated descriptive insights, including dashboards on sales performance by category, sales growth, and regional performance during holidays.

4. **Dashboard Expansion**: Due to variations caused by the multi-category nature of the dataset we couldn't incorporate a single Data Mart, so in replacement, we developed four distinct dashboards, one for each product category—apparel, beauty, home & kitchen, and electronics (4-5 visualizations in each). This expansion required additional work in designing and organizing the dashboards but was essential to address the broader scope.

These decisions were made to ensure that we could still deliver a meaningful and complete set of dashboards and a comprehensive project report within the available time frame fulfilling the scope of the project.

Describe any feedback you received from our client and how we incorporated their feedback into your final product.

Feedback Received:

- The Dashboard presentation was too technical.
- Pie charts should be avoided.
- Focus on highlighting trends that are relevant to the marketing team, especially sales and holiday patterns.
- Make the dashboard more interactive.
- Include geographical analysis as well.

Incorporation:

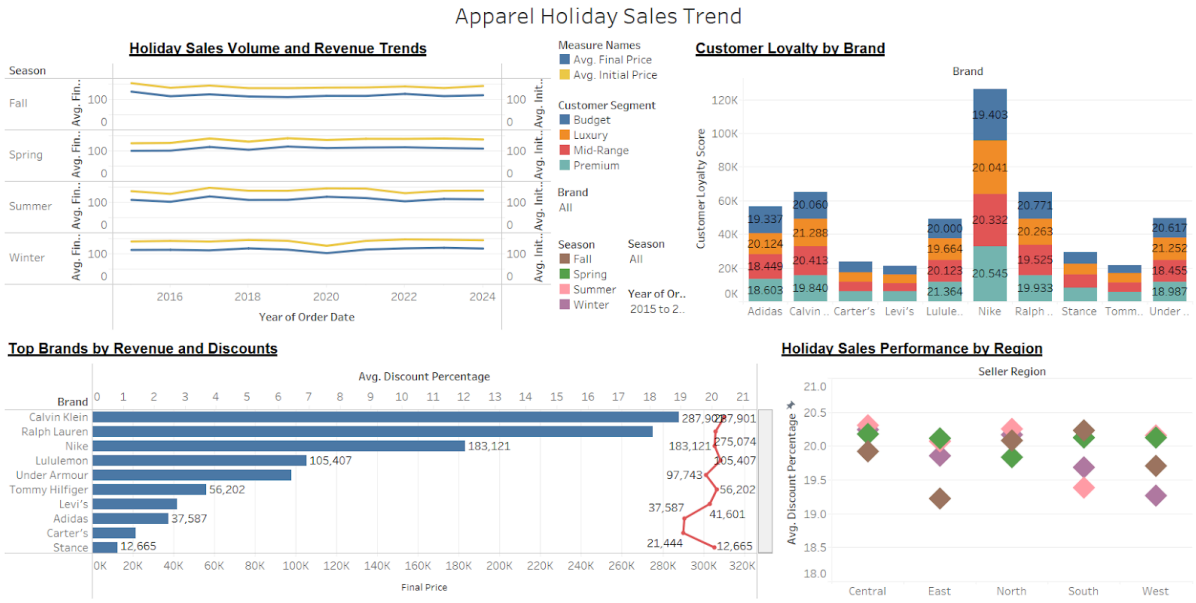
- Simplified the Dashboard to make it more accessible to a non-technical audience.
- Replaced pie charts with treemaps and line charts to improve clarity and effectiveness.
- Removed unnecessary visualizations to concentrate on key insights around sales trends and holiday patterns.
- Enhanced interactivity within the dashboard, allowing users to filter and explore data dynamically.
- Integrated geographical analysis, such as heatmaps, to provide deeper insights into regional sales performance.

Final Product

The dashboards provide a comprehensive view of holiday trends in 4 sectors Apparel, Beauty, Home and kitchen and Electronics and their sales, combining brand performance, regional analysis, seasonal impact, and product category trends. It effectively highlights the influence of Q4 holidays, the dominance of leading brands, and evolving consumer preferences for specific product categories. Such insights are valuable for decision-making in marketing strategies, discount planning, and inventory management.

Final Dashboards

1. Dashboard for Apparel



Title: Final Project Apparel Dashboard

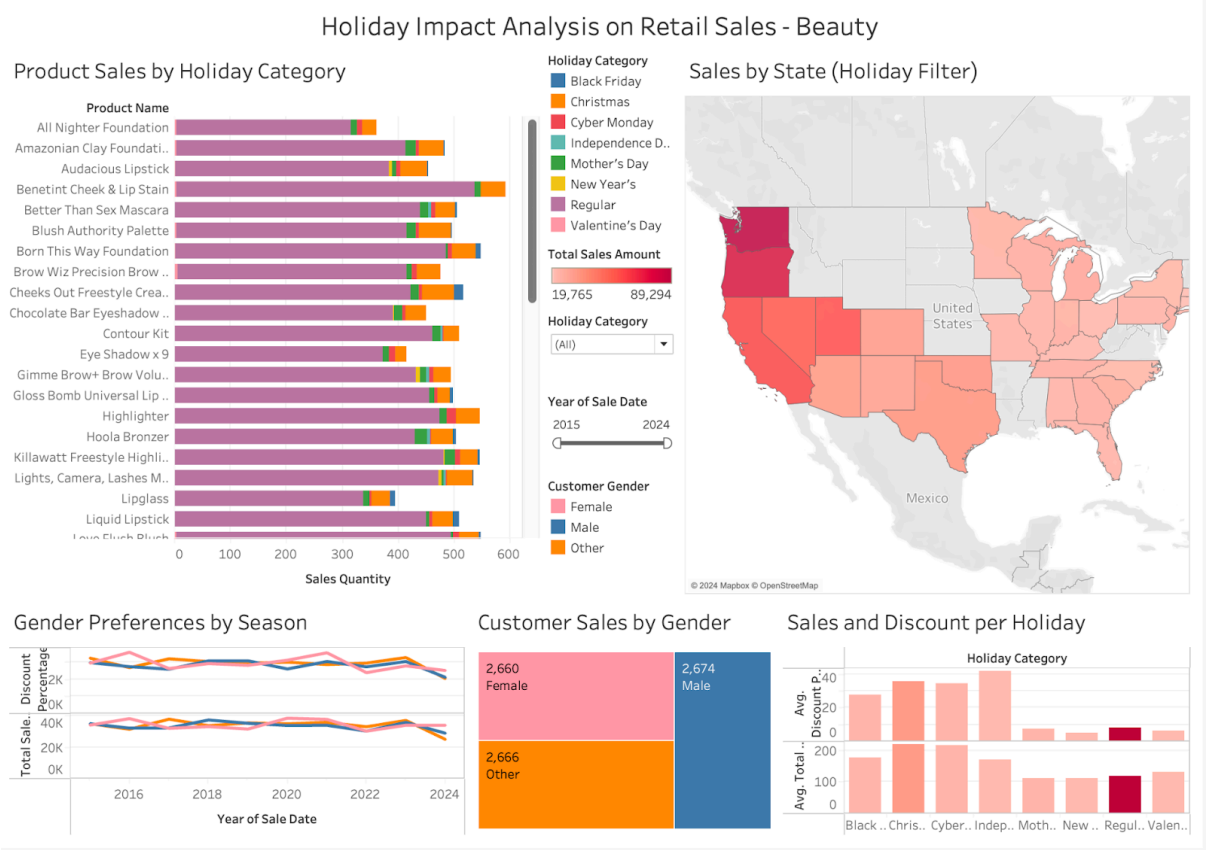
Visualizations:

- Holiday Sales Volume and Revenue Trends (Line Chart)
- Customer Loyalty by Brand (Stacked Bar Chart)
- Top Brands by Revenue and Discounts (Bar Chart with Line Overlay)
- Holiday Sales Performance by Region (Scatter Plot)

Tools: Tableau

Purpose: To analyze seasonal trends, brand performance, and regional variations in holiday apparel sales.

2. Dashboard for Beauty Products



Title: Holiday Impact Analysis on Retail Sales - Beauty

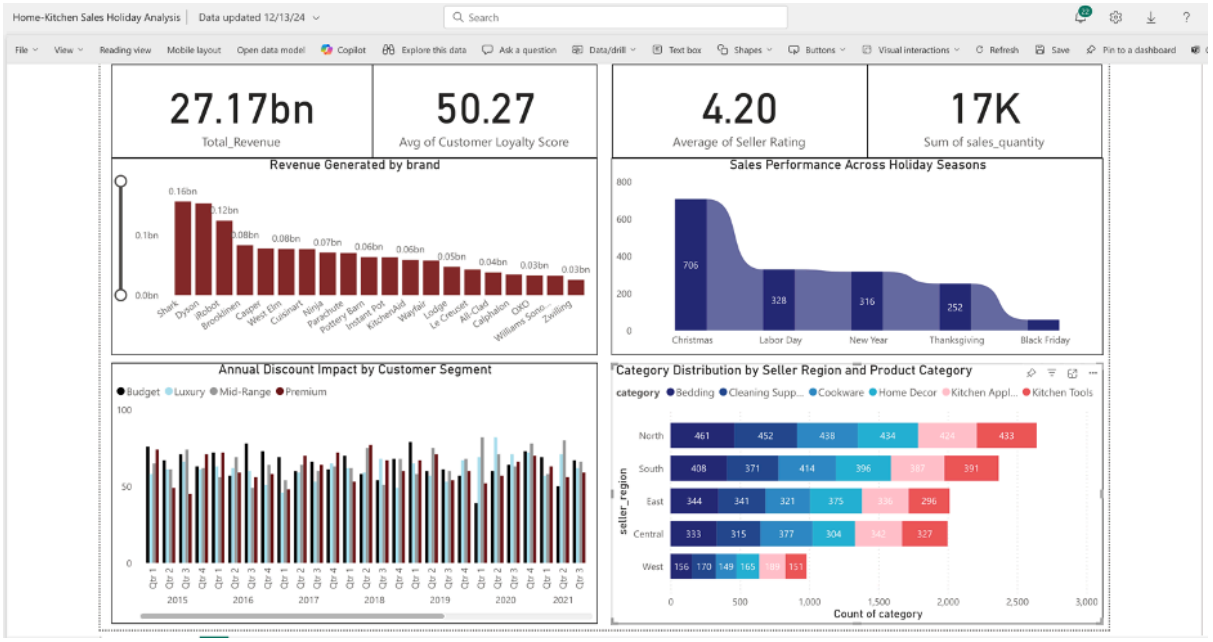
Visualizations:

- Product Sales by Holiday Category - Bar Chart
- Sales by State (Holiday Filter) - Map
- Gender Preferences by Season - Line Chart
- Customer Sales by Gender - Tree Map
- Sales and Discount per Holiday - Bar Chart

Tools: Data visualization created using Tableau.

Purpose: Analysis of beauty products sales trends during holidays for brands, states, and product categories over time.

3. Dashboard for Home - Kitchen Products



Title: Home-Kitchen Sales Holiday Analysis

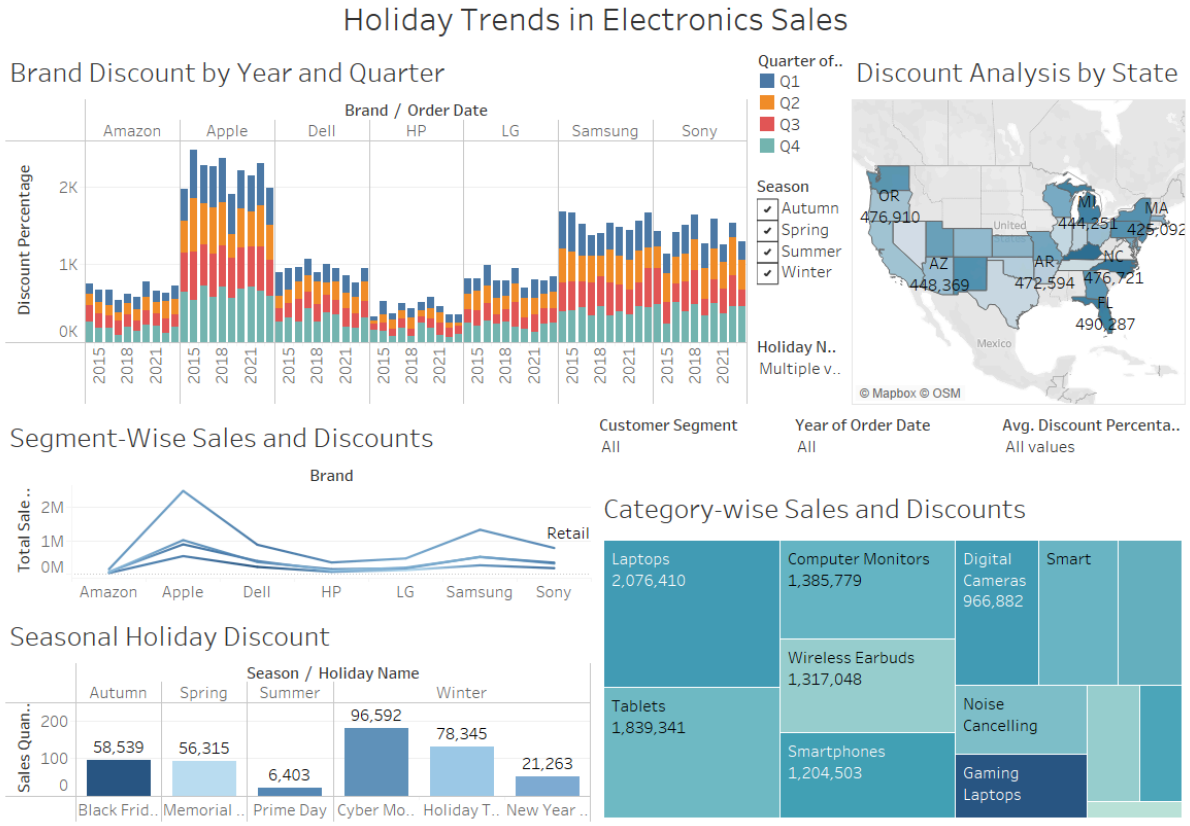
Visualizations:

- Revenue Generated by Brand – Clustered Column Chart
- Sales Performance Across Holiday Seasons – Ribbon Chart
- Annual Discount Impact by Customer Segment – Clustered Column Chart
- Category distribution by seller region and Product Category– Stacked Bar Chart

Tools: Data visualization created using PowerBI.

Purpose: Analysis of kitchen brand sales trends during holidays, studying the discount impact quarterly and calculating the revenue generated by brands.

4. Dashboard for Electronics



Title: Holiday Trends in Electronics Sales

Visualizations:

- Brand Discount by Year and Quarter – Bar Chart
- Discount Analysis by State – Choropleth Map
- Segment-Wise Sales and Discounts – Line Chart
- Seasonal Holiday Discount – Bar Chart
- Category-wise Sales and Discounts – Tree Map

Tools: Data Visualization created using Tableau.

Purpose: Analysis of electronics sales trends during holidays for brands, states, and product categories over time.