ADIDAS SALES ANALYSIS

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Abstract

Adidas's sales performance during the years 2020 and 2021 - a leading global sportswear brand—was influenced by many factors, which included the significant impact of the COVID-19 pandemic, shifts in consumer behavior, economic conditions, and company-specific strategies.

In 2020, the COVID-19 pandemic disrupted retail operations, leading to store closures, supply chain challenges, and changes in consumer spending patterns. Consequently, Adidas experienced a decline in sales, particularly in April 2020, as lockdown measures and economic uncertainty constrained consumer demand. Sales performance varied by region, with markets experiencing different levels of pandemic-related disruptions and recovery trajectories.

In 2021, things started to recover and show resilience. As vaccination efforts progressed and economies began to reopen, Adidas experienced a gradual recovery in sales. Consumer confidence improved, leading to increased spending on sportswear and athletic apparel as people resumed outdoor activities and returned to gyms. According to sales data from 2021, the trends followed usual sales trends. E-commerce continued to be a significant driver of sales growth for Adidas in 2021, with the brand capitalizing on the sustained popularity of online shopping channels.

Adidas' sales analysis for 2020 and 2021 reflects the brand's resilience, adaptability, and commitment to innovation in response to unprecedented challenges and opportunities. Conversely, Adidas navigated uncertainty, leveraging its strengths in digital transformation, product excellence, and brand equity to drive growth and sustain its position as a leading player in the sportswear industry.

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Introduction

In today's dynamic marketplace, understanding consumer behavior and market trends is crucial for any business seeking to thrive and remain competitive. As the world of retail continues to evolve, data-driven insights play an increasingly pivotal role in shaping effective marketing strategies and driving business success. With this in mind, we turn our attention to the realm of sportswear retail, focusing specifically on the renowned brand, Adidas.

The Adidas Sales Dataset presents a valuable opportunity for us to delve into the intricacies of consumer preferences and purchasing patterns within the sportswear industry. With comprehensive information on sales transactions, including retailer details, product specifics, and regional insights, this data set serves as a rich source of knowledge for our analysis.

Pitch Topic Idea

Exploring Consumer Behavior and Market Trends: Unveiling Insights from Adidas Sales Data

Initial Question

How do regional variations, retailer dynamics, and shopping trends influence Adidas sales performance?

Background

Adidas, a globally recognized leader in sportswear and footwear, commands a significant presence in the retail landscape. With a diverse product range catering to athletes and fashion enthusiasts alike, Adidas has cemented its position as a go-to brand for quality, style, and innovation. However, in a market characterized by ever-changing consumer preferences and intensifying competition, staying ahead requires a nuanced understanding of the factors driving sales and market trends.

Importance for the Business

For Adidas and other stakeholders in the sportswear industry, the insights gleaned from this analysis hold significant strategic value. By understanding the nuances of consumer behavior and market trends, Adidas can fine-tune its marketing strategies, optimize product offerings, and

enhance its competitive position. Moreover, by identifying emerging opportunities and potential challenges, Adidas can proactively adapt its approach to capitalize on market trends and drive sustainable growth. Ultimately, leveraging data-driven insights enables Adidas to strengthen customer engagement, maximize sales performance, and maintain its status as a market leader in the dynamic world of sportswear retail.

Note: *It's important to acknowledge that while the data presented in this analysis is hypothetical, it is based on trends and patterns commonly observed in the retail industry. Furthermore, it's worth noting that the dataset covers the years 2020 and 2021, a period marked by the unprecedented challenges posed by the COVID-19 pandemic. As such, the insights derived from this analysis should be interpreted with the understanding of the unique circumstances and market dynamics prevailing during this time.*

Methodology

Data Sources and Collection

The Adidas Sales Dataset utilized for this analysis was obtained from Kaggle, accessible via the following link: Adidas Sales Dataset. This dataset comprises 13 columns and 9648 rows, providing comprehensive insights into Adidas product sales across various regions and retailers.

Column Descriptions

- **Retailer:** Represents the retailer names, including Foot Locker, Walmart, Sports Direct, West Gear, Kohl's, and Amazon.
- **Retailer ID:** Unique identifiers assigned to each retailer.
- **Invoice Date:** Dates of sales transactions spanning the years 2020 and 2021.
- **Region:** Categorizes sales data into geographical regions, including Northeast, South, West, Midwest, and Southeast.
- **State:** Identifies the states within each region where sales transactions occurred.
- **City:** Specifies the cities where sales transactions were conducted.
- **Product:** Classifies Adidas products into categories such as Men's Street Footwear, Men's Athletic Footwear, Women's Street Footwear, Women's Athletic Footwear, Men's Apparel, and Women's Apparel.
- **Price per Unit:** Indicates the price of each unit sold in dollars.
- **Units Sold:** Quantity of units sold per transaction.
- **Total Sales:** Total sales revenue generated per transaction in dollars.
- **Operating Profit:** Profit derived from sales transactions after deducting operating expenses, measured in dollars.
- **Operating Margin:** The percentage of operating profit relative to total sales revenue.
- **Sales Method:** Specifies the method of sales transaction, including in-store, online, and outlet.

Figure 1: Screenshot of data before data preprocessing

Data Preprocessing for Enhanced Analysis

Optimizing the Adidas Sales Dataset for Actionable Insights

In our analysis, we chose to focus on the total sales as our response variable, aiming to understand the factors influencing overall sales performance. To explore the relationship between retailer ID and total sales, we initially calculated the correlation coefficient. The calculated value of -0.083579668 suggested a weak and insignificant correlation between retailer ID and total sales. As a result, we determined that retailer ID did not significantly contribute to explaining variations in total sales and subsequently removed it from our analysis.

Subsequently, in Microsoft Excel, we conducted further data preprocessing to ensure data consistency and facilitate downstream analysis. Specifically, we performed the following tasks:

1. **Cleaning Currency Symbols:** We removed the dollar symbol ($) from all values in the columns representing price per unit, total sales, and operating profit. This standardization ensured uniformity in data formatting, enabling accurate numerical analysis.
2. **Normalization of Operating Margin:** We removed the percentage symbol (%) from the operating margin column and divided all values by 100 to express operating margin as a decimal. This transformation facilitated comparative analysis and interpretation of operating margin values.
3. **Removal of Redundant Columns:** We identified and removed a redundant first column that contained no meaningful data, streamlining the dataset for analysis.

4. **Header Row Removal:** For ease of data manipulation and analysis in Tableau, we removed the header row containing the title "Adidas Sales Dataset."
5. **Duplicate Row Checking:** We conducted a thorough check for duplicate rows within the dataset, and fortunately, no duplicate rows were found. This ensured the integrity and accuracy of our dataset for subsequent analysis.

By implementing these preprocessing steps, we ensured that the dataset was clean, standardized, and optimized for subsequent analysis in Tableau. This meticulous approach enhances the reliability and accuracy of our findings, empowering us to derive actionable insights from the Adidas sales data.

Figure 2: Screenshot of data after preprocessing

Assumptions and Limitations

- Assumption: The dataset accurately reflects real-world sales transactions and is representative of Adidas' market performance during the specified period.
- Limitation: The dataset covers a two-year period (2020 and 2021) characterized by the COVID-19 pandemic, which may have influenced consumer behavior and sales trends. Therefore, findings should be interpreted considering the unique circumstances prevailing during this time.

By comprehensively understanding the dataset's structure and attributes, we are equipped to conduct a robust analysis that will uncover meaningful insights into Adidas's sales performance and market dynamics.

Exploratory Analysis Process: Creating an Interactive Sales Dashboard

Reviewing the Data and Initial Setup

Upon initiating exploration of the Adidas Sample Sales dataset in Tableau, we delved into connecting to the data source, unlocking a trove of insights. With Tableau's interface, we comprehended the data's structure, laying the foundation for analysis. Crafting visualizations, we addressed specific aspects of our inquiry, evolving our questions along the way. These visual aids illuminate pathways to insights, guiding our analytical journey toward actionable conclusions.

Creating Visualizations

After analyzing the data and connecting the data source, we gained insights from our visualization and formulated questions to find answers.

Sales by Month (Line Graph)

This visualization depicts the monthly sales trends of Adidas products in the USA for the years 2020 and 2021. The line graph illustrates the fluctuation in sales over time, providing insights into seasonal patterns and overall sales performance.
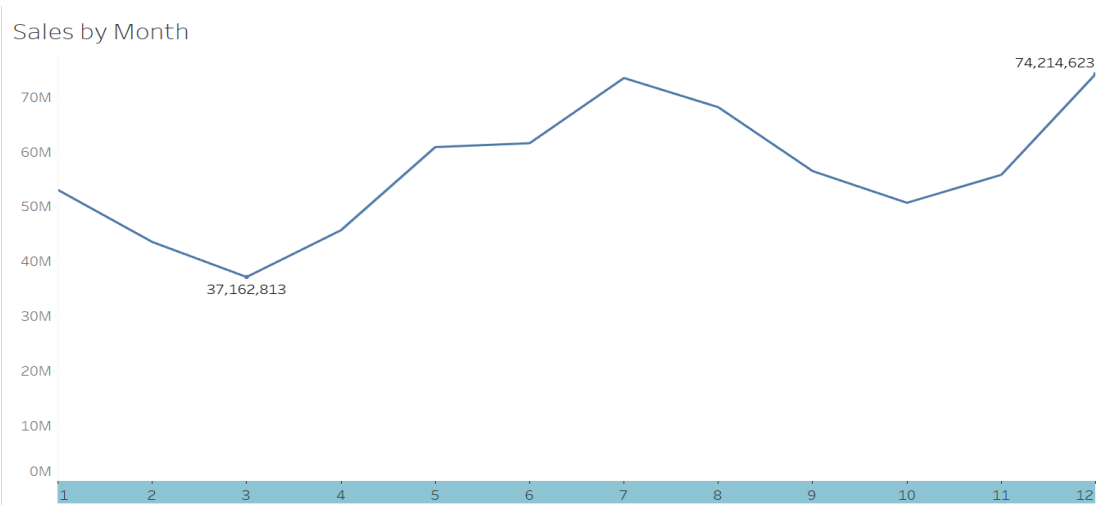
Figure 3: Sales by Month

Sales by State (Map):
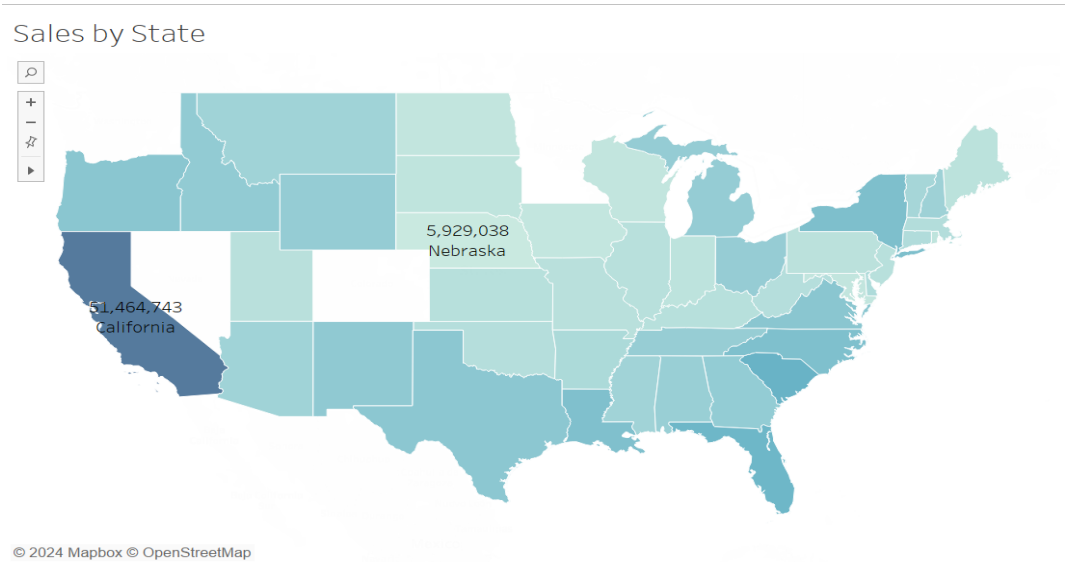
Figure 4: Sales by State

The map showcases the distribution of Adidas sales across different states in the USA during 2020 and 2021. By visualizing sales geographically, it highlights regions with high sales volumes and allows for the identification of potential market opportunities or areas for targeted marketing efforts.

Sales by Product (New York) (Packed Bubbles Plot)

Figure 5: Sales by Product (New York)

These packed bubbles plot focuses on Adidas sales within the state of New York for the years 2020 and 2021. The varying sizes of the bubbles represent sales volumes for different product categories, providing a clear comparison of their relative performance within the New York market.

Sales by Retailer (Horizontal Bars Plot):

Figure 6: Sales by Retailer

The horizontal bars plot presents a comparison of sales figures among different retailers of Adidas products in the USA during 2020 and 2021. By visuali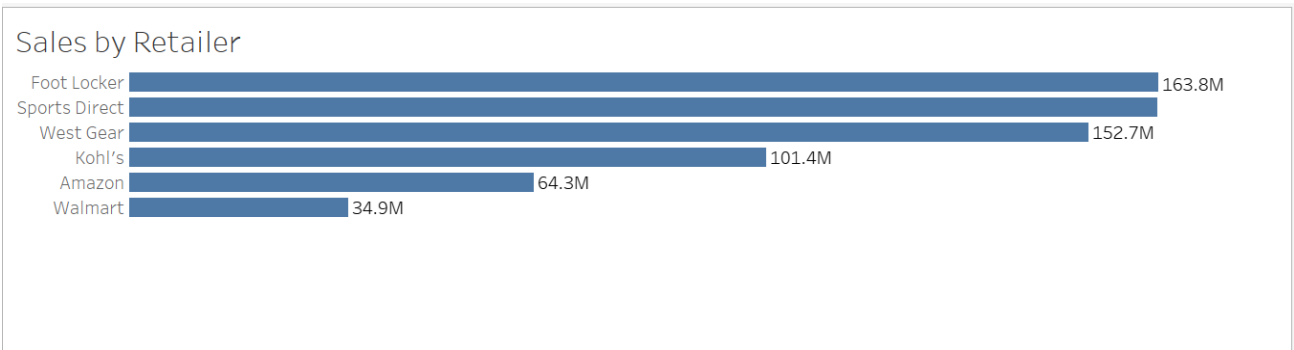zing sales by retailer, it enables the identification of top-performing retailers and potential partnerships for further business growth.

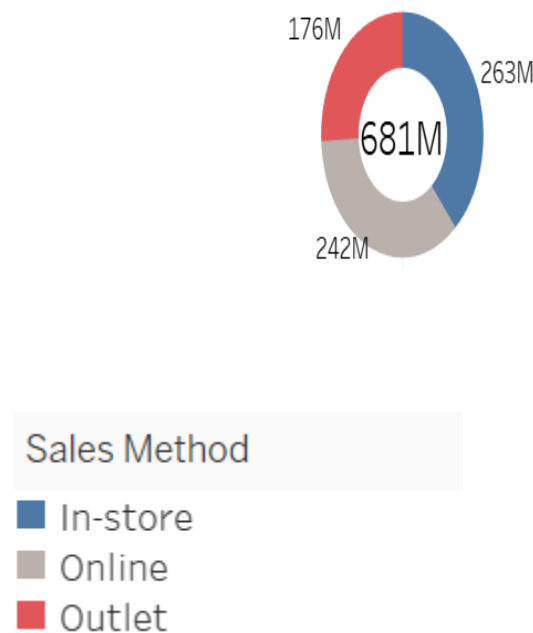**Sales by Methods (Donut Plot):**

Figure 7: Sales by Sales Methods

This donut plot illustrates the distribution of Adidas sales across different methods, such as online, in-store, and others, for the years 2020 and 2021. The segmented donut chart provides a clear visualization of the contribution of each sales method to overall sales revenue, aiding in strategic decision-making and resource allocation.

Designing the Dashboard:

Crafting the Adidas USA Sales dashboard involved meticulous attention to detail in merging individual charts into a unified interface. Utilizing the text option from objects, the dashboard title was set as "Adidas USA Sales," establishing a clear focal point. Dividers, rendered in black background, were employed to delineate sections, enhancing visual organization. Iterative adjustments led to the final layout, optimized for intuitive navigation and comprehension.

Adding Interactivity:

Interactive filters, including year (2020 & 2021), region, and product, were integrated to imbue the dashboard with dynamic functionality. These filters empower users to tailor their analytical

inquiries, fostering a personalized exploration of the data landscape. By enabling users to interactively manipulate data parameters, the dashboard facilitates deeper insights and informed decision-making.

Finalizing and Testing:

Rigorous testing protocols were enacted to ensure the dashboard's robustness and responsiveness. Through iterative testing and refinement, the dashboard emerged as a polished analytical tool, poised to deliver actionable insights to stakeholders across organizational tiers. Its user-centric design and interactive features underscore its utility as a valuable resource for data-driven decision-making.

Figure 8: First dashboard draft
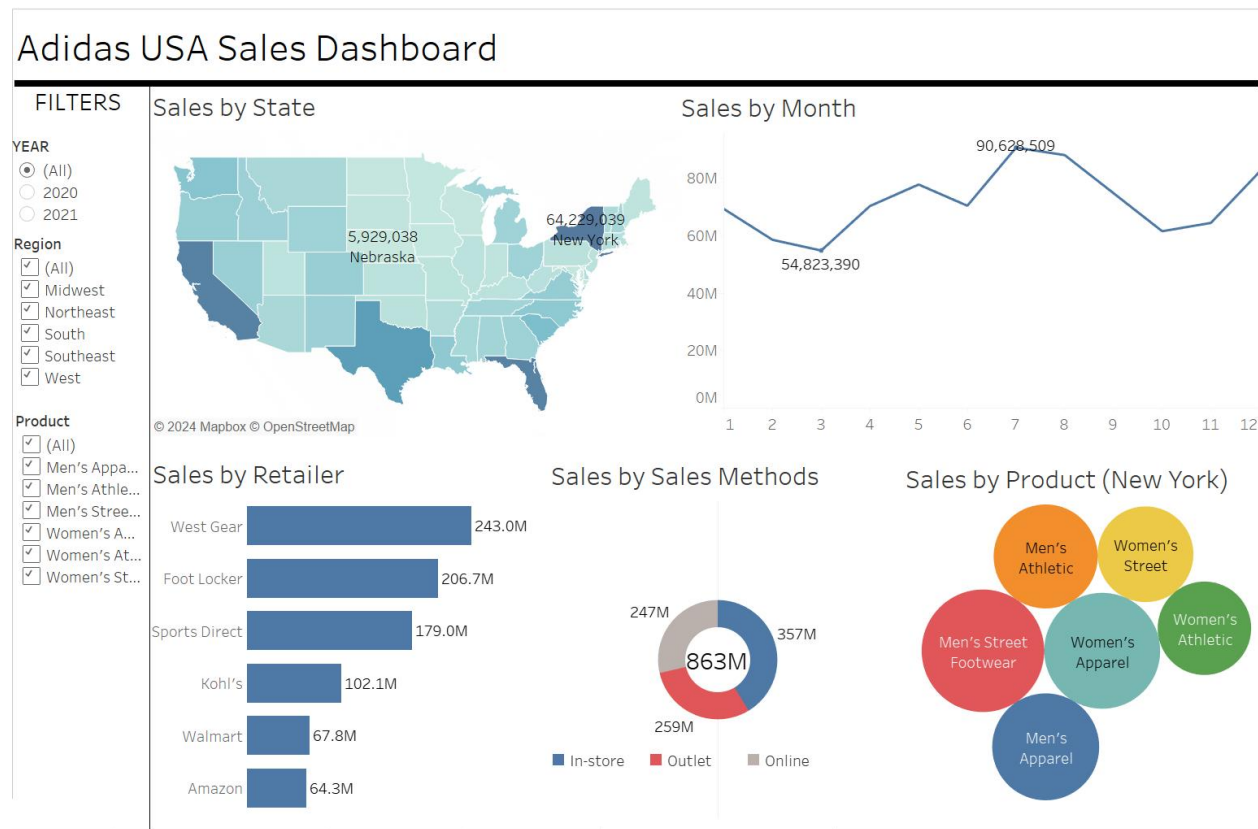
Figure 9: Final dashboard

NOTE:

We've added the interactive dashboard to demonstrate how we've tackled visual analytics tasks as a team. By showcasing how the dashboard can be customized and used to explore data, we're highlighting our ability to turn complex information into clear, useful insights. This interactive feature makes it easier for users to interact with the data and shows our dedication to creating tools that are user-friendly and informative.

Data Visualization

For our analysis, we will use Tableau software to create visualizations that answer our five questions and conduct in-depth research to gain a deeper understanding of the underlying reasons behind the results.

Q1: Are there noticeable differences in sales across various regions?

We created the Sales by State visualization based on the question. The screenshots show the sales by state in 2020 and 2021. Upon observation, it is evident that New York tops the list with $39,891,235 in sales, while Pennsylvania has the lowest sales at $948,474. In 2021, California had the highest sales at $51,464,743, while Nebraska had the lowest sales at $5,929,038. Although the New York sales in 2021 have declined, the state still has a good selling performance as indicated by the dark color in the sheet.

The states that have had the highest sales volume over 2020,2021 two years share some common characteristics. All these states have multiple large cities, a considerable population, high levels of urbanization throughout the state, and a high per capita income.

Nebraska, once part of the great American wilderness, is now dominated by agricultural development and has the lowest sales in 2021.

In addition, the image indicates that sales in 2021 sales grown rapidly compared to 2020, likely due to the stabilization of the epidemic and people's gradual return to normal life and consumption.
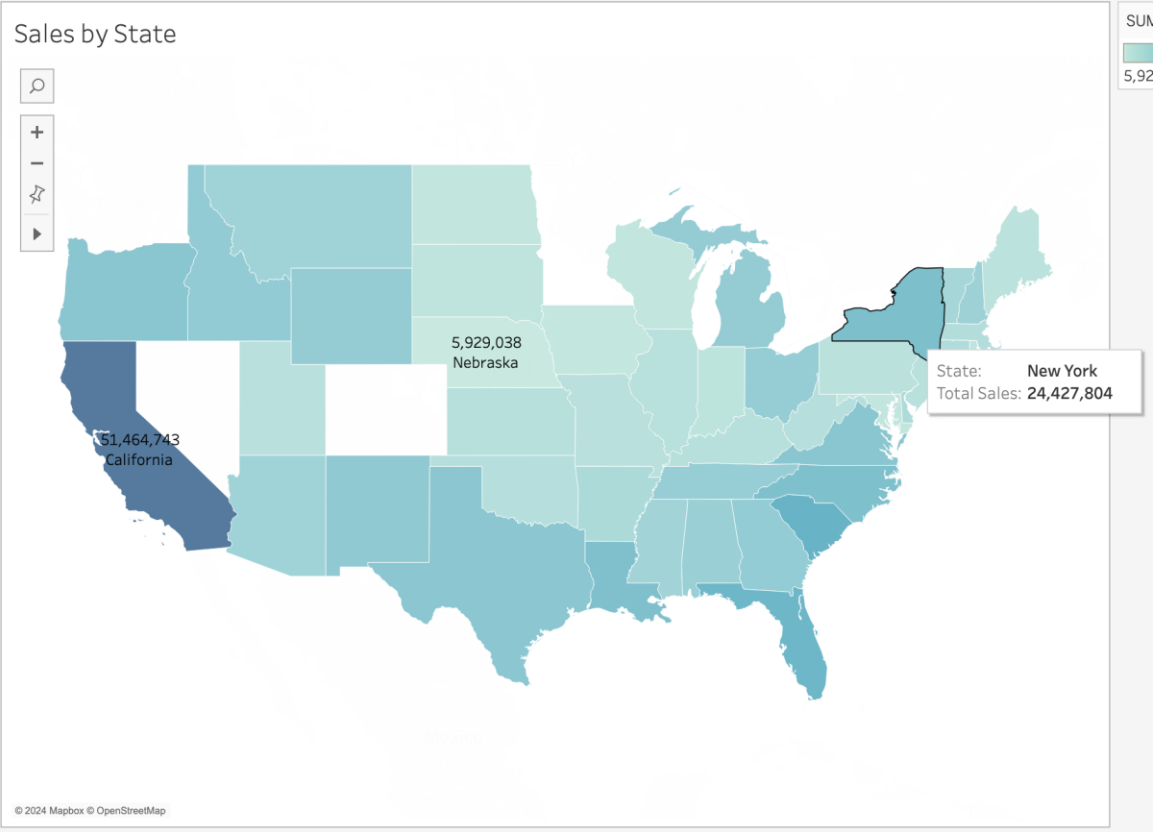
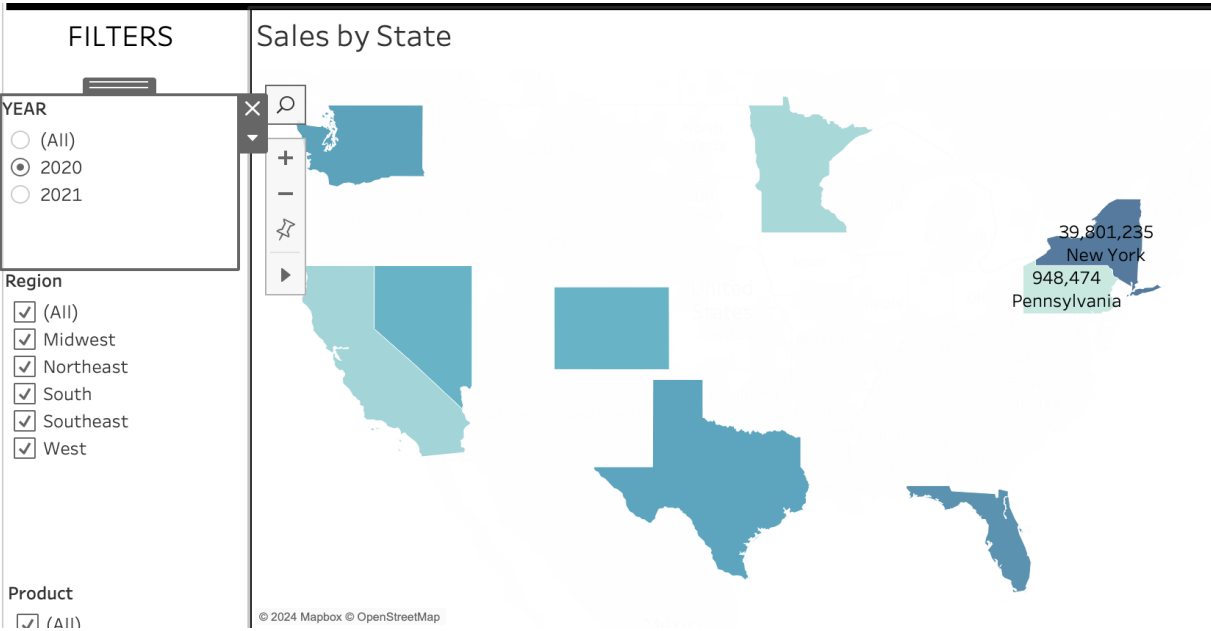Figure 10: Sales by State (New York)

Figure 11: Sales by State 2020

Q2: Do sales volumes vary significantly among different retailers?

We created a Sales by Retailer sheet and here are the Retailer sales rankings for 2020 and 2021.There are five retailers in the graph: Foot Locker, Sports Direct, West Gear, Kohl's, Amazon, and Walmart.

The figure shows that each retailer's sales will significantly rise in 2021 compared to 2020. Our previous analysis suggests that this increase may be due to the stabilization of the epidemic and people resuming their normal lives.

We couldn't find Amazon on the 2020 list, possibly due to the brand focus on selling through their portal website instead of the Amazon. It's crucial to consider the risk of data loss.
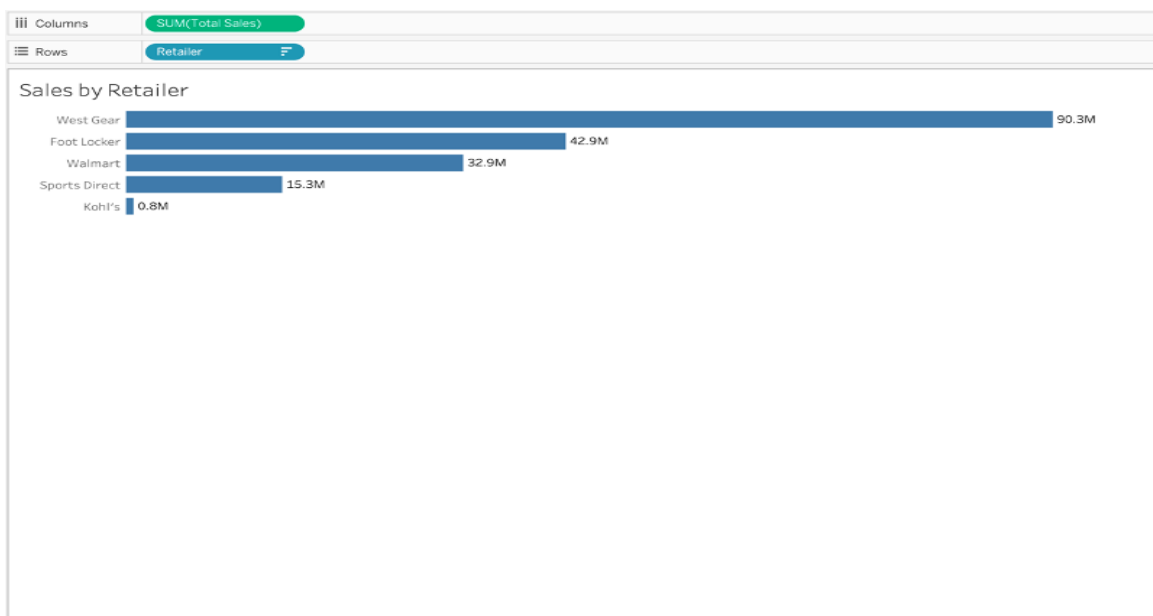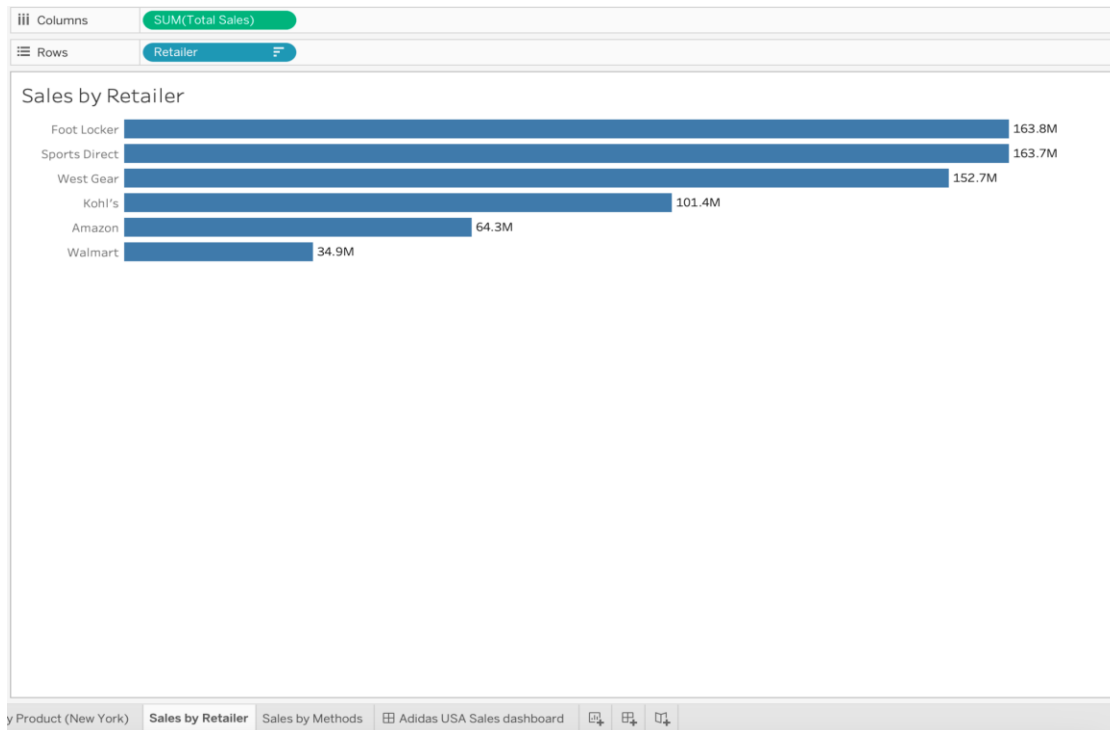

Figure 12: Sales by Retailer 2020

Figure 13: Sales by Retailer 2021

Q3: Provide the comparison of the most sales periods in 2020 and 2021? Based on this comparison, which month had the highest sales? Also, if we combine the sales from both years, which month had the highest sales?

In 2020, the COVID-19 pandemic caused widespread lockdowns, store closures, and disruptions in supply chains, leading to a decline in retail sales for many companies, including Adidas. The highest sales in 2020 occurred in April, after which COVID-19 significantly impacted Adidas' sales. From January to February, these months likely saw relatively normal sales patterns, as the COVID-19 outbreak had not yet reached pandemic levels in many parts of the world. However, Adidas faced continued challenges from April to May as lockdown measures remained in place in many regions. The holiday shopping season, which typically represents a crucial period for retail sales from September to December, was also affected as the pandemic likely dampened consumer enthusiasm and spending.
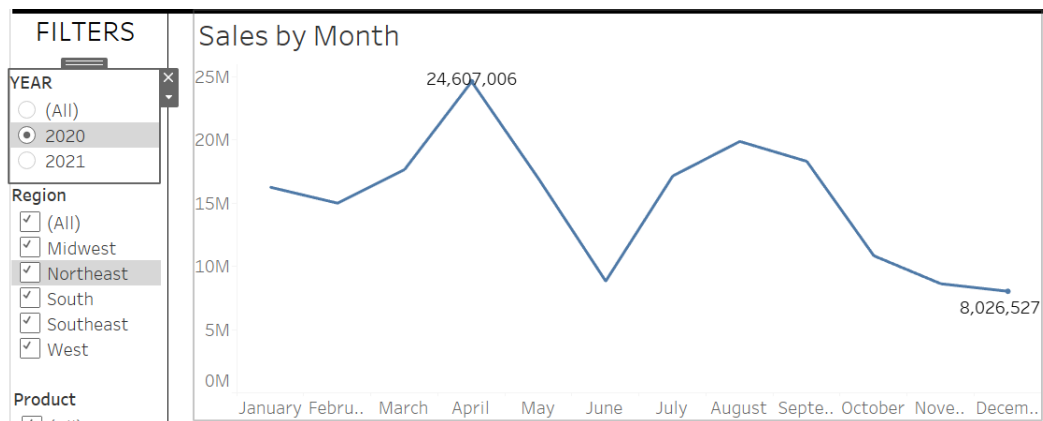
Figure 14: Sales by Month in 2020

In 2021, the sales trends followed the usual pattern, with the highest sales occurring in December and July. The initial months of the year, from January to March, were still challenging due to the ongoing impact of the COVID-19 pandemic. Many regions continued to be affected by lockdowns and restrictions on retail operations. From September to December, the holiday shopping season is a crucial time for retail sales, including sportswear brands like Adidas. Despite ongoing concerns about the pandemic, consumer confidence played a significant role in stabilizing the market. This led to increased spending on apparel and footwear as people sought gifts.
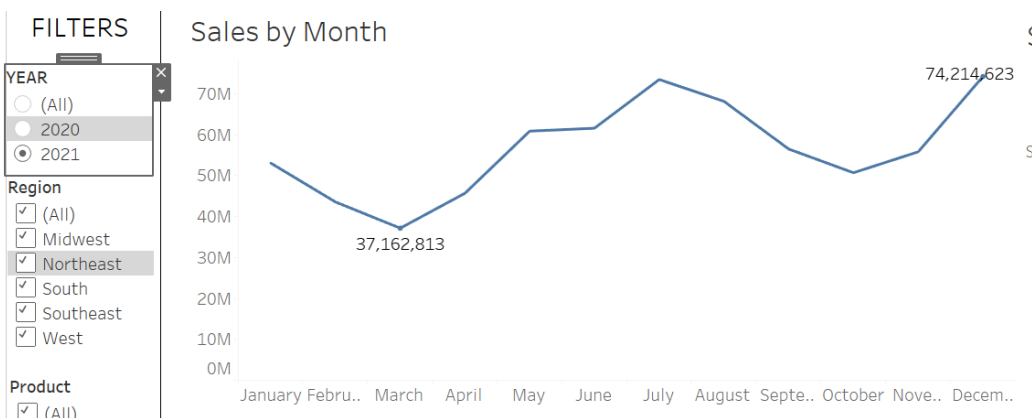

Figure 15: Sales by Month in 2021

In 2020, Adidas faced several challenges due to COVID-19, supply chain disruptions, and changes in consumer preference. With more people working remotely and staying at home, consumers favor casual and comfortable apparel. As a result, Adidas experienced an unusual sales trend in 2020. However, with the control of COVID-19 and the rise of e-commerce, sales returned to average trends in 2021. Although the unusual sales trend caused a decline in sales in 2020, when the sales data from 2020 and 2021 were combined and analyzed, the graph showed that Adidas sales still followed the usual trend.

Q4: What is the most preferred shopping method in the South between 2020 and 2021? Is there a correlation between retailer sales that we should be aware of?

In 2020, people in the South area preferred the shopping method of Outlet. The data shows that the top retailers in terms of sales were Walmart, Sport Direct, and West Gear. While e-commerce did contribute to the overall sales, it only accounted for 1 million out of the total sales in the South, signifying that the Outlet shopping method was the primary mode of shopping for most people in the region.
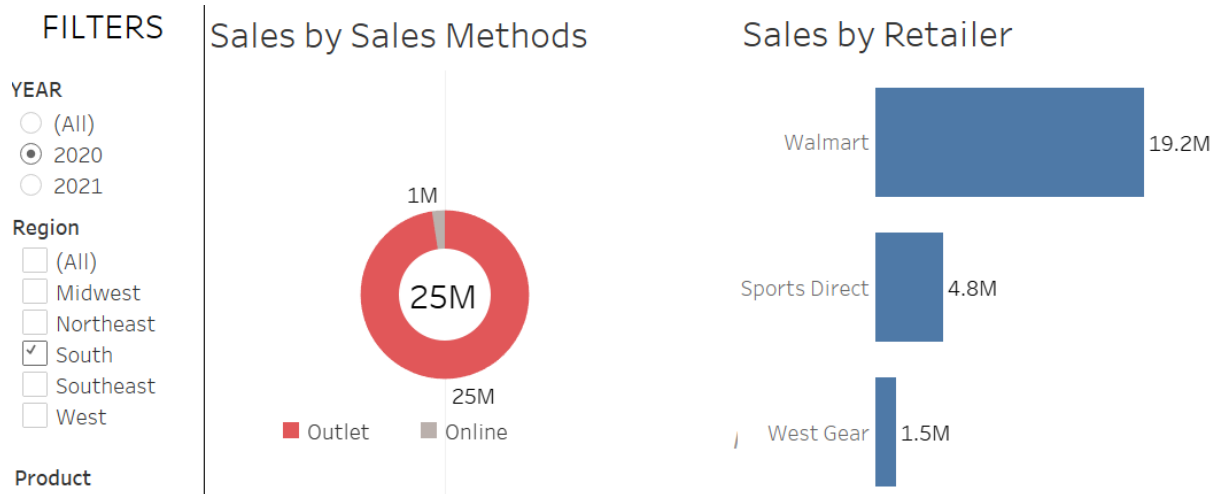

Figure 17: Sales Method and Retailer in 2020

In 2021, the COVID-19 pandemic has significantly impact consumer behavior and shopping habits, resulting in a surge in online shopping methods. Due to lockdowns, social distancing measures, and concerns about crowded spaces, many consumers have turned to online shopping to reduce their risk of exposure to the virus. Online platforms offer a more comprehensive range of Adidas products than traditional brick-and-mortar stores. Consequently, customers in the South have increasingly turned to online shopping platforms to purchase Adidas products, contributing to increased sales for retailers such as Amazon this year.
Compared to 2020, Amazon has made it to the top of the most sales list from the sales by retailer. Amazon's complete e-commerce platform allows customers to shop from marketplaces, increasing the availability of Adidas products and providing a convenient shopping experience for customers in the South.
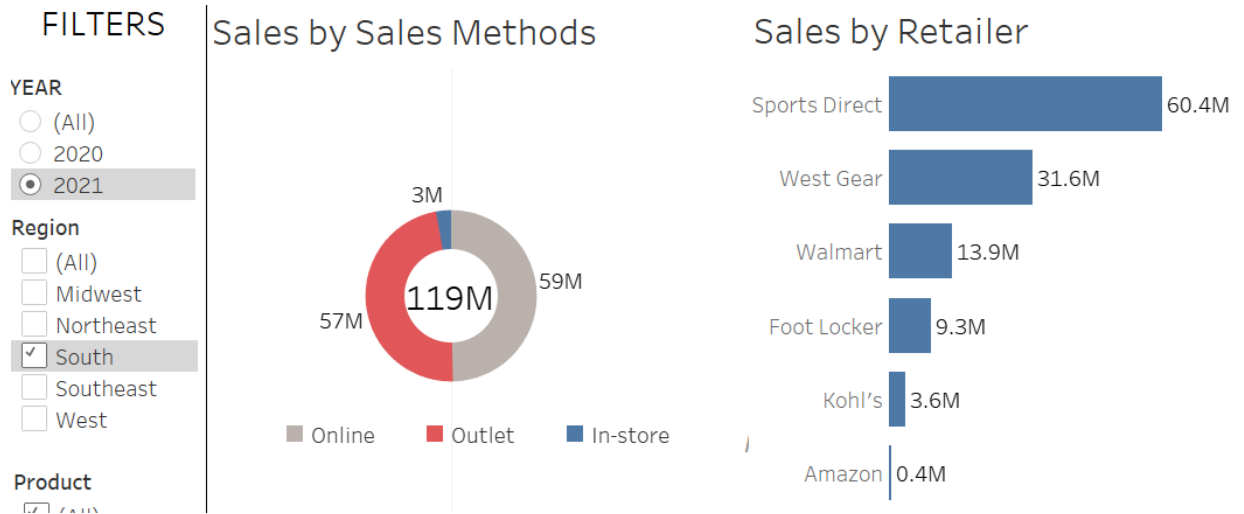
Figure 18: Sales Method and Retailer in 2021

Q5: Has the shopping method changed in the northern region from 2020 to 2021? Has the shopping method impacted product sales in the northern region?

Based on the 2020 sales data, the primary sales method in the Northeast area was through outlets, which accounted for $36 million out of the total $41 million in sales. In contrast, online sales only contributed $1 million, and in-store sales contributed $4 million. Notably, New York mainly contributed to the Northeast area's sales. Additionally, Northeastern customers made the most significant contribution to Adidas's outlet sales, with the primary product category being Men's street footwear.
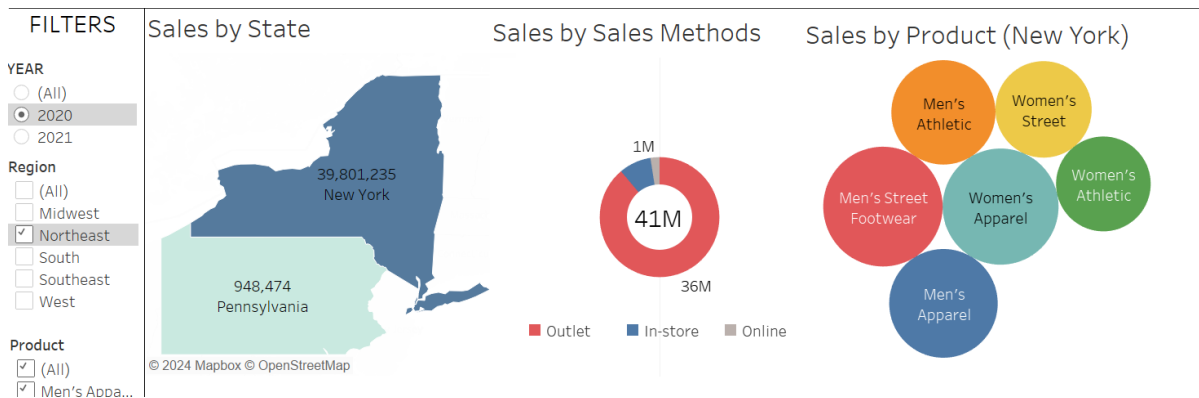

Figure 19: Sales Method and Product in 2020

According to the sales report, Adidas's primary sales channel in the Northeast region has shifted towards brick-and-mortar stores as compared to last year. On analyzing the sales data, it was observed that Men's street footwear is still the most popular product category in terms of sales and has continued to maintain its position from last year.
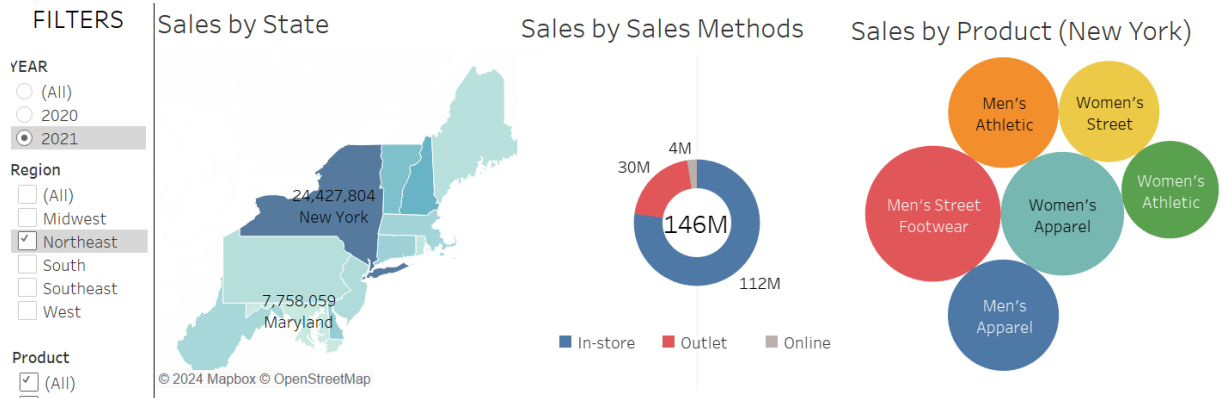

Figure 20: Sales Method and Product in 2021

Furthermore, one interesting fact that emerged from the report is that Maryland contributed twice as many sales as New York in the year 2021, replacing New York as the main contributor. Despite this shift, online sales still need to become more popular in the region than in other states.

Conclusion

The analysis of Adidas sales in 2020 and 2021 highlights the brand's ability to navigate challenging circumstances and take advantage of emerging opportunities. In 2020, the global pandemic disrupted retail operations worldwide, leading to decreased sales due to economic uncertainty and store closures. However, Adidas demonstrated resilience by shifting its focus to e-commerce channels, which experienced significant growth during the surge in online shopping.

In 2021, as vaccination efforts progressed and economies reopened, Adidas experienced a gradual recovery in sales, driven by improving consumer confidence and a return to pre-pandemic activities. E-commerce remained a key driver of growth, with Adidas continuing to invest in digital capabilities and online marketing initiatives to meet evolving consumer preferences. Product innovation, brand collaborations, and engaging marketing campaigns also contributed to sustained consumer interest and loyalty.

Despite regional variations in sales performance and ongoing challenges in the retail landscape, Adidas demonstrated resilience and adaptability throughout 2020 and 2021. By leveraging its brand equity, technological prowess, and commitment to sustainability, Adidas positioned itself for continued growth and success in the dynamic sportswear market. Looking ahead, the brand remains focused on delivering innovative products, enhancing customer experiences, and maintaining a strong global presence to drive future sales growth and profitability.

Reference

Heemalichaudhari. Adidas Sales Dataset [Data set]. Kaggle.
https://www.kaggle.com/datasets/heemalichaudhari/adidas-sales-dataset