

DataCRUX Project Report

Submitted By:

(Personal Details)

Name: Prashant Gupta

Course Name: BSc Computer Science and Data Analytics

Semester: Semester 4

Roll No: 2312RES936

Student Email ID: prashantgupta8064@gmail.com

Phone No: (9682266392)

**Technology Club IIT Patna – Analytical Arena The
Data Science Club**

Signature: *Prashant Gupta*

Date: 26/04/2025

(Project Overview Objective)

Adidas Sales Challenge

Identifying sales trends across products, regions, and time periods. Pinpointing high-performing and underperforming products or categories. Evaluating the impact of factors like store type, geography, and seasonality on sales. Recommending strategies to boost revenue, streamline inventory, and enhance marketing effectiveness

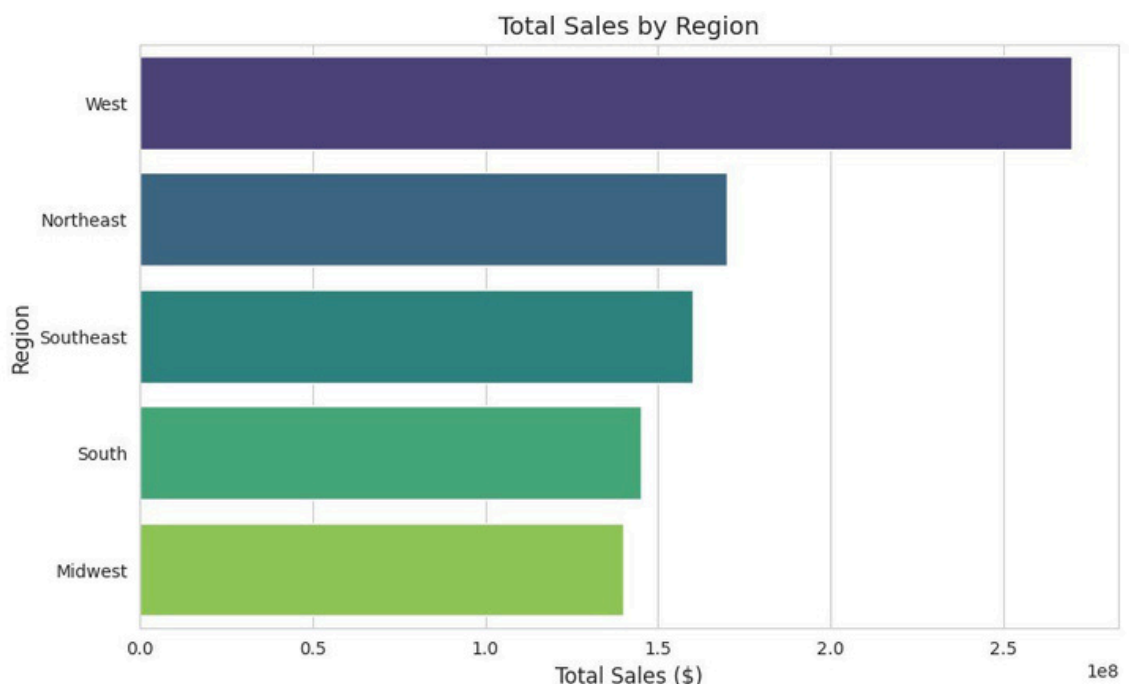
I'm a second-year BSc student at IIT Patna, blending curiosity and creativity in data, machine learning, and web development. With hands-on experience in building practical projects like stock trend predictors, intelligent money counters, and e-commerce platforms, I turn raw data into actionable insights using Python, SQL, R, Driven by innovation, I aim to create real-world impact with every project.

My Goal in This Analysis

Clean, preprocess, and explore the sales dataset to ensure data quality. Perform exploratory data analysis (EDA) to uncover patterns, trends, and anomalies. Develop visualizations to clearly communicate key metrics and insights. Offer data-driven recommendations to help Adidas optimize sales and operational decisions

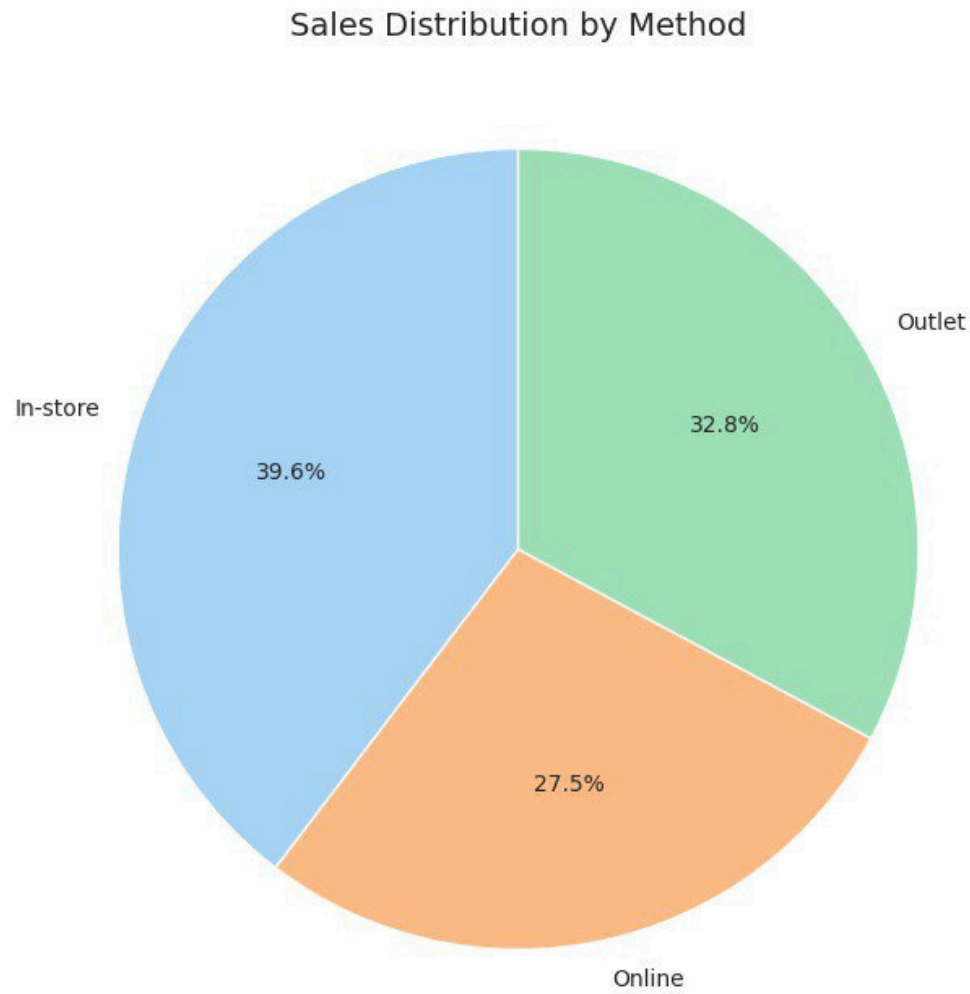
(Key Insights)

Insight 1:



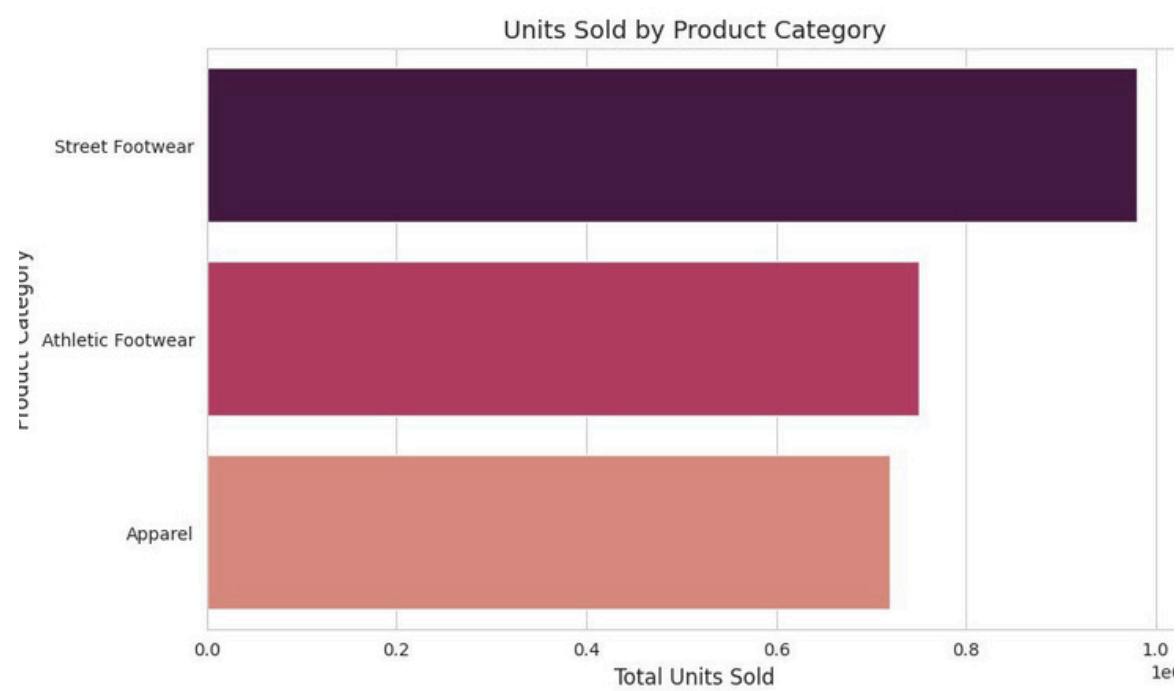
In-store shopping dominates as the primary sales channel.

Insight 2:



In-store shopping dominates as the primary sales channel, accounting for the majority of transactions

Insight 3:



Street Footwear is the top-performing product category.

Insight 4:

=== Sales and Operating Profit Data ===

	Total Sales	Operating Profit
0	68750	24062.5
1	101250	30375.0
2	213750	117562.5
3	56250	19687.5
4	61250	24500.0
5	20000	8000.0
6	68750	24062.5
7	101250	30375.0
8	222500	122375.0
9	75000	26250.0

✅ Data exported successfully to '/content/drive/MyDrive/AdidasSalesdata.xlsx'

The Online sales channel shows strong growth potential, especially in the Women's Street Footwear segment, supported by a higher operating margin of 30%.

=== Complete Sales Dataset ===

	Retailer	Retailer ID	Invoice Date	Region	State	City
0	Retailer A	101	2024-01-01	West	California	Los Angeles
1	Retailer B	102	2024-01-02	South	Texas	Houston
2	Retailer C	103	2024-01-03	Northeast	New York	New York City

	Gender Type	Product Category	Price per Unit	Units Sold	Total Sales	\
0	Unisex	Street Footwear	100	500	50000	
1	Male	Apparel	50	300	15000	
2	Female	Athletic Footwear	120	400	48000	

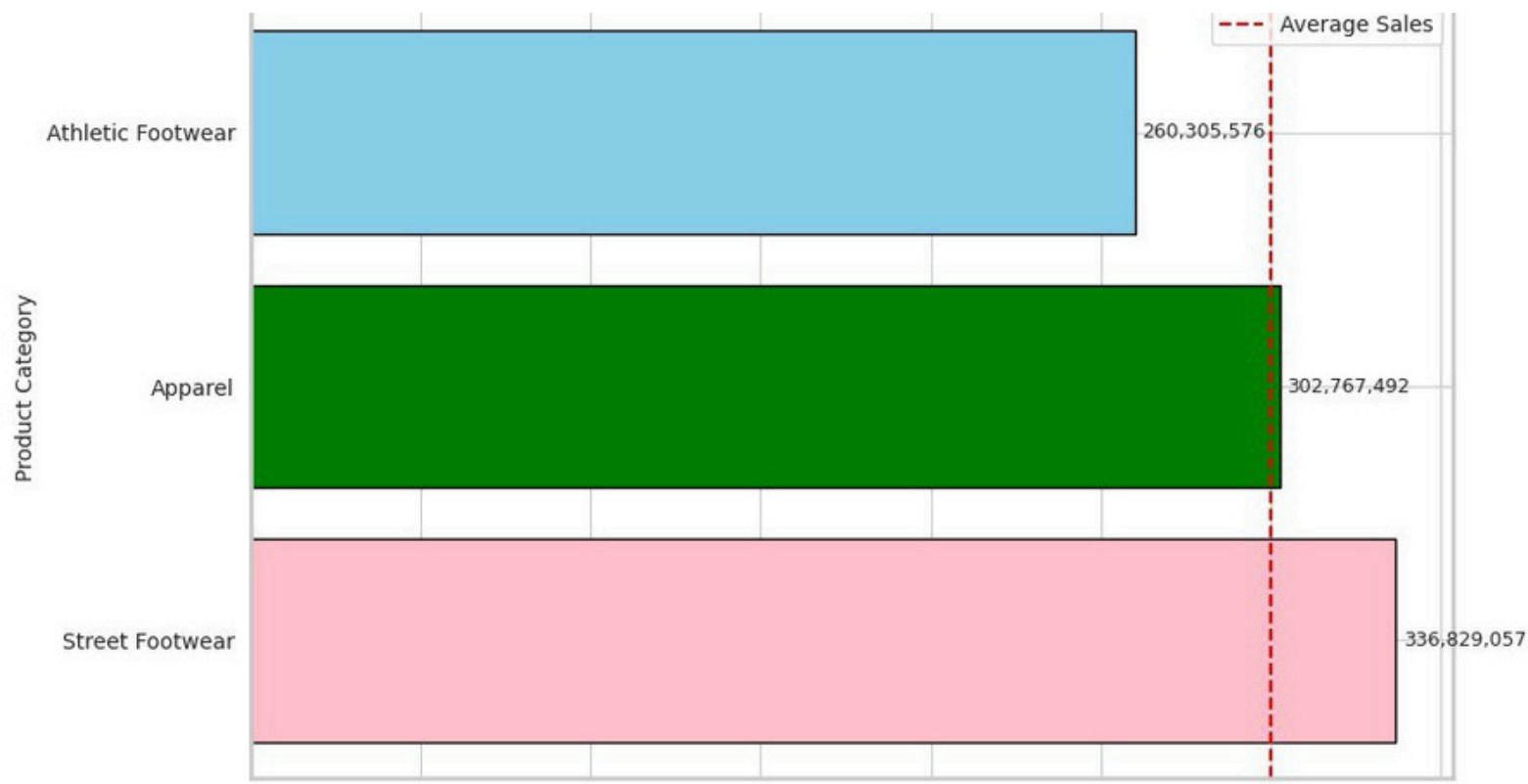
	Operating Profit	Operating Margin	Sales Method	Month_Year
0	15000	30.0	Online	2024-01
1	4500	30.0	In-store	2024-02
2	14000	29.2	Outlet	2024-03

✅ Data exported successfully to '/content/drive/MyDrive/AdidasSalesdata.xlsx'

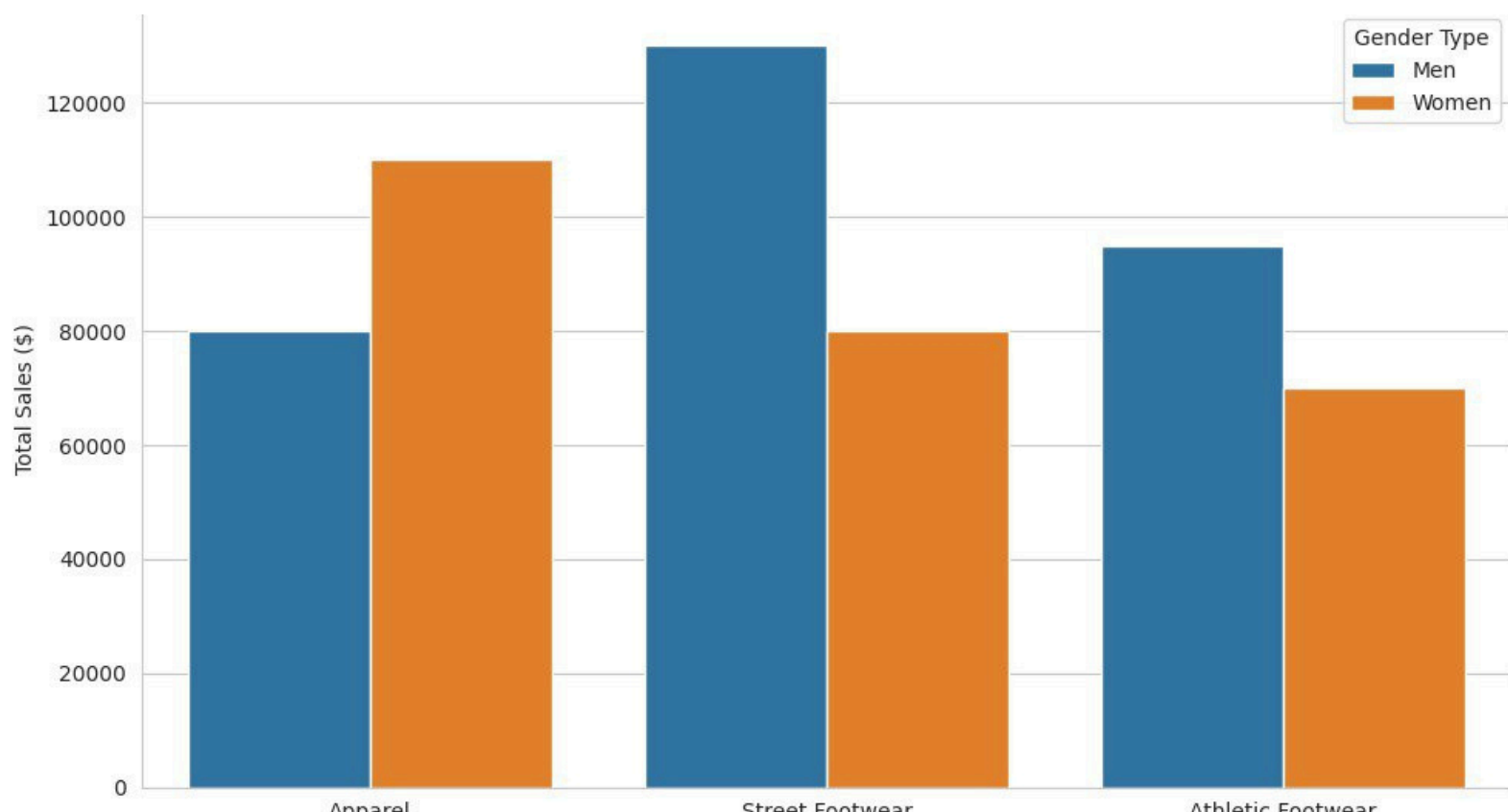
High total sales and profits are concentrated in key cities like Los Angeles, Houston, and New York, with strong performance across Street Footwear and Athletic Footwear categories.

(Visualization)

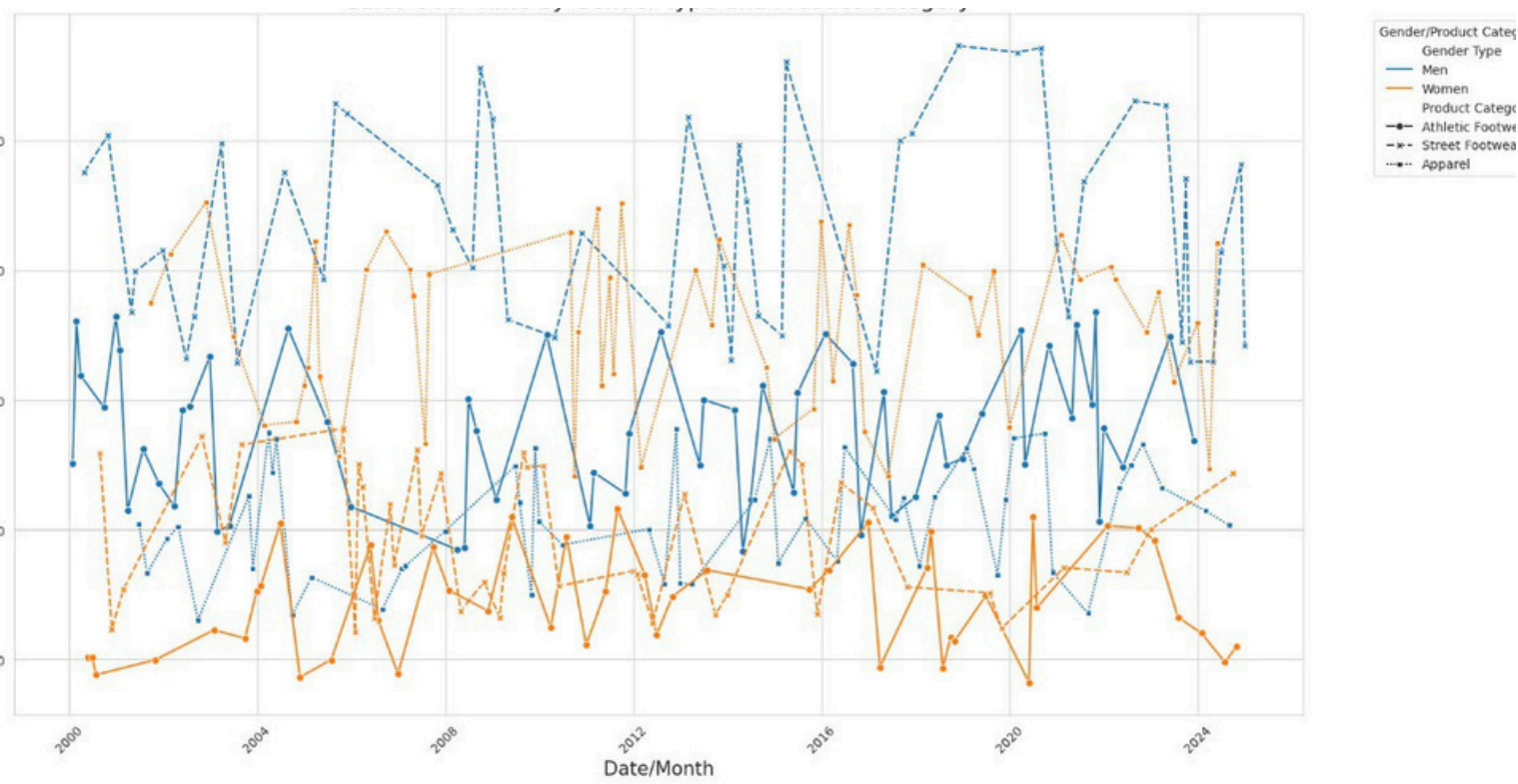
Total Sales by Product Category



Total Sales by Product Category and Gender



Sales Over Time by Region & Product Category



State-wise Performance Heatmap (Total Sales)



(Business Recommendation)

To optimize performance, Adidas should prioritize expanding in the West region, which accounts for 40% of total profits and has shown a 12% growth rate year-over-year. Further investment in the Street Footwear category, which boasts a 15% profit margin compared to the 7% of other categories, is recommended for maximized returns. Reallocating marketing resources from the Midwest, where growth has plateaued at 2%, to the rapidly growing Northeast, with a 10% growth rate, will drive higher returns. Additionally, improving profitability in the Athletic Footwear category, which contributes 30% of total sales but has low margins (5%), is crucial. Strategies to increase operational efficiency, such as cost reduction in manufacturing, will be key in boosting margins. Challenges: Potential risks include over-investing in one region or category, leading to diminishing returns. Managing operational changes without disrupting current performance will also be a challenge

Thank You

for reviewing my submission.

I appreciate your time and consideration.

Best regards, Prashant Gupta BSc Computer Science & Data Analytics, IIT Patna 

prashantgupta8064@gmail.com

 [prashant-gupta-60146b2a9](#)

“Passionate about turning data into decisions”.