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Adidas Sales Data Analysis

Project Overview:

The project focused on exploratory data analysis (EDA) of Adidas's sales dataset to extract actionable business insights. Leveraging descriptive analytics, we identified key sales trends, performance drivers, and strategic opportunities across various dimensions including geography, product category, and sales channels.

Key Findings

Top Retailer Contribution Analysis

- **West Gear** and **Foot Locker** emerged as dominant retailers, contributing **27%** and **24%** of total sales volume, respectively—together accounting for over **51%** of Adidas's revenue.

- Profitability metrics also confirmed these retailers as top contributors to **operating income**, highlighting their strategic importance.

Geospatial Sales Insights

- The **Western region** leads in sales distribution, contributing **30%** of total revenue, followed by the **Northeast** at **21%**.

- This spatial clustering suggests a higher product uptake in **urban and densely populated markets**.

Product Category Performance

- **Men's Street Footwear** is the highest-grossing category (**23%** of total sales), followed by **Women's Apparel** and **Men's Athletic Footwear**.

- These top three segments collectively represent **60%** of sales, indicating strong consumer preference and brand alignment in these categories.

Seasonality Analysis

- Sales volume peaks in **Summer (29%)** and **Winter (24%)**, aligning with seasonal events such as **holidays**, **recreational activities**, and **back-to-school** cycles.

- This pattern reveals opportunities for **time-based marketing and inventory planning**.

Sales Channel Performance

- **Online sales** lead with **37%**, followed by **Outlet (33%)** and **In-Store (30%)** transactions.

- This channel distribution underscores the growing impact of **digital commerce** and supports a shift toward enhanced **e-commerce strategies**.

Temporal Sales Trends

- Year-over-year (YoY) analysis shows a significant **sales uplift in 2021 vs. 2020**, likely reflecting **post-pandemic recovery** and **increased discretionary spending**.

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Data Cleaning & Feature Engineering

To improve data quality and model reliability:

- **Imputed missing values** in critical fields such as Price and Units Sold.

- **Engineered features** such as Season, Profit Margin, and Sales Channel Group.

- **Normalized product naming conventions** to reduce redundancy and improve aggregation accuracy.

Recommendations:

Channel Optimization

- Invest further in **online sales infrastructure**, including digital marketing and platform scalability.

Seasonal Demand Alignment

- Implement **campaign scheduling** and **inventory allocation** based on seasonal spikes (Summer/Winter).

- Align **product rollouts** with consumer demand cycles to optimize revenue.

Regional Growth Strategy

- Enhance logistics, distribution, and promotional efforts in high-performing zones (**West and Northeast**).

- Conduct **cluster analysis** to identify underperforming markets (e.g., **Midwest**) for targeted expansion.

Product Portfolio Refinement

- Maintain focus on top-selling categories like **Men's Street Footwear** while using **predictive analytics** and **sentiment analysis** to guide innovation in slower-moving segments.

- Incorporate **customer behavior analytics** to anticipate emerging product trends.

Expand High-Performing Channels

• Double down on online sales by enhancing digital marketing and e-commerce capabilities.

• Consider investing in user-friendly platforms and personalized shopping experiences.

Capitalize on Seasonal Trends

• Launch targeted promotions during Summer and Winter to maximize revenue during peak seasons.

• Align product launches and marketing campaigns with seasonal demand. Focus on Regional Growth • Strengthen supply chains and marketing efforts in the West and Northeast to sustain growth. • Explore untapped potential in lower-performing regions like the Midwest through localized strategies. Refine Product Strategy • Prioritize high-performing categories like Men's Street Footwear while innovating in slower moving segments. • Use customer feedback and market research to identify emerging trends and preferences.