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Nike 2024 Global Market Data Analysis

Understanding Nike's global sales landscape is critical to making smart business moves. This project dives deep into 2024 sales data, using interactive visualizations to uncover trends, patterns, and insights that aid decision making.

**Data Management**

The data source: <https://raw.githubusercontent.com/BeckyGuo00/Nike_2024/refs/heads/main/nike_sales_2024.csv>

The dataset contains monthly revenue figures categorized by Month, Region, Main\_Category, Sub\_Category, Product\_Line, Price\_Tier, Units\_Sold, Revenue\_USD, Online\_Sales\_Percentage, Retail\_Price. Before jumping into analysis, the data needed some work to ensure accuracy and usability. The "Month" column was reformatted into a proper datetime format so that time-series analysis would be smooth and reliable. Any missing values in key fields like revenue were either replaced with zero or removed entirely if they were unreliable.

For further prepare data, and check the reliability, several boxplots analysis was conducted to ensure there is no extreme outliers were present that could distort the results. Additionally, a heatmap was generated to provide a quick visual snapshot of how different variables interact, helping pinpoint which ones were most relevant for further exploration. These steps helped clean up the data and set the stage for meaningful visualizations, making sure everything was structured and ready to go before diving into analysis.

**Methodology explanation**

A variety of visualizations were used to make the data easy to explore and understand. Bar charts were the go-to for comparing revenue across different product categories and price tiers, making it clear which segments were performing best. A line chart was used to map out trends over time, allowing for an easy month-by-month breakdown of sales fluctuations. A treemap provided a more detailed look at sales hierarchies, helping users drill down into regional and product-level performance. Each visualization was carefully selected to highlight key insights and make patterns in the data easy to interpret.

Filters were built into the Streamlit app so users could select specific regions and months to explore. Standardizing revenue figures in USD kept the numbers consistent across different markets, ensuring an accurate comparison of trends. All these steps made it easier to uncover meaningful patterns in Nike’s sales data and present them in a way that’s engaging and easy to digest.

**What Could Be Better and What’s Next**

While the project provides a solid look into Nike’s 2024 sales data, there are couple of ways to take it further. One big limitation is that the dataset only covers a single year. Without data from previous years, it’s hard to spot long-term trends or seasonal patterns. Adding historical data would provide much deeper insights into growth, shifts in consumer behavior, and market dynamics over time. Another missing piece is more detailed geographic information—right now, sales are broken down by region, if get more specific data like deeper to the city would give a much clearer picture of how different markets are performing.

Another important factor that could enhance this analysis is customer behavior data. If we had insights into how many people purchased specific product categories, we could get a better sense of pricing strategies in different countries. This would allow for a more detailed market share analysis and help businesses fine-tune their pricing models to match local demand. It would also open the door to studying purchasing trends across various demographics, adding another layer to the analysis. Going forward, the project could add more interactive features, such as drill-down options that allow users to zoom in on specific product categories or price points, making the dashboard even more insightful and user-friendly.

By addressing these areas, the project could grow into a powerful tool for understanding Nike’s global market performance. With more data and more granular analysis, the business can make better decisions, optimize pricing strategies, and stay ahead of the ever-changing retail landscape.