Investigating the Revenue of Online Sports

Overview

The sports clothing and athleisure industry is enormous, valued at roughly $193 billion in 2021 in 2021 and projected to grow significantly over the next decade.

PROBLEM STATEMENT

The goal is to analyze a dataset of sports apparel products to understand the relationship between product attributes like price, description length, and brand with sales performance and customer sentiment.

GOALS

01.

Compare Brand Performance:

Analyze the sales performance of Adidas and Nike products across different price segments.

02.

Understand the Impact of Product Descriptions

Investigate the relationship between product description length and customer ratings.

DATASET

01.

brands.csv

Contains product IDs and their corresponding brands.

02.

finance.csv

Contains financial information about each product, including listing price, sale price, discount, and revenue.

03.

info.csv

Contains product names and descriptions.

04.

reviews.csv

Contains product ratings and review counts.

OUTPUTS

The analysis will explore product data, including pricing, reviews, descriptions, and ratings, alongside revenue and website traffic data, to generate strategic recommendations for the marketing and sales teams.

01.

Calculate the volume of products and average revenue for Adidas and Nike products, based on quartiles of their listing prices. Classify products as **"Budget"** for prices in quartile one, **"Average"** for quartile two, **"Expensive"** for quartile three, and **"Elite"** for quartile four. Save these results in a **pandas** DataFrame named **adidas_vs_nike** with columns: **"brand"**, **"price_label"**, **"num_products"**, and **"mean_revenue"**.

02.

Investigate whether there's a relationship between product description word count and average rating. To do this, divide product descriptions into bins of 100 characters, then calculate the average rating and number of reviews for each bin. Store this data in a pandas DataFrame called **description_lengths**, including the columns: **"description_length"**, **"mean_rating"**, and **"num_reviews"**.

DATA FINDINGS

Adidas vs. Nike: A Comparative Analysis

The provided table compares the performance of Adidas and Nike products across different price segments:

- **Budget:** Products priced in the lowest quartile.
- **Average:** Products priced in the second quartile.
- **Expensive:** Products priced in the third quartile.
- **Elite:** Products priced in the highest quartile.

Key Insights:

- **Adidas Dominance:** Adidas has a higher number of products and generates more revenue across all price segments compared to Nike.
- **Price Segment Performance:** Both brands tend to have higher average revenue for products in the "Elite" price segment. This suggests that premium products contribute significantly to overall revenue.
- **Product Volume:** Adidas has a larger product volume, particularly in the "Budget" and "Average" segments, indicating a wider product range.

	brand	price_label	num_products	mean_revenue
0	Adidas	Budget	574	2015.68
1	Adidas	Average	655	3035.30
2	Adidas	Expensive	759	4621.56
3	Adidas	Elite	587	8302.78
4	Nike	Budget	357	1596.33
5	Nike	Average	8	675.59
6	Nike	Expensive	47	500.56
7	Nike	Elite	130	1367.45

	description_length	mean_rating	num_reviews
0	100	2.26	7
1	200	3.19	526
2	300	3.28	1785
3	400	3.29	651
4	500	3.35	118
5	600	3.12	15
6	700	3.65	15

Overall, the analysis reveals that:

Adidas has a stronger market presence and generates higher revenue compared to Nike.

Product description length is positively correlated with **average ratings**, suggesting that detailed and informative descriptions can improve customer satisfaction and drive sales.

INSIGHTS

Brand Comparison:

- **Adidas vs. Nike:** The analysis compares the number of products and average revenue for Adidas and Nike products across different price segments (Budget, Average, Expensive, Elite).

- **Price Segment Performance:** The comparison helps identify which price segments are more profitable for each brand.

- **Product Volume:** The number of products in each price segment can indicate the brand's product strategy.

Product Description and Ratings:

- **Description Length and Ratings:** The analysis explores the relationship between product description length and average ratings.

- **Longer Descriptions:** Longer descriptions might lead to higher ratings, potentially due to better product explanations and customer engagement.

- **Review Volume:** The number of reviews can also influence a product's perceived quality.