Business Report: Analysis of Product Price and Customer Ratings

Objective:

The purpose of this report is to analyze the price distribution and customer ratings of the products listed on Amazon UK, providing insights into their pricing strategy and customer satisfaction.

1. Product Price Analysis

Key Findings:

- **Mean:** 89.24
- **Median:** 19.09
- **Mode:** 9.99
- **Variance:** 119,445.49
- **Standard Deviation:** 345.61
- **Range:** 100,000.00
- **Interquartile Range (IQR):** 36.00

Interpretation:

- The mean price (89.24) is notably higher than the most common price point (mode) of 9.99, indicating a skew towards higher-priced products in the dataset.
- The median price (19.09) is significantly lower than the mean, showing a heavy right skew in the distribution of product prices, with a few high-priced items pulling the mean upwards.
- A high standard deviation (345.61) and variance (119,445.49) suggest significant variability in the prices of products.
- The range of 100,000.00 further emphasizes the extreme price disparities within the dataset.
- The IQR of 36.00 indicates a relatively large spread of prices in the middle 50% of products.

Histogram of Price
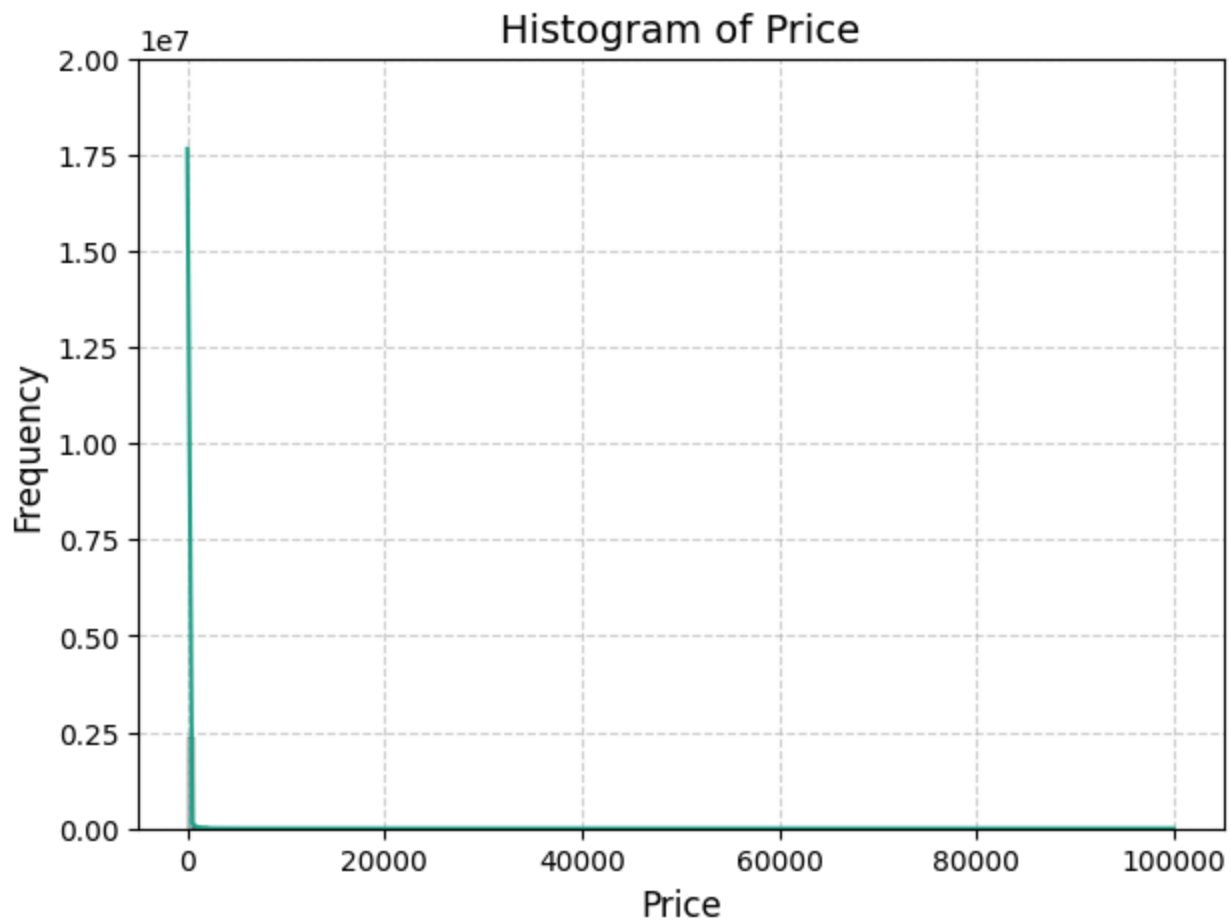
2. Customer Ratings Analysis

Key Findings:

- **Mean:** 2.15
- **Median:** 0.0
- **Mode:** 0.0
- **Variance:** 4.82
- **Standard Deviation:** 2.19
- **Range:** 5.00
- **Interquartile Range (IQR):** 4.40
- **Skewness:** 0.08
- **Kurtosis:** -1.93

Interpretation:

- The mean rating of 2.15 is skewed upwards due to a few very high ratings, while the mode and median of 0.0 indicate that most customers rate the products at or near the lowest possible score.

- Variance (4.82) and standard deviation (2.19) indicate moderate variability in customer ratings.
- The range of 5.00 shows that ratings span the full spectrum, from 0.0 to 5.0.
- Skewness of 0.08 suggests a relatively symmetrical distribution, with a slight positive skew.
- The negative kurtosis (-1.93) indicates a distribution with fewer extreme ratings (both low and high) than a normal distribution.

Interpretation of Rating Distribution:

- The distribution of ratings suggests that while many customers give low ratings, there are occasional outliers with very high ratings, pulling the mean upward. This could point to a few "outlier" products that have been rated highly despite general dissatisfaction.

Histogram of Stars
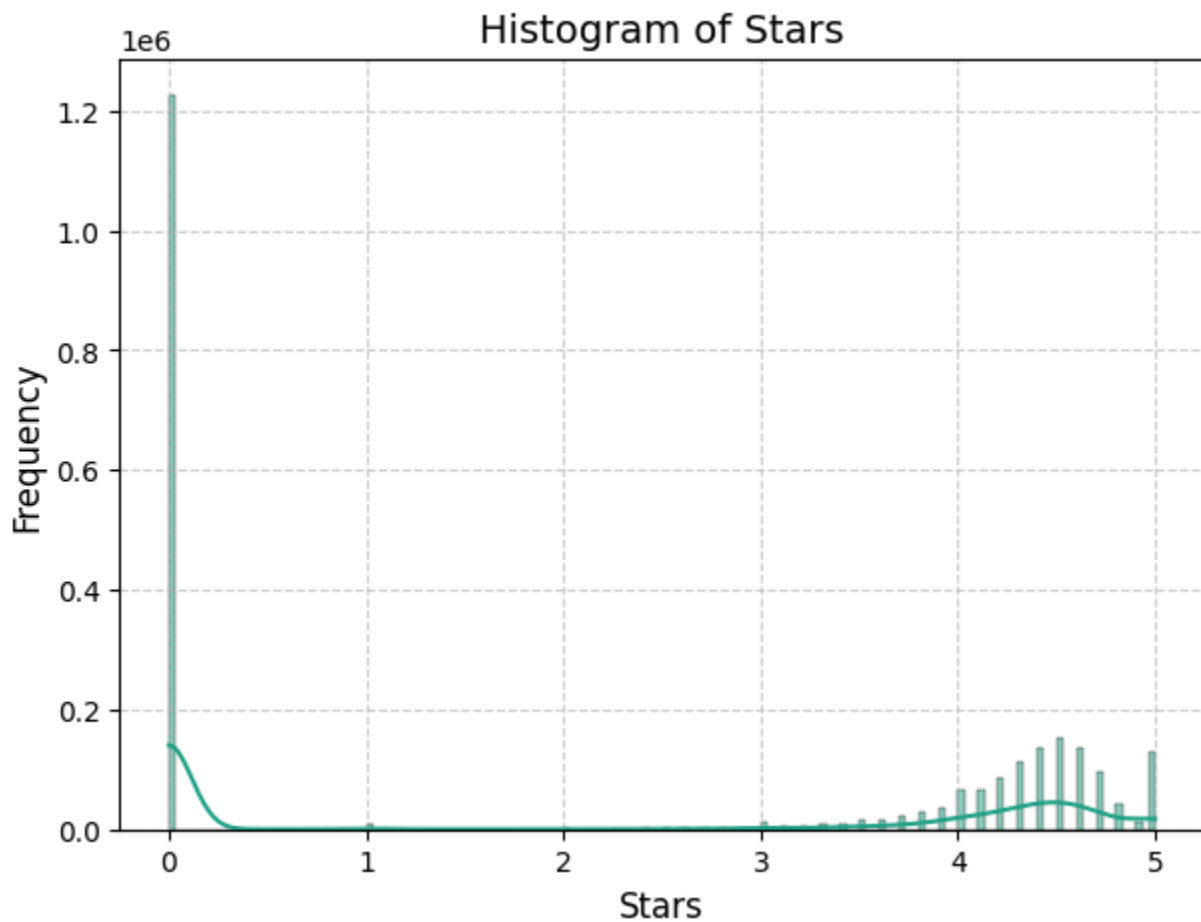
3. Conclusion

- Based on the findings, the pricing strategy reflects a broad range of price points with a notable skew towards higher prices.
- Regarding customer ratings, while many products receive low ratings, some outliers with higher ratings are skewing the overall mean. This indicates a disparity in product satisfaction, where a subset of products performs well, but there is a general trend toward customer dissatisfaction.