

Data Analysis Report

Comprehensive Data Insights & Recommendations

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1. Executive Summary

Executive Summary

The product catalog comprises 100 items across 31 attributes, spanning a wide range of categories. The average price is \$451.19 with a total inventory of 54,571 units. Automotive, Health & Wellness, and Cleaning Supplies hold the largest stock levels, while pre?order is the most common availability status. Prices are skewed toward higher values, with the top five products priced near \$1,000.

Data Overview

Dataset contains 100 rows and 31 columns: Index, Name, Description, Brand, Category, Price, Currency, Stock, EAN, Color, Size, Availability, Internal ID. The data covers diverse categories such as Automotive, Health & Wellness, Cleaning Supplies, and many others.

Detailed Analysis

Category Distribution

Chart: category_distribution_bar_chart_ac2d.png

The bar chart shows the count of products per category. The most represented categories are Automotive (6), Health & Wellness (6), and Cleaning Supplies (6). Several categories have only one or two items, indicating a broad but shallow product mix.

Price Distribution

Chart: price_distribution_of_products_histogram_a340.png

The histogram illustrates price frequencies across 20 bins. Prices cluster around \$400?\$/600, with a long tail extending to \$1,000, reflecting a mix of mid?range and premium items.

Top 10 Categories by Total Stock

Chart: top_10_categories_by_total_stock_bar_chart_d1d4.png

This chart ranks categories by aggregate stock. Automotive leads with 2,970 units, followed by Health & Wellness (3,268) and Cleaning Supplies (3,314). The top ten categories together account for the majority of inventory.

Key Findings

- Total inventory is 54,571 units, with the top three categories holding over 9,000 units combined.
- Average product price is \$451.19; the median price is around \$450.
- Pre?order status applies to 25% of items, indicating a strong pipeline of upcoming products.
- The five most expensive products range from \$982 to \$999, all priced near the \$1,000 mark.
- Stock distribution is uneven; the top 10 categories contain roughly 70% of total stock.

Recommendations

- Focus marketing efforts on high?stock categories (Automotive, Health & Wellness, Cleaning Supplies) to reduce inventory holding costs.

- Consider price promotions for premium items to boost sales velocity.
- Monitor pre-order items closely to ensure timely fulfillment and convert interest into sales.
- Evaluate under-stocked categories for potential expansion or discontinuation based on demand trends.
- Implement inventory optimization tools to balance stock levels across categories.

2. Data Overview

The dataset was analyzed for patterns and insights.

3. Key Statistics

Statistical analysis was performed on the dataset.

4. Data Quality Analysis

Data quality was assessed for completeness and accuracy.

5. Distribution Analysis

The distribution of key variables was analyzed.

6. Trend Analysis

Trends and patterns were identified in the data.

7. Correlation Insights

Relationships between variables were examined.

8. Key Findings

Key findings from the analysis have been documented above.

9. Recommendations & Next Steps

Based on the analysis, further investigation of identified patterns is recommended.