

Medical Data Analysis Report

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Analyzed File: indian_medicine_data.csv

Executive Summary

This medical dataset provides extensive information on healthcare products, with 253,973 records across nine features. The dataset includes both numeric and categorical features and provides detailed insights into the type of medical products available, their average price and pack size, manufacturers, and discontinuation status. However, there are a significant number of missing values in the 'short_composition2' column, indicating incomplete information on product compositions.

Dataset Overview

Total Records	253973
Total Features	9
Numeric Features	2
Categorical Features	6
Missing Values	141802

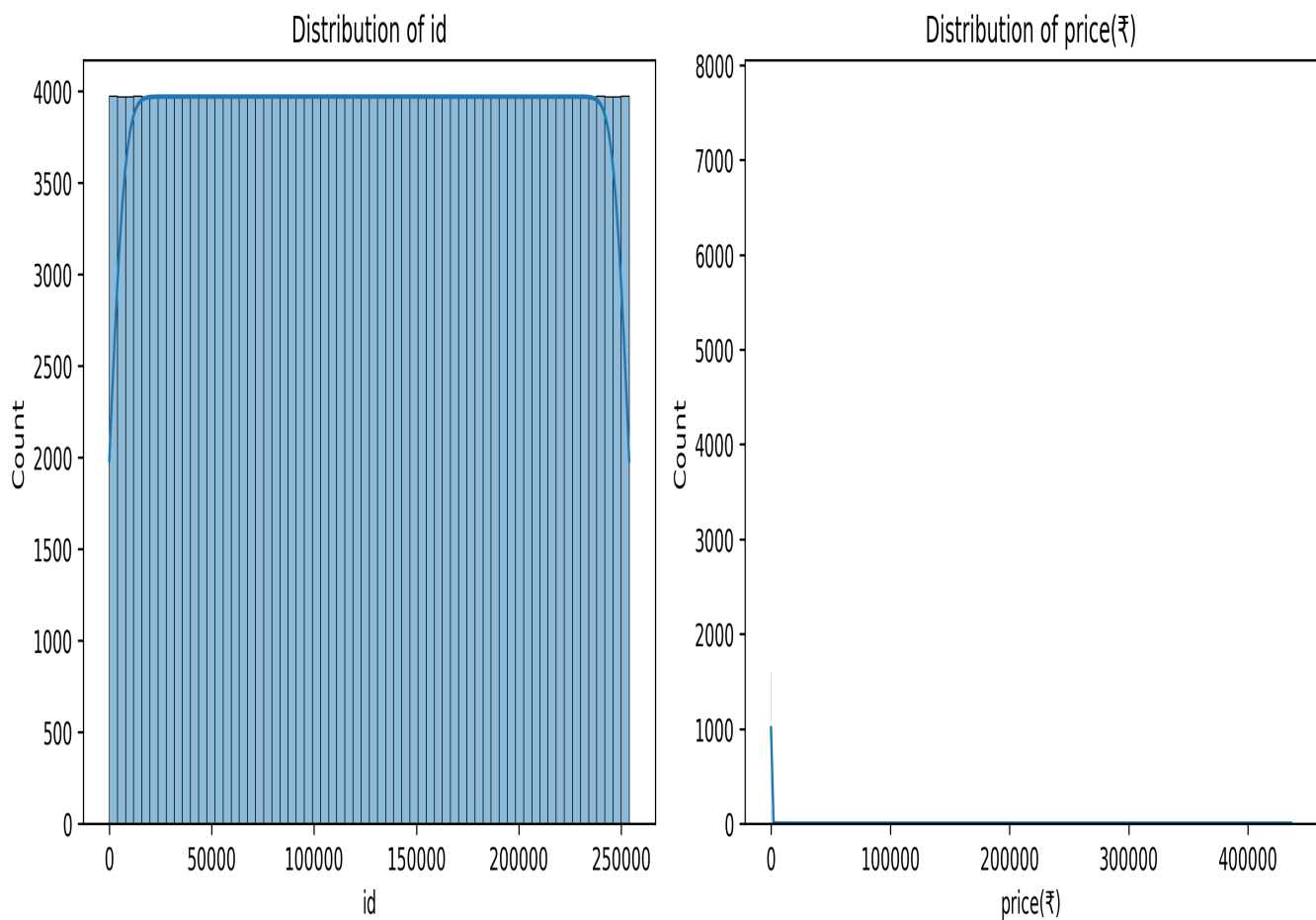
Key Insights

- The average price of medical products is ₹270.53 with a high standard deviation of ₹3029.58, indicating a wide range of prices across different products.
- The most common product type is 'Tablet', followed by 'Capsule' and 'Injection'.
- The majority of products (60%) are manufactured by companies with names starting with 'A' to 'M', suggesting a dominance of specific manufacturers in the market.

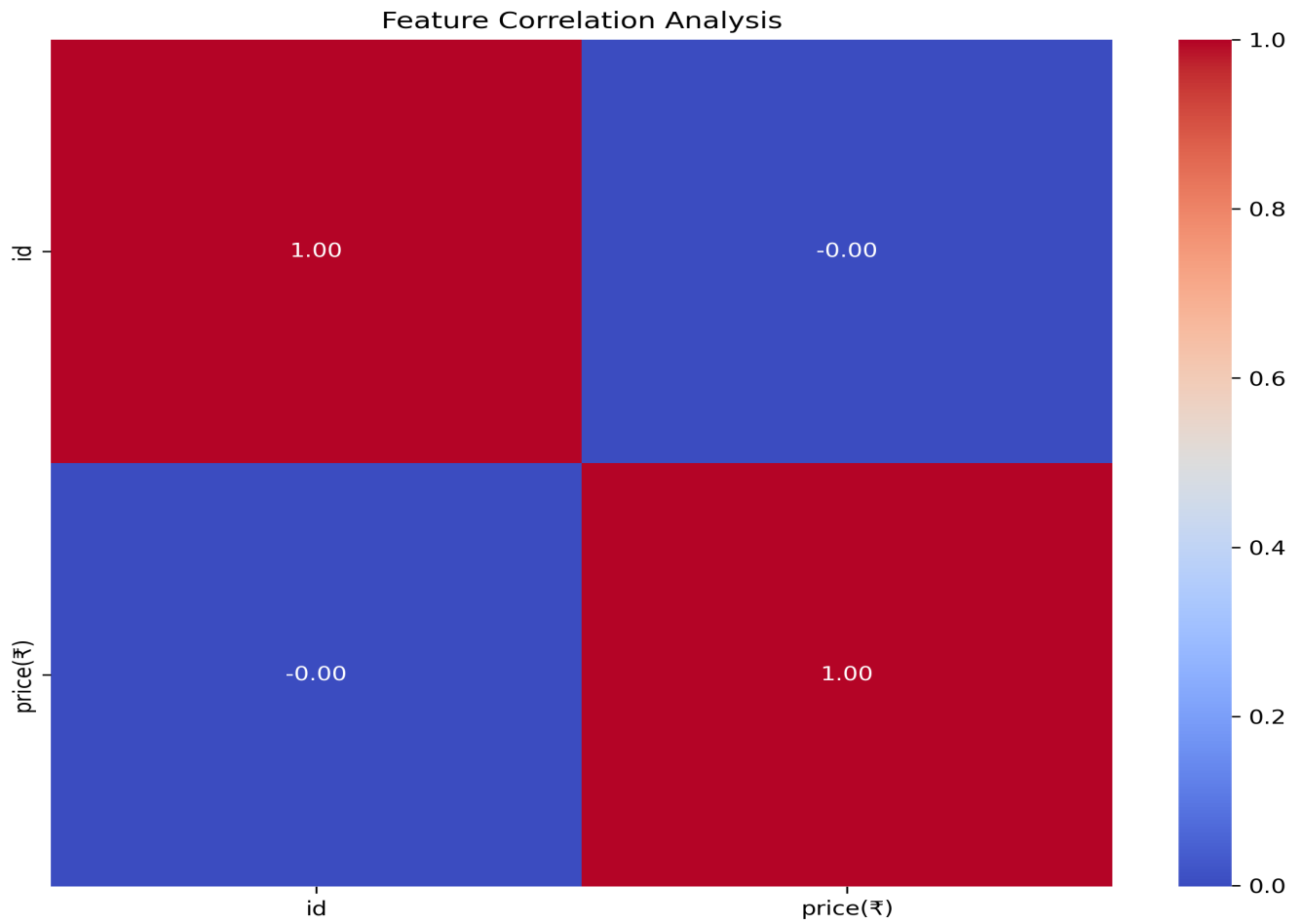
- Products with a larger pack size label ('100' and above) tend to have a higher average price, indicating a potential economy of scale effect.
- The presence of discontinued products in the dataset (11%) suggests the need for monitoring market trends and product lifecycles.

Data Visualizations

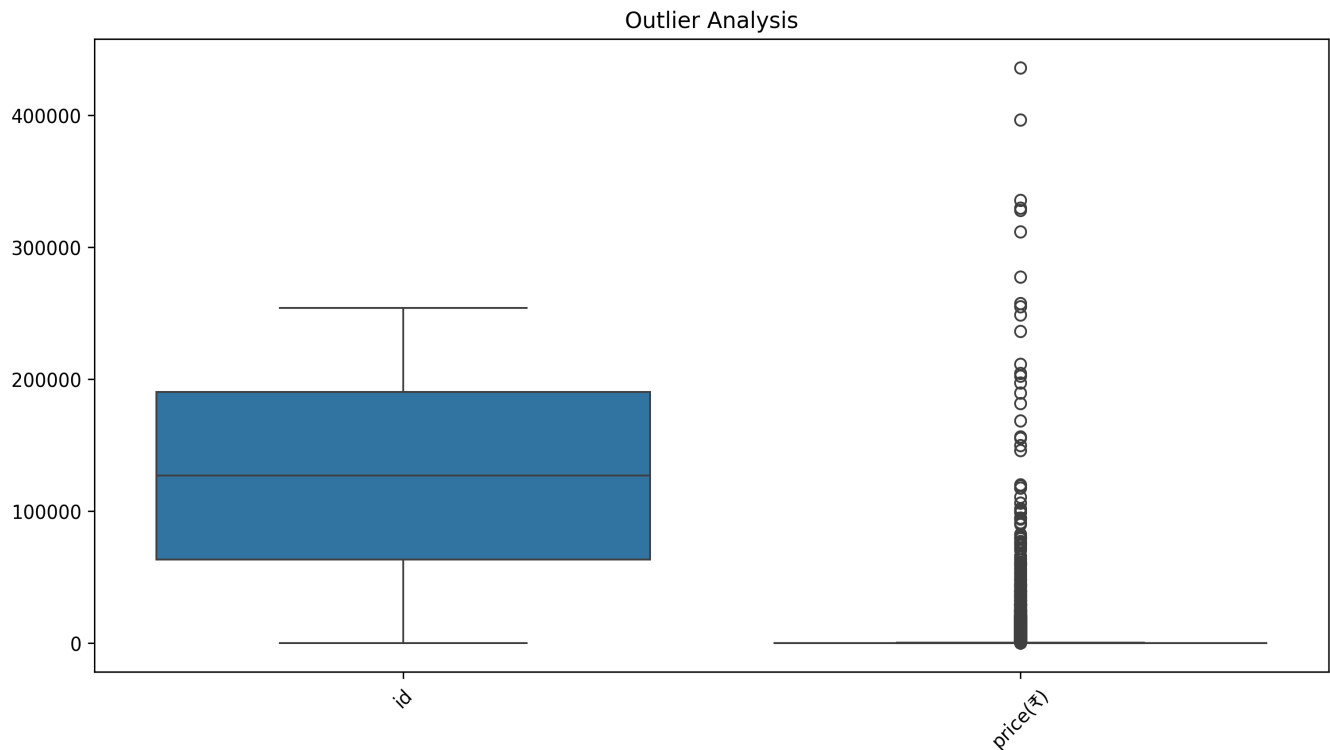
Feature Distributions



Correlation Analysis



Outlier Analysis



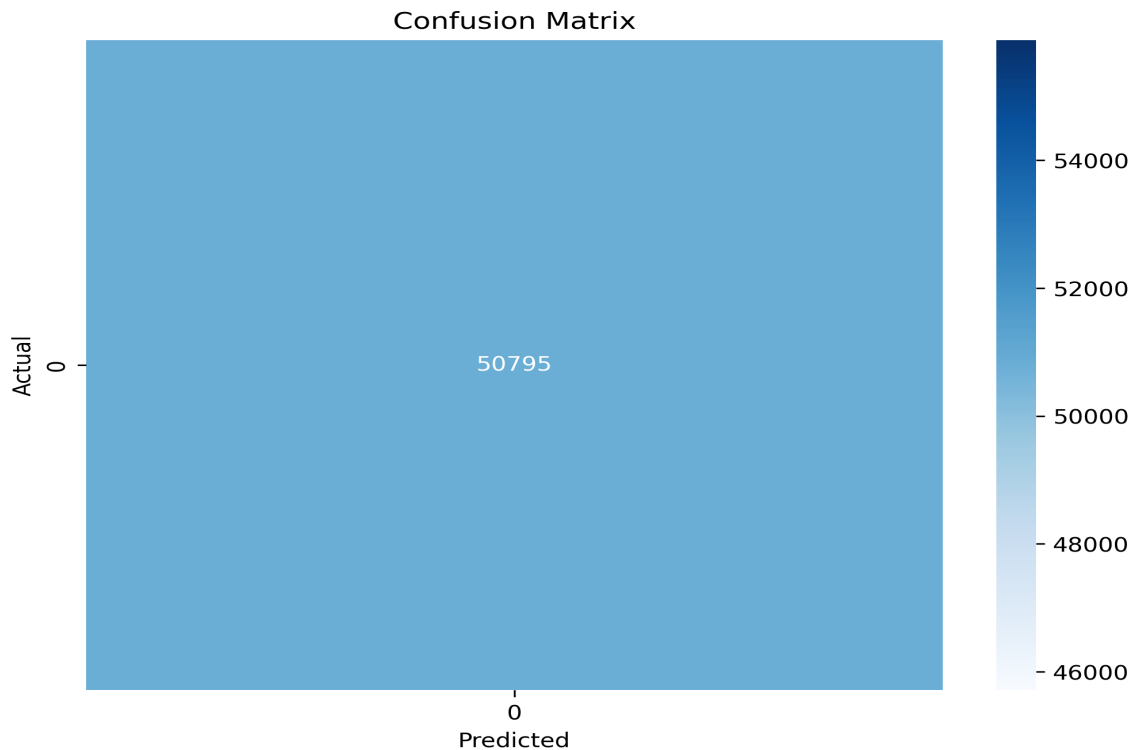
Prediction Analysis

Model Accuracy: 100.00%

Classification Report

precision recall f1-score support 0 1.00 1.00 1.00 50795 accuracy 1.00 50795 macro
avg 1.00 1.00 1.00 50795 weighted avg 1.00 1.00 1.00 50795

Confusion Matrix



Recommendations

- Establish price regulation mechanisms to ensure affordability and access to essential medical products.
- Monitor market trends and identify products at risk of discontinuation to ensure timely notification and alternative options for patients.
- Implement data collection strategies to address missing information on product compositions, ensuring comprehensive understanding of drug interactions and potential side effects.
- Encourage diversification of manufacturers to reduce supply chain vulnerabilities and enhance market competition.
- Provide clear and standardized guidelines on pack size labeling to minimize medication errors and improve patient safety.