

Summary:

Tags generated:

Extracted tags from two free-text fields: CUSTOMER_VERBATIM and CORRECTION_VERBATIM. The most frequent tags observed were:

- steering
- wheel
- heater / heating
- cover
- loose
- horn

These tags reveal recurring patterns related to steering wheel complaints, particularly issues with heating, physical damage (e.g., peeling, loose cover), and horn functionality. They help categorize and summarize large volumes of unstructured feedback effectively.

Insights:

Most common failure component: Steering wheel, with multiple customer complaints about heating failure, peeling covers, and stitching issues.

High-cost repairs were often linked with part replacements (e.g., entire steering wheel units or wiring harnesses).

Geographic patterns: Originally, CA had a higher number of cases, but post outlier removal, FL and OH became more prominent — indicating region-specific reporting or service behaviors.

Inconsistent repair outcomes: Some correction texts show only inspections done without action, while others proceed with full replacements. This could suggest inconsistency in service procedures.

Recommendation for Stakeholders:

Investigate recurring steering wheel complaints — consider a product design review for heating systems and materials used.

Standardize repair protocols — establish when replacement vs repair is appropriate to ensure uniformity across dealerships.

Enable early detection by creating automated alerts using tag patterns that suggest serious failures.

Geographic deep-dive — Analyze why certain states show more complaints or service inconsistency. Could be due to climate, driving patterns, or dealer handling.

Issue and Actions:

Null values in key columns: Imputed or dropped based on importance

Mixed casing / typos in categories: Standardized using `.str.lower()` and `.strip()` method

Numerical outliers: Used IQR method to generate Outliers then removed them.