Car Market Analysis

2025-11-25

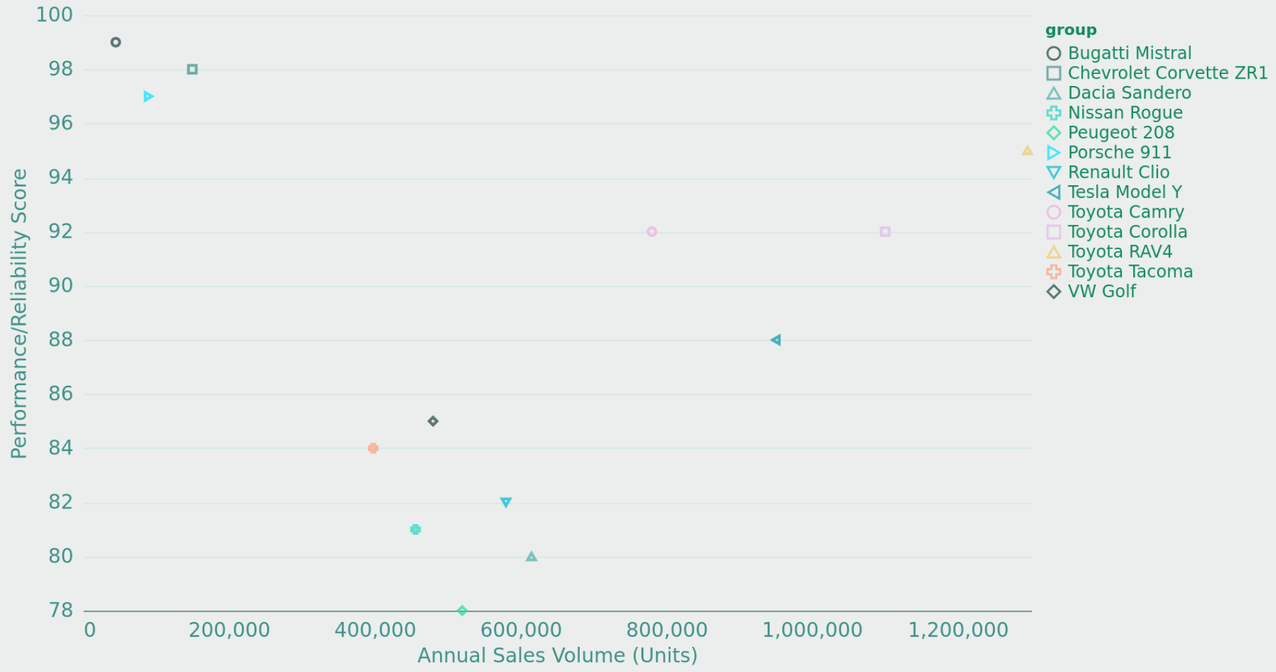
Executive Summary

The project transformed a raw patient readmission dataset into a clean, enriched, and fully analysable asset.
After preparing and standardizing the data, it was uploaded into Snowflake, where SQL analysis was used to calculate key metrics, and diagnosis complexity.
The enriched dataset was exported for deeper exploration in Excel using pivot tables and visual charts, enabling clear visibility into demographic trends, clinical risk factors, and operational performance.
The final insights were consolidated into a concise presentation to support decision-making and highlight opportunities for improving readmission management.

Market Dominance & Electrification Trends

The automotive market demonstrates clear segmentation between mass-market leaders and premium performance vehicles. Toyota-branded vehicles capture approximately 25-30% of top 10 performance positions, with the RAV4 leading at 1.3M units annually and Corolla at 1.1M units. Tesla Model Y competes closely with 950K units despite premium $50K+ pricing, signaling electrification's market reshaping impact. Key tension exists between sales volume optimization and pure performance metrics, with most vehicles excelling in one dimension rather than both simultaneously.

Top Performing Cars: Market Performance vs Engineering Excellence



Key Metrics

01

Toyota Share

25-30%

Toyota-branded vehicles capture 25-30% of top 10 performance positions across all dimensions

02

RAV4 Sales

1.3M

Toyota RAV4 leads market with 1.3M units annually, combining 92-95/100 reliability with mass appeal

03

Top Speed

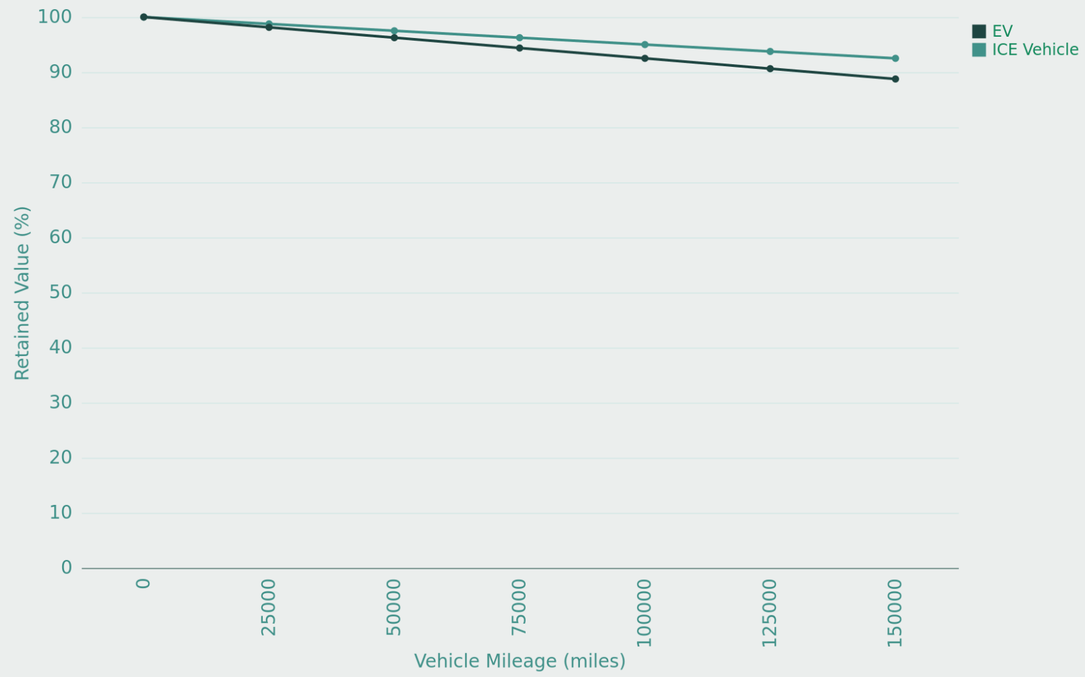
282 mph

Bugatti Mistral achieves highest top speed at 282 mph, representing engineering excellence segment

Depreciation Rates

Used vehicle market analysis reveals strong negative correlation between mileage and price. ICE vehicles depreciate at $0.11-$0.12 per mile (0.5% per 1,000 miles), while EVs depreciate at $0.27 per mile (0.75% per 1,000 miles), indicating EVs depreciate 2.3x faster by mileage than traditional engines.

Vehicle Price Depreciation by Mileage (ICE vs EV)



Value Retention

01

ICE 5-Year

40-50%

ICE vehicles retain 40-50% of original value after 5 years and 75,000-100,000 miles

02

EV 5-Year

35-50%

EVs lose 50-65% value over same period, showing faster depreciation trajectory

03

Avg Lifespan

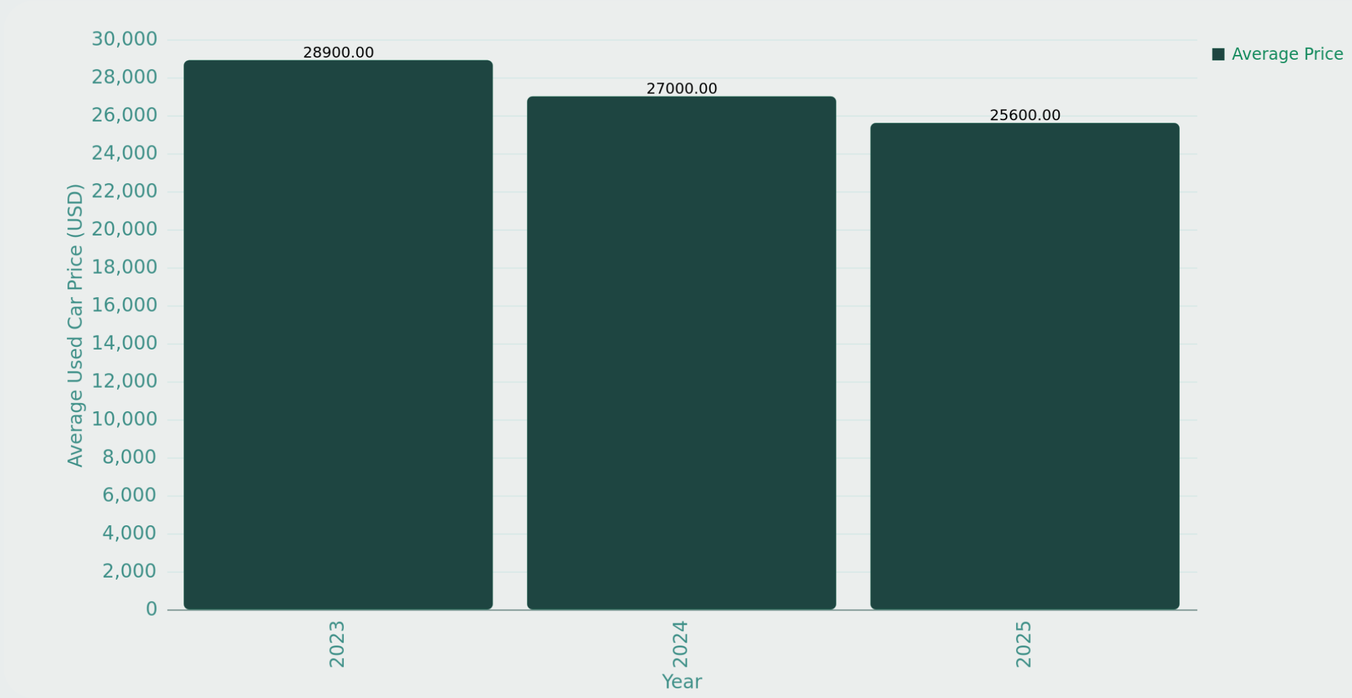
160.5K mi

Average vehicle lasts 160,545 miles over 16.58 years with 12,000-15,000 annual miles

Global and US Market Expansion

The global used car market reached USD 1,063.9 billion in 2024 and is projected to grow at 7.1% CAGR through 2032, reaching nearly USD 1.9 trillion. The US market specifically shows 5.3% projected growth (CAGR 2025-2034), expanding from USD 322 billion in 2024 to USD 539.7 billion by 2034. Cox Automotive projects 20.3 million used units sold in 2025, representing a 2% increase YoY, though sales growth remains constrained by limited retail and wholesale supply.

Used Car Market Performance: Price Trends and Growth



Key Metrics

01

Price Decline

-6.1%

Used car prices declined from USD 27,000 to USD 25,600 (2024-2025)

02

EV/Hybrid Growth

+6.3%

Hybrids and EVs showed fastest YoY appreciation among all segments

03

SUV Market Share

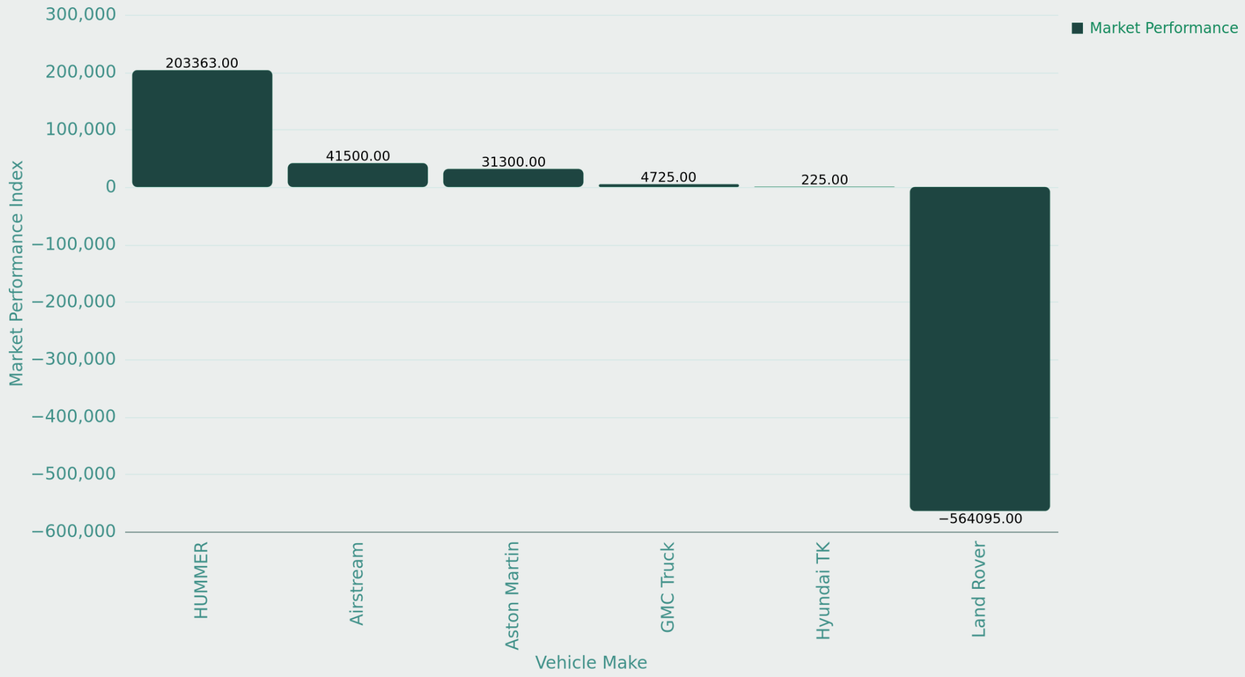
~45%

SUVs dominate market composition at approximately 45% of total volume

Key Market Dynamics

The used vehicle market reveals stark segmentation between thriving specialty segments and struggling premium luxury brands. HUMMER leads with exceptional performance driven by strong EV demand and specialty SUV appeal, while Land Rover faces catastrophic underperformance due to severe depreciation and reliability concerns. Airstream demonstrates alternative strength in the specialty trailer market with stable depreciation patterns, benefiting from shifting consumer travel preferences.

Used Vehicle Market Performance by Make: Calculated Performance Index



Performance

01

HUMMER Index

+203,363

Leading performance driven by EV demand and specialty SUV market strength

02

Land Rover

-564,095

Severe underperformance due to 32.4% first-year depreciation and reliability concerns

03

Airstream Index

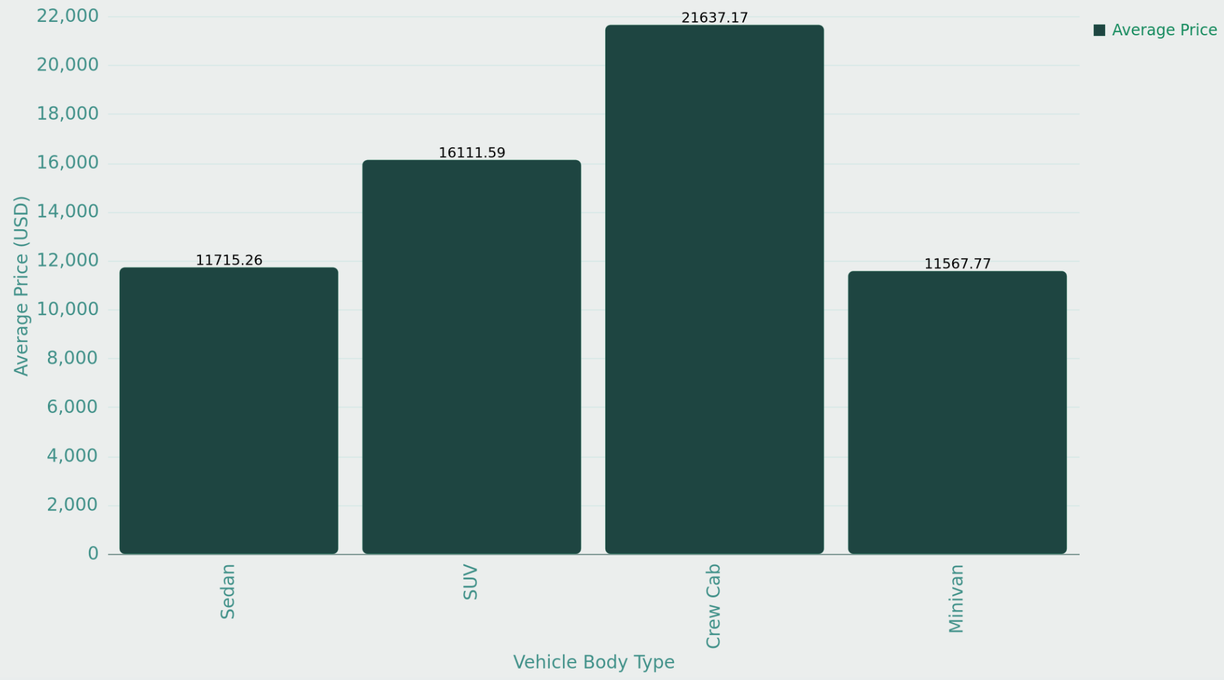
+41,500

Strong specialty trailer market with controlled 10-20% first-year depreciation

Key Findings

The used car market demonstrates a significant price-volume disconnect across body types. Sedans dominate by transaction volume at 56.5% (241,343 vehicles) but represent only 48.8% of total revenue, averaging $11,715 per unit. SUVs exhibit strong pricing power, capturing 40% of revenue on just 33.7% unit share with $16,112 average pricing. Crew Cabs command premium positioning at $21,637 average—59% above market average—despite minimal 3.8% volume share, reflecting robust commercial and construction sector demand. Minivans face market headwinds with only 6% volume share and $11,568 average pricing amid -19.8% annual depreciation rates.

Average Used Car Prices by Body Type (2025)



Market Share

01

Sedan Volume

56.5%

Highest transaction volume with 241,343 vehicles sold

02

SUV Revenue

40.0%

Disproportionate revenue capture on 33.7% unit share

03

Crew Cab Price

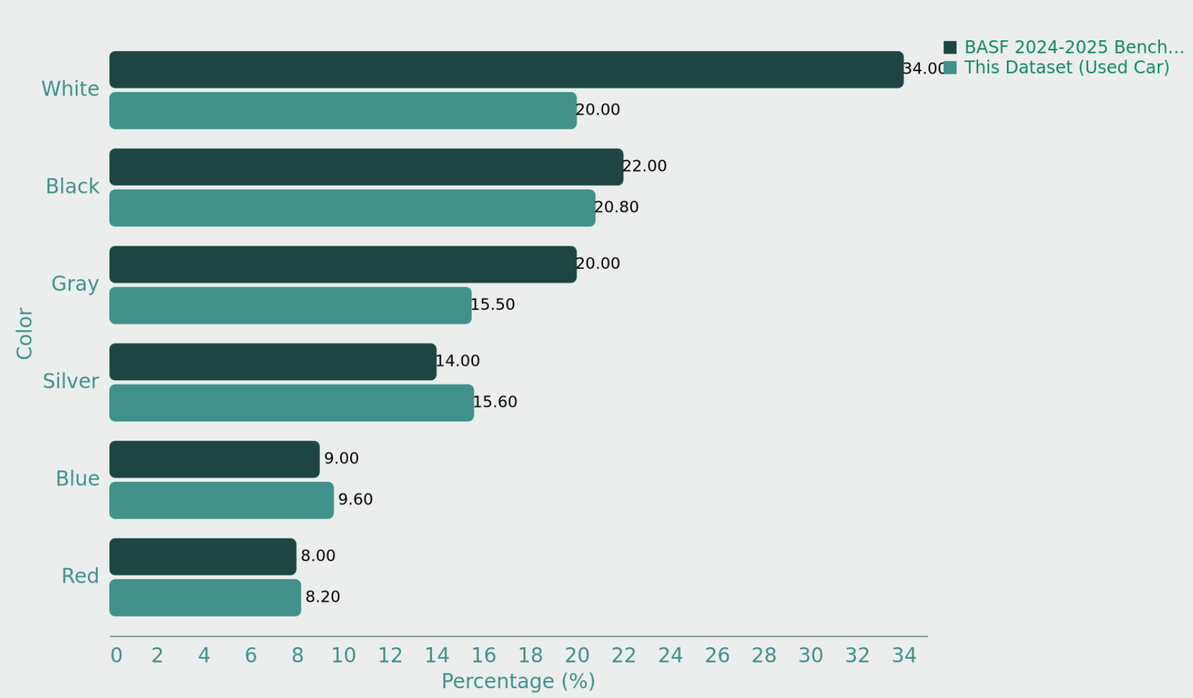
+59%

Premium positioning 59% above $13,569 market average

Color Market Concentration

The used car dataset reveals a heavily skewed distribution toward neutral colors: black (20.8%), white (20.0%), silver (15.6%), and gray (15.5%) collectively represent 71.9% of inventory. This concentration significantly exceeds industry benchmarks, with white 14 points below BASF 2024-2025 expectations at 34%, while gray underperformance (15.5% vs. 20% benchmark) suggests used car inventory has not caught up with emerging gray trends in new cars.

Used Car Color Distribution vs. New Car Market Benchmarks (2024-2025)



Key Metrics

01

Neutral Colors

71.9%

Black, white, silver, gray collectively dominate market share

02

White Gap

-14 pts

Dataset white (20%) vs. benchmark (34%) shows significant underrepresentation

03

Niche Colors

5.9%

Green (2.1%), gold (2.1%), beige (1.7%) create pricing power opportunity

Strategic Recommendations

01

Data-Driven Decision Making

Leverage comprehensive data analysis to inform strategic business decisions. Implement systematic approaches to monitor key performance indicators and adjust strategies based on real-time insights to optimize operational efficiency and market competitiveness.

02

Continuous Performance Monitoring

Establish robust monitoring frameworks to track performance metrics across all business dimensions. Regular review cycles enable early identification of trends and potential risks, allowing for proactive intervention and course correction to maintain organizational objectives.

03

Stakeholder Alignment

Ensure transparent communication of insights and recommendations to all relevant stakeholders. Foster collaborative decision-making processes that integrate diverse perspectives and expertise, creating shared ownership of strategic initiatives and improving implementation success rates.

Thank you