Bright Motors Car Sales Analysis

BUSINESS INSIGHTS FOR THE NEW HEAD OF SALES

Agenda

Introduction

Timeline

Sales Performance

Strategic Recommendations

Timeline

14 November 2025

Data Preparation and Project Planning:

Clean user profiles, normalize timestamps, handle missing values or duplicates

17 November 2025

Data visualization:

Export results from Snowflake to Excel

Used Pivot tables for graphing and Create charts for trends

21 November 2025

Dashboard Design:

Used Google Looker to Define KPIs, layout, and mock-up

Snowflake Coding and Exploratory Data Analysis: *Create a database, Schema and Import csv files to snowflake before coding process can begin*

14 November 2025

Presentation:

Used PowerPoint to give context to the graphs produced in previous phase

Build 20-min deck with insights, recommendations, and roadmap

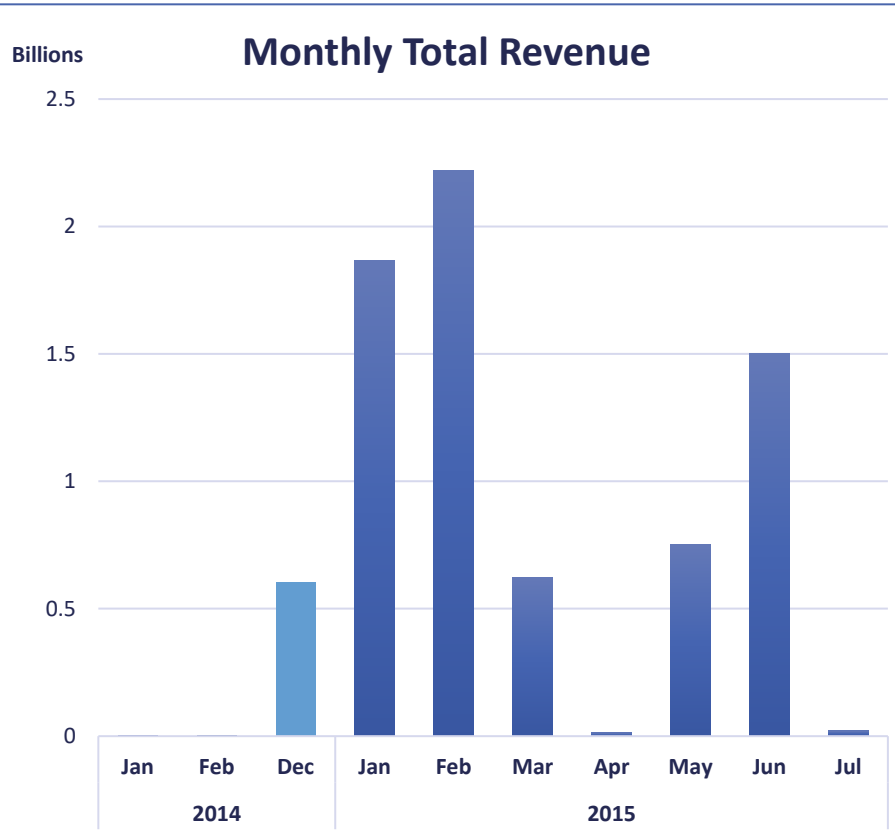**18 November 2025**

25 November 2025

Submission:

Packaged all deliverables and stored them for review on GitHub

Overview

❖ Bright Motors operates in the used car resale market, managing over 558,799 transactions across 38 U.S. states

❖ Its inventory spans 34 production years, covering 96 different makes and 973 models, which shows a highly diverse product offering

❖ Its strategy emphasizes competitive pricing and high transaction volumes, while selectively capturing higher margins on certain deals.

❖ The price tier distribution of its car range from high to low, which indicates that Bright Motors serves both budget-conscious buyers and those seeking premium options

❖ Bright Motors aims to expand its dealership network and boost sales performance

❖ The objective of this presentation is to provide business insights for a New Head of Sales using historical car sales data from Bright Motors that will help guide future sales and marketing strategies
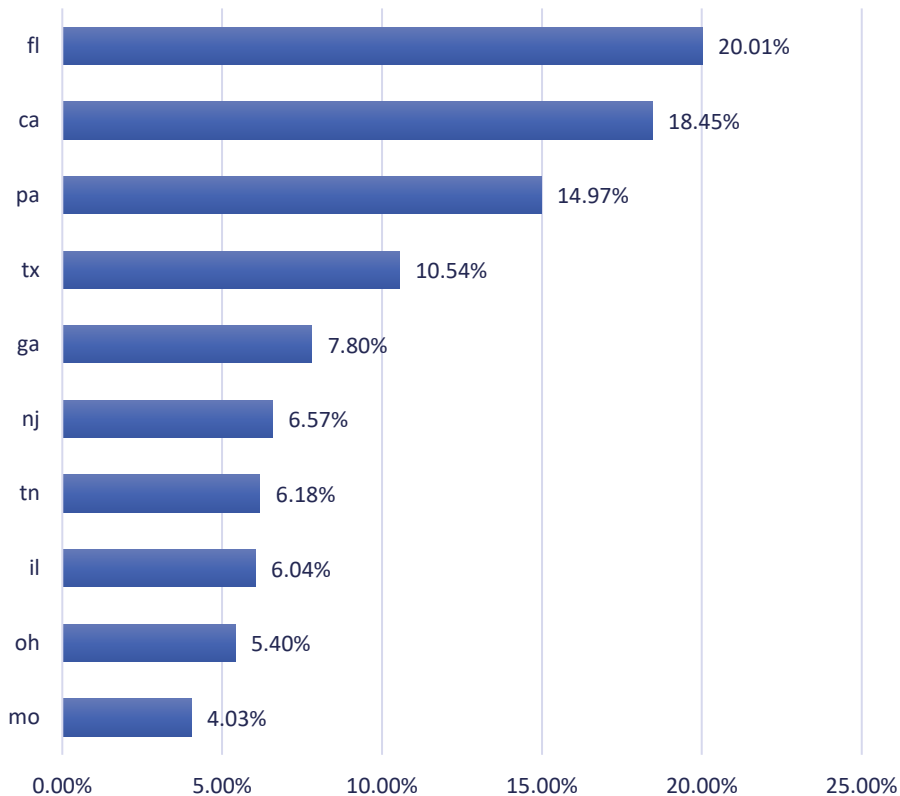
Sales Performance

Monthly Total Revenue — Billions

(Chart showing monthly total revenue with months Jan, Feb, Dec (2014) and Jan, Feb, Mar, Apr, May, Jun, Jul (2015), y-axis from 0 to 2.5)

- ❖ January and February 2015 show the highest sales volumes, with February peaking at more than 2 Billion

- ❖ This suggests strong seasonal demand early in the year, possibly due to new year promotions or new model launches

- ❖ April and July have extremely low sales, almost negligible compared to other months.

- ❖ Indicates potential issues such as inventory shortages, market disruptions, or lack of marketing campaigns during these months.

- ❖ May showing moderate sales rebound recovery after April's dip growing into June

- ❖ December maintain moderate performance suggesting end-of-year buying trends.

- ❖ Overall, clear seasonality can be seen as Q1 dominates, mid-year fluctuates, and year-end stabilizes.
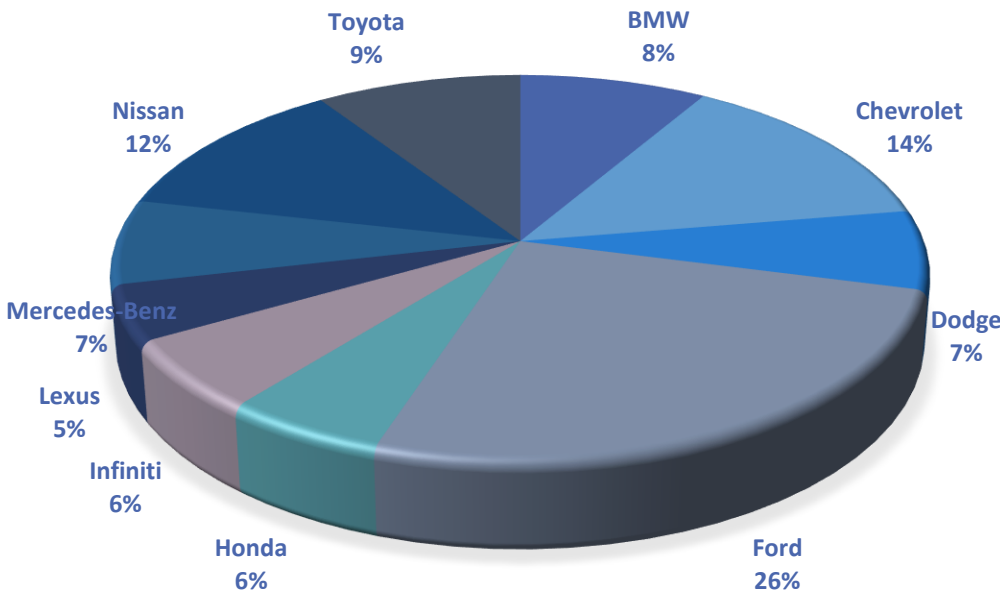
Sales Performance By State

Top 10 Performing States

State	Percentage
fl	20.01%
ca	18.45%
pa	14.97%
tx	10.54%
ga	7.80%
nj	6.57%
tn	6.18%
il	6.04%
oh	5.40%
mo	4.03%

❖ Top revenue state Florida (FL) leads with 20.00% of total revenue, followed by California (CA) at 18.44%.

❖ These two states alone contribute nearly 38.5% of total revenue, making them critical markets for Bright Motors.

❖ Strong secondary market in Pennsylvania (PA) contributing 14.99%, ranking third.

❖ Combined with FL and CA, the top three states account for over 53% of revenue, indicating a concentrated revenue base.

❖ Moderate contributors are Texas (TX) at 10.55% and Georgia (GA) at 7.81% show solid performance. These states represent opportunities for further dealership expansion and targeted marketing.

❖ Lower revenue States like Missouri (MO) (4.03%), Ohio (OH) (5.40%), and Illinois (IL) (6.03%) contribute less.

❖ Bright Motors need to evaluate cost-benefit of maintaining operations in these regions or consideralternative growth strategies.
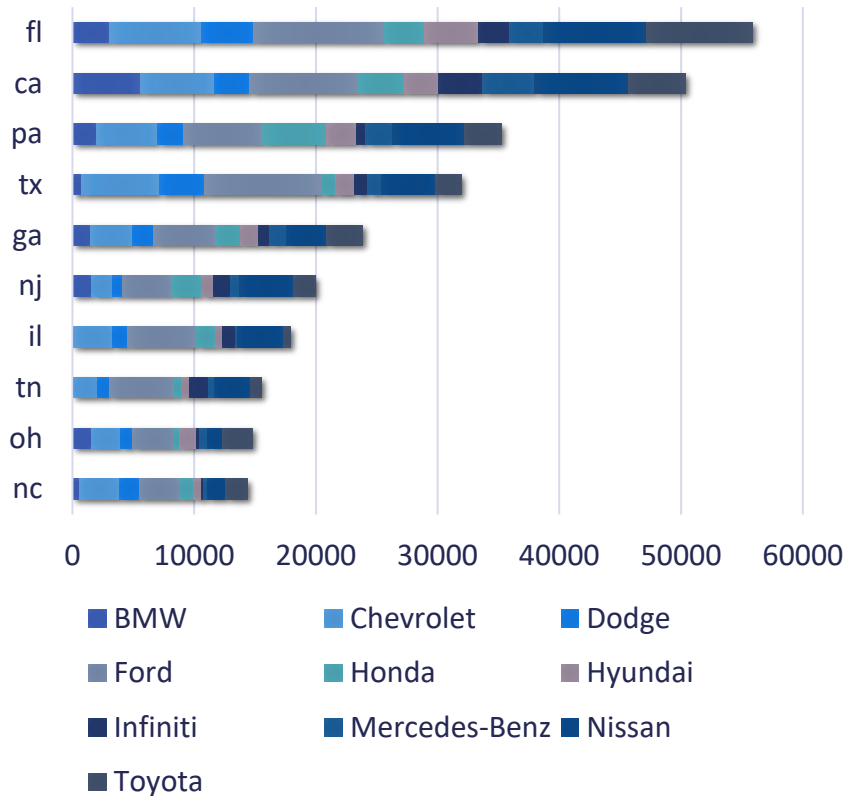
Sales Performance By Car Make

TOP 10 PERFORMING MAKES

- ❖ Ford accounts for 26.08% of total revenue, making it the most profitable brand for Bright Motors.

- ❖ This suggests Ford should remain a priority for inventory and marketing efforts

- ❖ Ford (26.08%), Chevrolet (13.85%), and Nissan (12.13%) together contribute over 52% of total revenue.

- ❖ These brands are critical drivers of sales and should be the focus for dealership expansion and promotional campaigns.

- ❖ Toyota (9.35%) and BMW (8.55%) show strong performance but lag behind the top three.

- ❖ Opportunity exists to increase market share through targeted offers or financing options.

Model Sales by State

Car Sales Model by State

Legend: BMW, Chevrolet, Dodge, Ford, Honda, Hyundai, Infiniti, Mercedes-Benz, Nissan, Toyota

States (top to bottom): fl, ca, pa, tx, ga, nj, il, tn, oh, nc
X-axis: 0, 10000, 20000, 30000, 40000, 50000, 60000

Dominant Brands:
- Toyota and BMW appear consistently strong across most states.
- Florida and California show the widest variety of makes, with high volumes for Toyota, BMW, Nissan, and Mercedes-Benz.
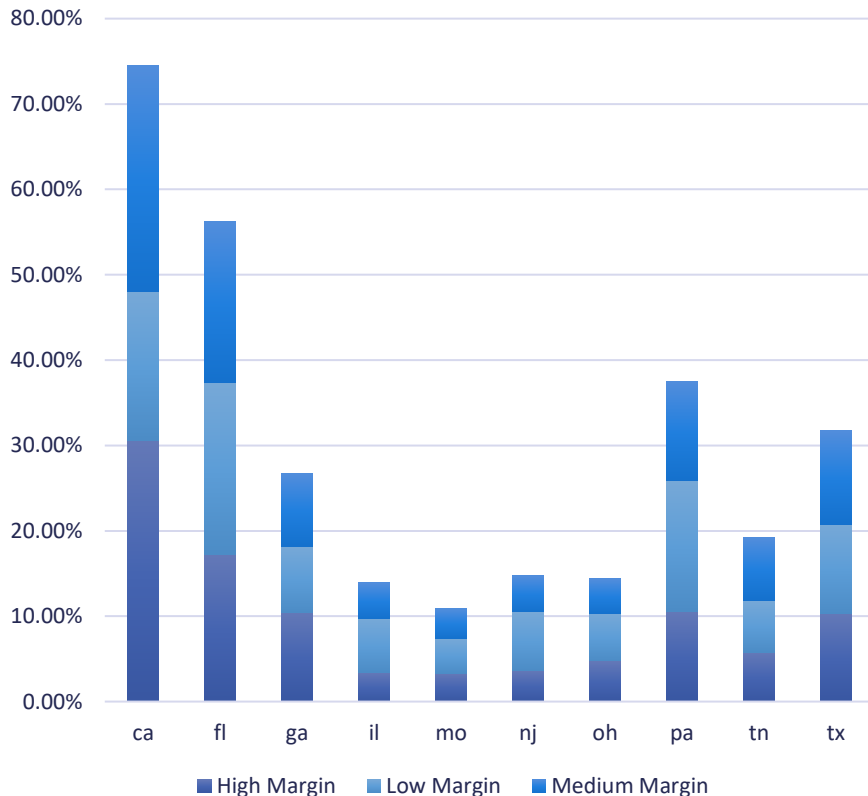
State Preferences:
- Texas: Toyota and BMW lead, with Chevrolet also notable.
- Pennsylvania: Strong presence of Mercedes-Benz and Nissan alongside Toyota.
- Florida: Most diverse mix, with significant sales for Toyota, BMW, Nissan, and Mercedes-Benz.

Luxury vs Non-Luxury:
- Luxury brands (BMW, Mercedes-Benz, Infiniti) have strong representation in CA and FL, suggesting higher-income demographics.
- Non-luxury brands (Toyota, Chevrolet, Ford) dominate in TX, GA, and OH.
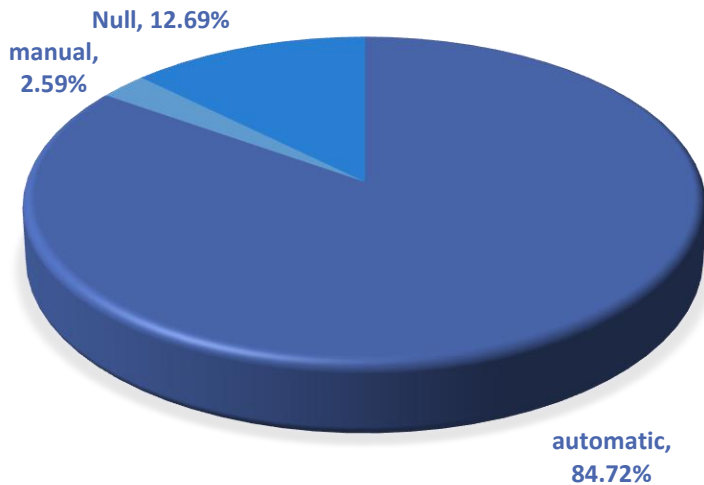
Profit Margins by State

Regions with strong profit margins

(Bar chart showing profit margins by state: ca, fl, ga, il, mo, nj, oh, pa, tn, tx with Y-axis from 0.00% to 80.00%. Legend: High Margin, Low Margin, Medium Margin)

❖ High margin sales are strongest in CA and FL, moderate in PA and TX, and minimal in other regions.

❖ California (CA) leads significantly with 75% total contribution, dominated by Medium Margin and High Margin sales.

❖ Medium margin Sales dominate CA and FL, but are relatively low elsewhere.

❖ Low Margin Sales are prevalent in GA, PA, TX, and smaller regions, which could dilute overall profitability.

❖ This suggests CA is the most profitable region overall.

❖ Florida (FL) follows with 55% total contribution, but has a higher proportion of Low Margin compared to CA, indicating mixed profitability.

❖ Medium tier regions Pennsylvania (PA) and Texas (TX) show moderate performance (~30-35% total contribution each). Both have balanced contributions from all three margin categories, but PA slightly edges TX in overall profitability.

❖ Georgia (GA) is next with ~25-28%, leaning more toward Low Margin sales.

Transmission Preferences

TRANSMISSION PREFERENCE
CONTRIBUTION TO REVENUE

Null, 12.69%

manual,
2.59%

automatic,
84.72%

Automatic Transmission Dominates Revenue
- Automatic cars contribute 84.72% of total revenue, making them the overwhelming preference among customers.
- This indicates a strong market trend toward convenience and ease of driving.
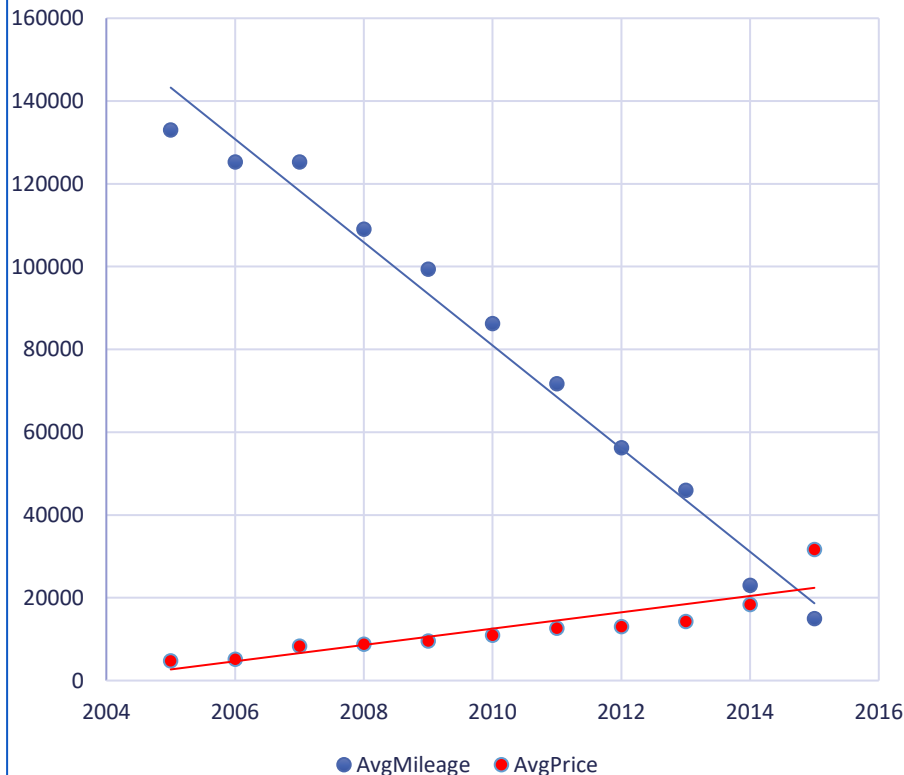
Manual Transmission is Minimal
- Manual cars account for only 2.59% of revenue.
- This suggests that manual vehicles are either niche products or losing relevance in Bright Motors' portfolio.

Null Category (12.69%)
- A significant portion of revenue is classified as Null, meaning transmission type was not recorded or is missing.
- This could indicate data quality issues or sales from categories where transmission is not applicable (e.g., electric vehicles).

Correlation between Price & Mileage

Chevrolet Yearly Models - Mileage vs Price

- ❖ There is a strong negative correlation between mileage and price:
  - ❖ Higher mileage → Lower price (older cars).
  - ❖ Lower mileage → Higher price (newer cars).

- ❖ This is expected in the used car market, where mileage is a major determinant of value

- ❖ Mileage decreases sharply year-over-year, suggesting that newer models are driven less or are relatively new in the market.

- ❖ Price increases gradually, not as steep as mileage decreases, indicating depreciation slows down for newer models.

- ❖ Around 2014, the two trend lines intersect visually with mileage dropping below 30,000 miles and price rising above $20,000.

- ❖ This suggests that cars from 2014 onward are relatively new and command higher prices

Strategic Recommendations

- **Focus Markets:**
  - Florida and California are critical for revenue; maintaining dominance here is essential

- **Product Strategy**:
  - Focus on **automatic transmission vehicles**, as they dominate customer preference and revenue.
  - Ford, Chevrolet, Nissan, Toyota and BMW are core drivers of volume therefore expanding luxury offerings in high-performing states could boost margins

- **Data Quality Improvement**:
  - Investigate the **12.69% Null** category to ensure accurate reporting and better decision-making.
  - If Null represents EVs, Bright Motors should analyse EV sales separately for strategic planning.

- **Marketing & Inventory**:
  - Florida's diverse brand mix suggests that offering variety can capture broader market share.
  - Highlight automatic transmission benefits in marketing campaigns.
  - Optimize inventory to align with demand—minimize manual stock.

- **Growth Opportunity:**
  - States like Illinois and Tennessee have lower sales—potential for targeted campaigns.

Thank you

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