

# **Technical Report for AJS Cars Group of companies**

## **Car Sales Analysis Using Microsoft Excel**

### **Introduction**

This report analyzes car sales data of AJS Cars Group of companies using Microsoft Excel to find patterns and trends in sales performance. The purpose of the analysis is to explore sales data, identify trends, and highlight key factors contributing to sales performance

### **Aim and Objective**

#### **Aim**

The aim of this car sales analysis is to evaluate the performance of AJS Cars Group using Microsoft Excel tools to identify key trends, top-performing products, top performing sellers, bestselling state, and areas for deliberate improvement. This analysis is proposed to support data-driven decision-making that increases sales efficiency and productivity

#### **Objectives**

- To identify the best-selling car brands and models based on total revenue and sales volume.
- To determine the top-performing sellers and regions contributing the highest sales revenue.
- To evaluate customer preferences in terms of car color, condition, and trim level.
- To examine sales trends over the years and detect any patterns or declines.
- To use Microsoft Excel tools such as pivot tables, charts, and dashboards for efficient data analysis and visualization.
- To provide actionable recommendations for improving inventory planning, marketing, and regional sales plans.

## **Problem being addressed**

Identifying why the company experienced decline sales performance over the years, as shown by the down sales trend in yearly revenue from 2013 to 2004

Analyze why some states are underperforming compared to others and discover opportunities to market targeting and strategies to address them

The Analysis is trying to understand why some of the sellers are not meeting their targets and how to address the gaps in the performance

Assessing and analyzing whether current pricing strategies are competitive and fair to customers, and determining if they need adjustments to increase sales in the coming year

## **Key dataset and methodologies**

The datasets contain detailed information about car sales transactions which includes sales of car brand, model and condition

Revenue Data contain total revenue by each car, seller and region

Car Specifications: contain information on color, trim level, and condition

Geographic or Regional data contain Sales performance by state (e.g., FL, NY, CA, etc.).

Time series data contain yearly sales data

Seller Data: contain performance of different seller and financing companies.

## **Methodology**

Pivot tables were used to summarize and group sales data by car, make, model, color, seller and state

Charts and Graphs (bar charts, pie charts, and line graphs) were used to visualize key metrics such as Top sellers, revenue trends and best-selling colors

Slicers and filters allowed interactive navigation and filtering by features like seller, car make and color

**Dashboard Design:** A visual dashboard was created to display key performance indicators (KPIs) such as Top car brands and models by revenue, sales trends over time

A visual dashboard was created to display KPIs, such as:

Best selling cars, Top seller by revenue, best state by revenue, Best- selling color of cars and Top model with good condition

Conditional formatting and icons (e.g., best seller, best color) were added for quick visual clarification

## **Story of data**

**Data source:** The Data is car sales dataset downloaded from Kaggle.com.

**Data structure:** The data is organized into rows and columns, rows representing a number of different values of transaction, columns represent different variables like year, make, model, trim, body, transmission, state, vin, odometer etc.

## **Important Features and Their Significance**

**Car Make (Brand)** This help us to identify the manufacturer of different car, example Ford. Nissan, Toyota, BMW)

**Significance:** This helps to analyze brand performance and customer preference trends.

**Car Model:** These indicates different car model example, Altima, fusion

**Significance:** This is Useful for pursuing which models are driving the most revenue and volume.

**Year:** This shows the model year or sales year

**Significance:** This Helps us to identify the sales performance over the years

**Revenue (Selling price):** This represents the total income generated from each sale.

**Significance:** This is effective for measuring financial performance and productivity.

**Vehicle Condition:** These indicates whether a car is in good, fair, or poor condition

**Significance:** These Affect the pricing strategy and customer interest for the car

**Trim Level:** Trim level refers to the configuration or version of a model for example base, sport, premium

**Significance:** It Helps to identify which versions are more popular or profitable.

**Car Color:** These indicates color preferences of buyers

**Significance:** This is Useful for inventory decisions and customizing marketing visuals.

**Data limitation or bias:**

The data is past and ends in 2015, that's 7 years ago and may not reflect recent market trends.

The analysis relies on quantitative data only; qualitative factors like customer satisfaction or service quality are not covered.

**Data cleaning:** I ensure I manually observe and checked the datasets for any errors, duplicate, missing rows, the datasets was cleaned

For consistency letters, I ensure there is consistency in the letters before analysis, I ensure I put proper cases throughout the Headings for consistency.

I ensure the data is kept on the standard excel table, because it allows easy automation and accuracy before analysis.

Data splitting

The data were split into two categories

Independent and dependent variables or value

Category1: Independent value

make

model

trim

body

transmission

interior

Category 2: dependent value

mmr

odometer

condition

selling price

sales date

year

Industry Type: this dataset is a car sales dataset of AJS motor Group of company

Company success story or core value: the company success story is generating more revenue

Pre analysis board consist of potential analysis and potential insights

Potential Analysis

Performance analysis of the best seller with highest selling price

Yearly sales trends analysis

Analysis of the Top model with good condition

Analysis of best color base on selling price

performance analysis of the best performed state with the highest selling price

performance analysis of the Best makes with the highest selling price

### Potential Insights

To get the best seller of cars base on selling price, to let the company know the best seller.

To know the sales performance of the company yearly to permit us know how well the company perform each year so we can improve in the next coming year.

The analysis of Top model of cars with good condition so as to enable us work on the less performed model cars

The analysis of the best color of cars base on selling price will help the company to know the color of cars that customer prefer most and ensure the company do not go out of stock in the next coming year.

To know the best performing state selling cars so as to enable us open more outlets or branches over there.

Performance analysis of the best make with the highest selling price to aid us know the best performing car make

### **In-Analysis Board consist of in analysis observation and insights**

#### **In-Analysis observation**

from the analysis of the sales trends yearly, i observed that the company perform well in the year 2013 with a total sale of \$1715503321.this means the company generated more revenue in the year 2013.

for the performance sales analysis of the best seller, I observed that Ford Motor credit Company LLC. performing very well with a sale of \$340960125, while the least 7 is mercedes benz financial services.

from the analysis of the Top model of cars with high good condition, i observed that Altima has high rating condition of the total count of \$621474 while the least 6 bottoms performed is focus with \$345540

from the performance analysis of the best 5 state with highest revenue is fa and the least state is ga state.

### **IN- Analysis Insights**

Base on the performance analysis of the of the best make (Car) with the highest selling price, Ford lead the market with the highest revenue. The Top 3 Selling Brands/Make by Revenue are Ford, Chevrolet and Nissan, Ford leads by a substantial margin (13.6B revenue vs. 7.2B for Chevrolet).

The Best car sellers is Ford Motor credit company llc, this indicates the strong financial support driving high performance of Ford's car

for analysis of the Top Car with Good Condition: Altima is the highest, and this indicates a preference for reliable, well-maintained cars.

The Most Popular Car Color by Revenue is Black, followed by: White > Gray > Silver > Blue, this means that customers preferred buying black color cars base on the analysis.

For the best performing state by revenue generated, state, FL – 28%, This shows FL state has the highest demand or dealership activity. follow closely by state CA– 26%, and state PA– 21%

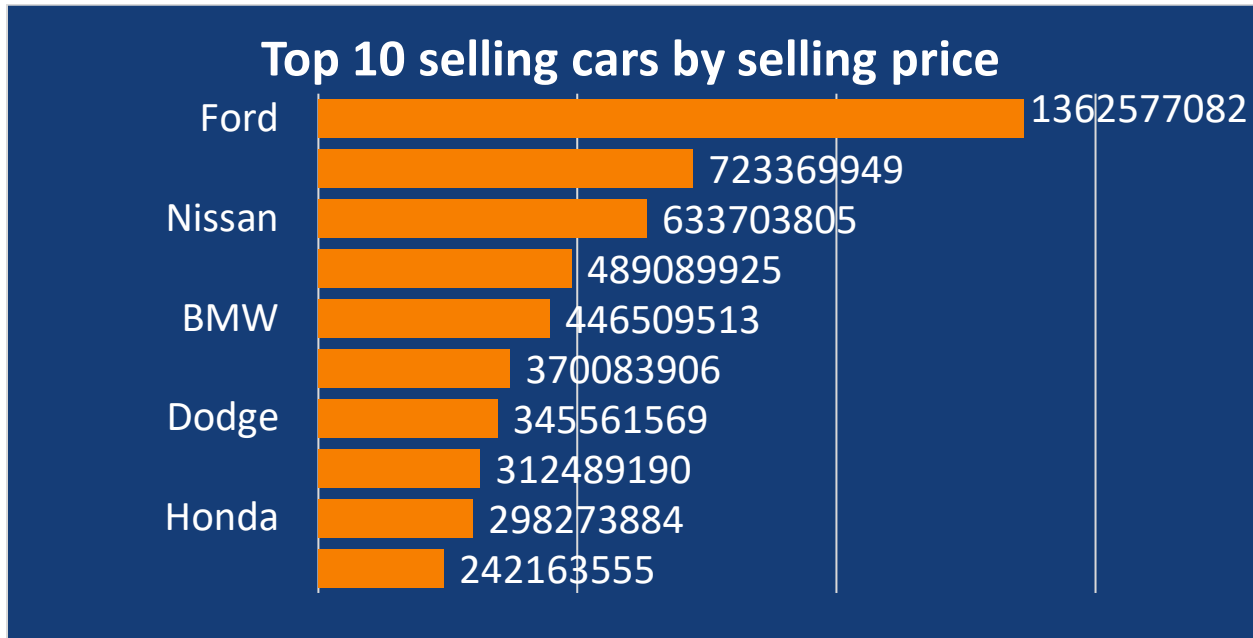
For the analysis of the cars/make with highest trim level, the Highest Trim Levels is found in cars like Ford, Chevrolet, Nissan. These means these make/ brands are not just selling more or making more revenue but also offering more premium features.

for the analysis of the Top Models with Best Condition, Altima, F-150, Fusion, Escape – mostly Ford and Nissan models are highest performing cars model with good condition, which might be one of the reasons why they are generating more revenue, the low performing model need to look into that for their product also.

Base on the yearly sales trends analysis, there is consistent yearly decline in overall sales from 2013 to 2004. these might due to either a market shift, recession or economic effects and the company might want to look into the possible causes of the decline.

## Data visualizations and charts

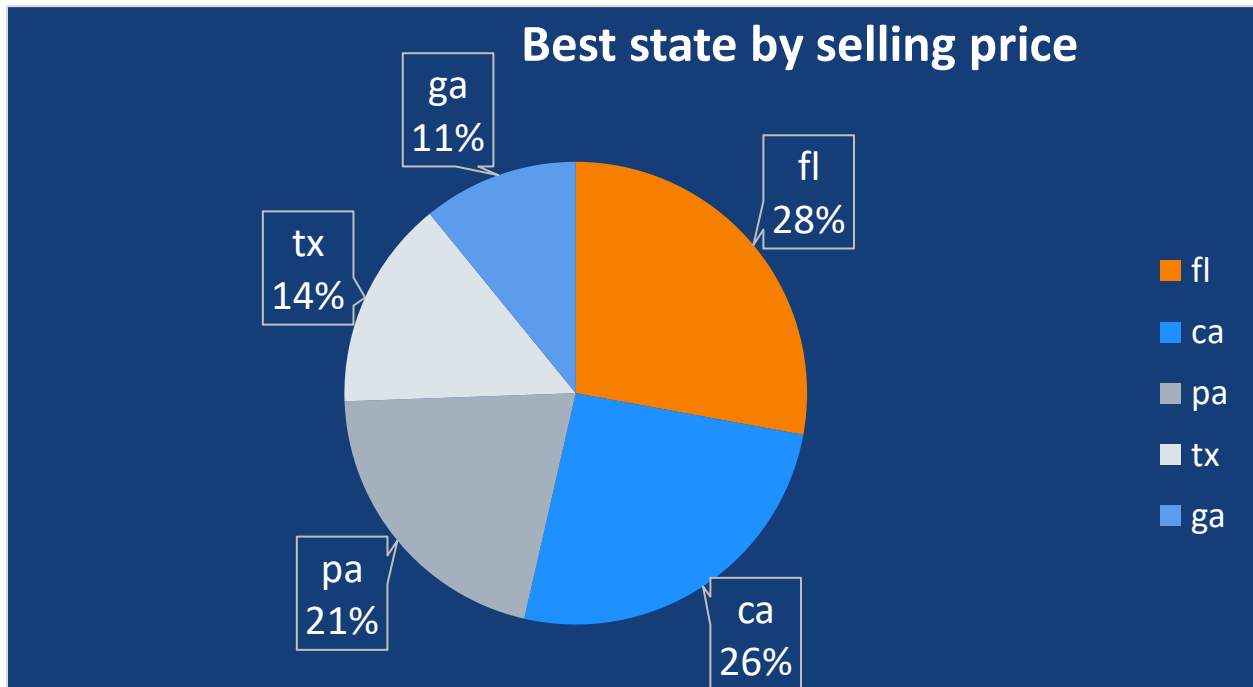
Visualization of the Top selling cars by selling price. The Top car by revenue is Ford.



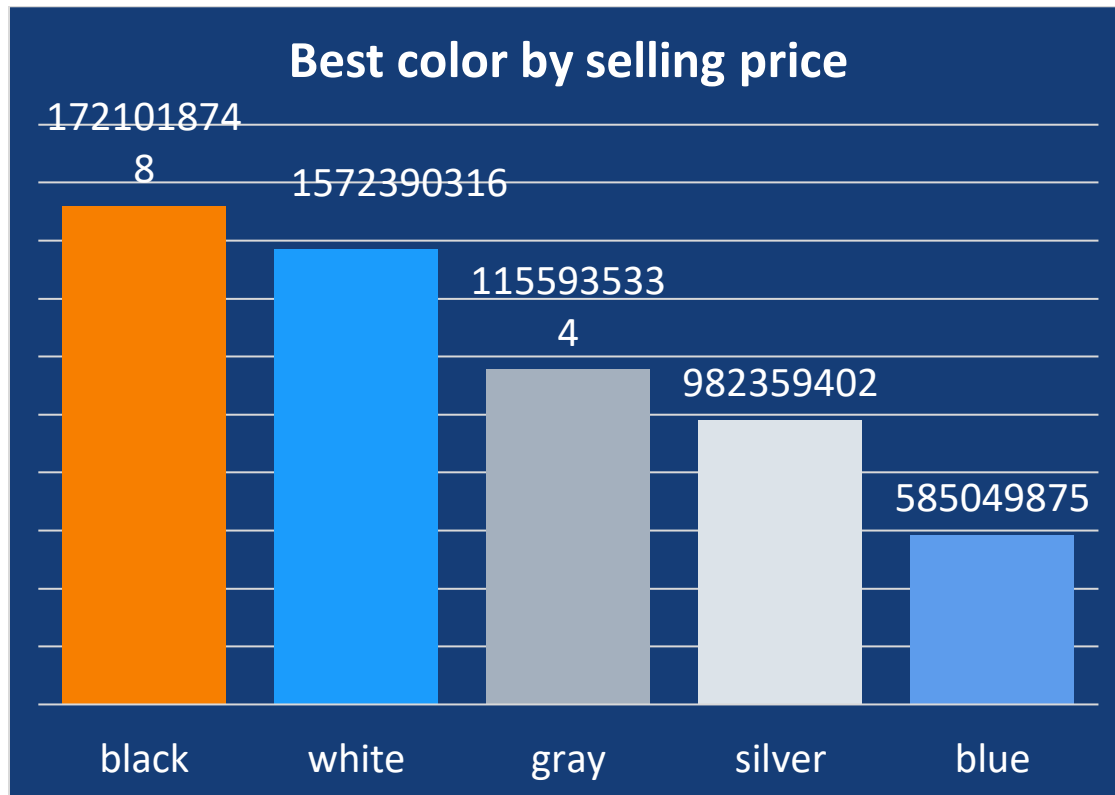


## Visualization of the best state

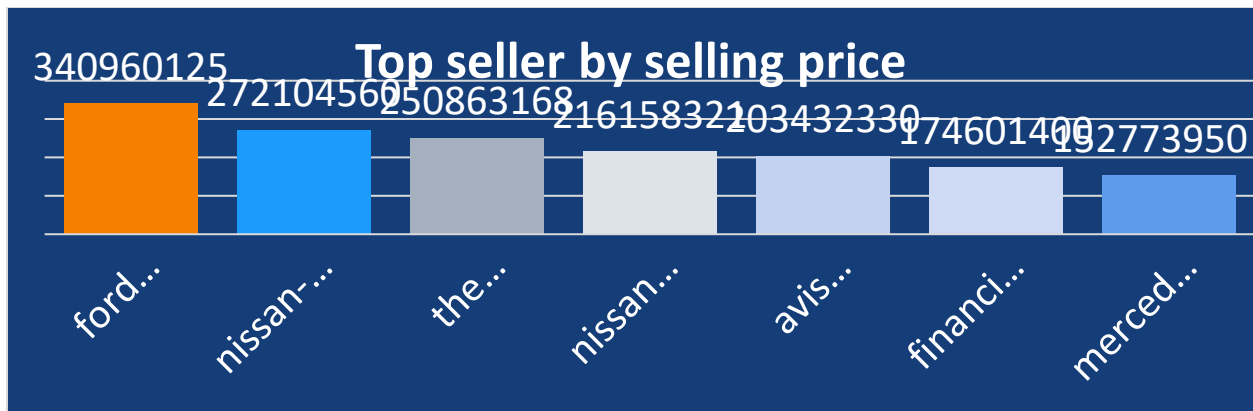
The highest state by revenue is fl with 28%, followed by ca with 26%.



Visualization of the best color of cars by revenue, the best state with the highest revenue is black color

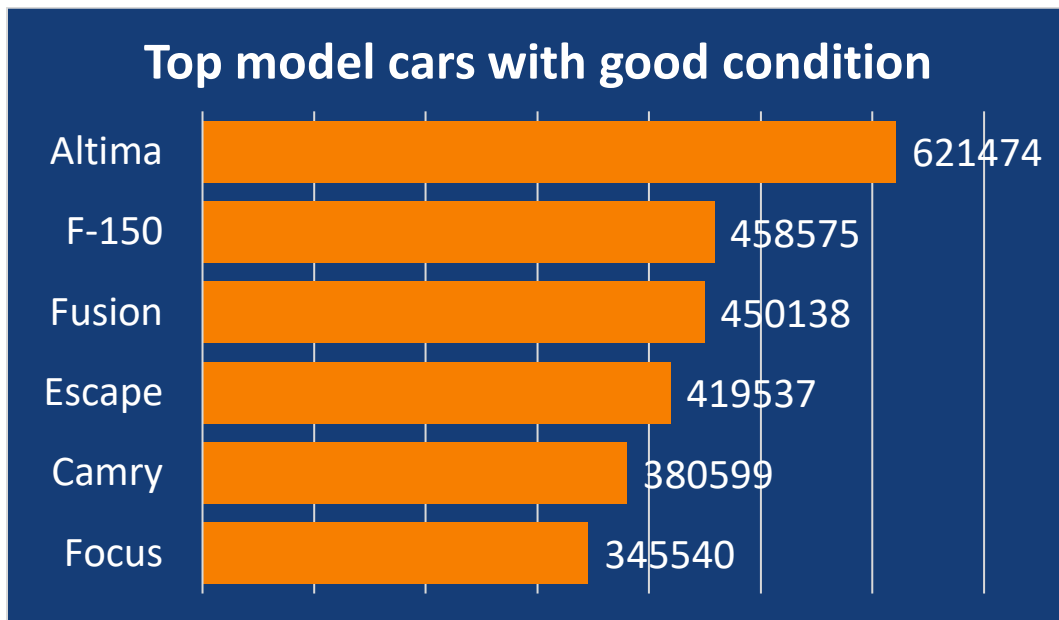


visualization of the Top seller, the Top seller by revenue is Ford with a total sale of \$340960125

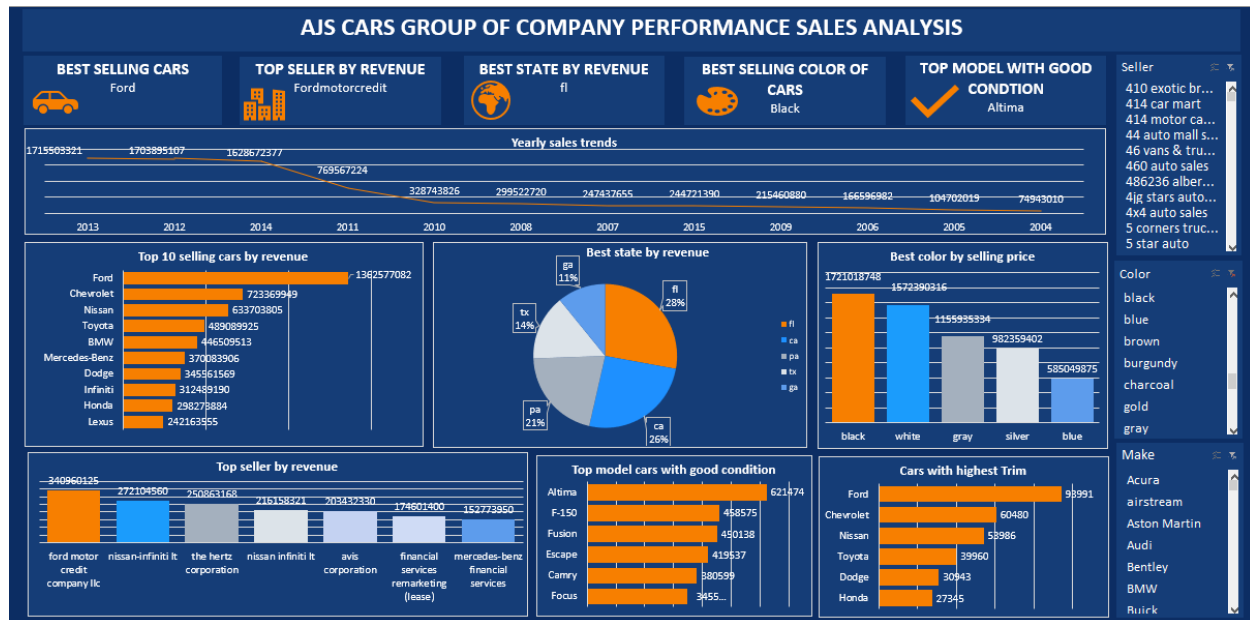


Visualization of the Top model car with good condition

From the charts, the Top model car with good condition is Altima with a total count of 62474



## ANALYTICAL DASHBOARD FOR CAR SALES ANALYSIS



## Observations

### Top Performing Brands:

The top 10 brands based on performance are Ford, Chevrolet, Nissan, Toyota, BMW, Mercedes-Benz, Dodge, Infiniti, Honda, and Lexus.

**Ford** dominates multiple categories, indicating strong market performance and high customer loyalty.

### Customer Color Preferences:

Neutral colors such as **black**, **white**, and **gray** are the most preferred by customers.

This suggests that these colors significantly influence purchasing decisions and should be prioritized in stock planning and marketing.

### **Best Performing States:**

States like **Florida (FL)**, **California (CA)**, and **Pennsylvania (PA)** show the highest sales.

The high performed regions present opportunities for increased investment, while underperforming states should be further analyzed for improvement.

### **Top Seller Analysis:**

**Ford Motor Credit Company LLC** is the leading seller, likely due to its integration with financing services.

The company should investigate and replicate their approach across other selling partners to boost overall revenue.

### **High Trim Level Sales:**

Brands like **Ford**, **Chevrolet**, and **Nissan** offer high trim-level vehicles that perform well in revenue.

This indicates that customers value premium features, not just base models.

### **Yearly Sales Trend:**

The highest revenue was recorded in **2013**, with a notable decline observed from 2012 to 2004.

This trend suggests a need to revisit sales strategies and understand past market shifts.

### **Top Performing Models:**

Models such as **Altima**, **F-150**, **Fusion**, **Escape**, **Camry**, and **Focus** lead in revenue.

Most of these are from high-performing brands like **Ford** and **Nissan**, supporting their dominance.

## Recommendations

### Promote High-Performing Brands:

Invest in advertising and promotions for top-selling brands like **Ford**, particularly in high-performing states (e.g., FL, CA).

### Expand Premium Trim Offerings:

Introduce and promote more **premium trims**, as they are highly demanded and profitable (e.g., Ford F-150, Fusion).

### Optimize Inventory by Color:

Maintain higher inventory levels of **black**, **white**, and **gray** vehicles. Consider special offers or bundles around these top-performing colors to increase turnover.

### Focus on High-Potential Regions:

Allocate more marketing resources to strong-performing states (FL, CA, PA).

Investigate lower-performing regions like **Texas (TX)** and **Georgia (GA)** to identify barriers and growth opportunities.

### Leverage Top-Performing Models:

Prioritize the resale and availability of high-demand used models like **Altima** and **F-150** in good condition to boost sales.

### Encourage Strategic Partnerships:

Consider developing partnerships similar to **Ford Motor Credit**, which could support financing options and increase accessibility for buyers.

### Use Condition and Trim Scores as Selling Points:

Continue to monitor and promote models with high **condition ratings** and **trim levels**, as these correlate with higher revenue.

## **Conclusion**

The car sales analysis conducted using Microsoft Excel provides valuable insights into the performance of various car brands, models, regions, and seller strategies. The analysis reveals that Ford is the leading brand in terms of revenue and customer loyalty, while neutral vehicle colors like black and white are the most preferred by customers. High-performing regions such as Florida, California, and Pennsylvania represent strong market opportunities, while underperforming states highlight areas for further strategic development.

The data also shows that vehicles with higher trim levels and in good condition significantly contribute to revenue, indicating a customer preference for quality and premium features. The success of sellers like Ford Motor Credit emphasizes the importance of integrated financing and strong sales partnerships.

Generally, the findings of this analysis should guide the company in making informed decisions regarding inventory management, regional marketing strategies, and product offerings. By focusing on high-performing segments and addressing areas of weakness, the company can improve its competitiveness, increase sales performance, and drive sustainable growth.