



Car Sales Performance & Customer Insights Analysis

Portfolio Project Report

Tools Used: Excel • SQL • Power BI

Project Overview

The Challenge

Analyzing mid-sized automotive dealership performance using three integrated datasets: Cars, Customers, and Sales.

End-to-end analytics: Excel for cleaning, SQL for querying, Power BI for visualization.

The Goal

Understand sales drivers, identify key customer segments, and determine top revenue-generating models.



Project Objectives

01

Clean & Prepare

Ensure datasets are accurate and analysis-ready

02

Explore Trends

Analyze sales performance and revenue drivers

03

Profile Customers

Segment by demographics and purchase behavior

04

Evaluate Inventory

Assess stock status and sales impact

05

Build Dashboard

Create actionable Power BI visualizations

Data Sources



Cars.csv

- Car ID, brand, model, year
- Engine type, transmission
- Price, quantity in stock
- Status (available, reserved, sold)



Customers.csv

- Customer ID, name, gender
- Age, phone, email
- City



Sales.csv

- Sale ID, sale date
- Customer ID, car ID
- Quantity, sale price
- Salesperson, payment method

Datasets sourced from Kaggle under Apache 2.0 License



Data Cleaning Process



Remove Duplicates

Ensured unique entries across all three datasets

Correct Data Types

Converted prices to numeric, dates to proper format, age to integer

Validate Relationships

Verified Car_ID and Customer_ID integrity across tables

Result: Clean, consistent, analysis-ready dataset

SQL Analysis: Key Queries

Revenue Drivers

- Top car models by total revenue
- Average sale price per model
- Month-by-month revenue trends

A screenshot of a SQL query results window titled 'Results'. The table has four columns: Brand, Model, Total_Revenue, and Row Number. The data shows the top 10 car models by total revenue, with Toyota Camry at the top.

	Brand	Model	Total_Revenue
1	Toyota	Camry	73576411.56
2	Nissan	Sunny	73414180.79
3	Tesla	Model X	73390866.72
4	Mercedes	GLA	66568133.19
5	Nissan	Qashqai	63807105.2
6	Hyundai	Tucson	61560202.44
7	Mercedes	E-Class	59556098.49
8	BMW	5 Series	56422094.52
9	Kia	Cerato	55991582.36
10	BMW	3 Series	55576973.4

Query executed successfully. | LAPTOP-6G1MFRVQ (16.0 RTM) | LAPTOP-6G1MFRVQ\DUNCAN... | Cars_marketing | 00:00:00 | 21 rows

Customer Behavior

- Revenue by age group
- Preferred payment methods
- Geographic sales distribution

A screenshot of a SQL query results window titled 'Results'. The table has two columns: Payment_Method and Number_of_Sales. The data shows the top three payment methods used for sales.

	Payment_Method	Number_of_Sales
1	Installment	3395
2	Cash	3354
3	Credit	3251

Query executed successfully. | LAPTOP-6G1MFRVQ (16.0 RTM) | LAPTOP-6G1MFRVQ\DUNCAN... | Cars_marketing | 00:00:07 | 3 rows

Power BI Dashboard

Sales Performance

Revenue by salesperson, units by brand, payment methods, engine type analysis

Customer Insights

Revenue by age group, city mapping, gender spending, demographic slicers

Inventory Analysis

Stock by brand, slow-moving inventory identification

CARS SALE

R1,15bn

Total Revenue

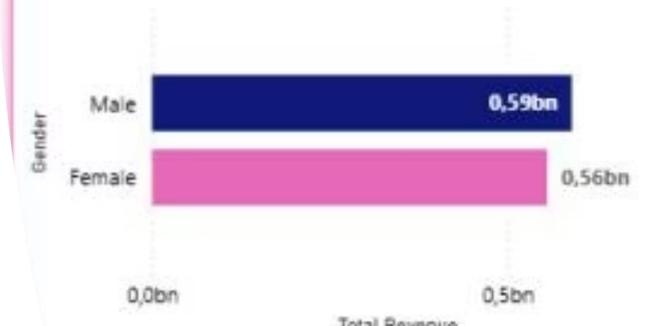
2K

Number Of Customers

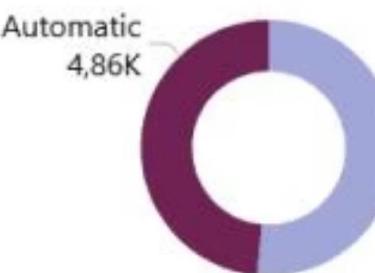
20

Number Of

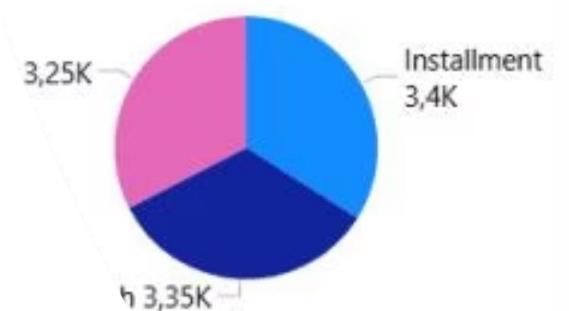
Total Revenue by Gender



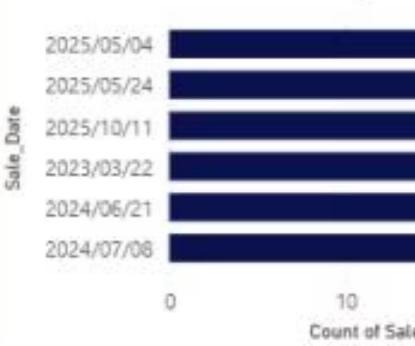
Sales by Transmission



Number of sales by Payment Method



Number of Sales by Sale Date



Key Findings



Top Performers

Tesla and Mercedes lead revenue, driven by Model X and GLA sales



Seasonal Trends

Sales peak July-October, showing clear seasonal demand patterns



Customer Profile

Customers over 51 are largest segment, contributing most revenue



Payment Preference

Installment plans dominate, highlighting importance of financing



Inventory Issues

High stock but low sales on certain models indicates over-ordering



Sales Team

Top salespeople consistently outperform, driving disproportionate revenue



Technical Toolkit

- 1 Excel
Data cleaning, labeling, validation, preparation
- 2 SQL
Analytical queries, exploration, integrity checks
- 3 Power BI
Dashboard building, modeling, DAX measures, storytelling

Demonstrated Capabilities



Data Transformation

Clean and transform complex datasets efficiently



SQL Expertise

Write efficient analytical queries



Visualization

Build interactive Power BI dashboards



Communication

Communicate insights clearly and visually



Business Acumen

Combine business understanding with technical skill

End-to-end analytical capabilities for data analytics, business intelligence, and data science roles