E-COMMERCE SALES PERFORMANCE DASHBOARD – OLIST BRAZIL

2. Project Objective

The goal of this project is to design an interactive Power BI dashboard that analyzes Olist's e-commerce sales performance.

It enables business teams to monitor key performance indicators (KPIs) such as sales, profit, orders, delivery efficiency, product performance, and customer satisfaction to support data-driven business decisions in marketing, operations, and strategy.

3. Business Problem / Opportunity

Olist's e-commerce platform generates large volumes of transactional and customer data but lacks a consolidated view for performance tracking.

Managers struggle to identify:

- Best-selling and most profitable products and categories
- Underperforming regions
- Delays in delivery and customer satisfaction issues

By building this dashboard, Olist can:

- Visualize sales trends, profitability, and customer behavior
- Track delivery performance and seller reliability
- Improve operational efficiency and strategic decision-making

4. Target Audience

Stakeholder	Purpose
Executives / Management	Review overall performance, profitability, and customer growth.
Sales Team	Track sales trends, category performance, and seller activity.
Marketing Team	Understand customer behavior, satisfaction, and geographic hotspots.
Operations Team	Monitor delivery speed, on-time rates, and seller performance.

5. Scope

Included

- Data assessment and cleaning of 9 CSV files.
- Creation of a Power BI data model and relationships.
- A 4-page dashboard visualizing key KPIs (Executive, Sales, Marketing, Operations).
- Insights by time, category, geography, and seller.

Excluded

- Predictive analytics or forecasting.

- Real-time or API-based data refresh.

6. Data Sources

- **Dataset:** Olist Brazilian E-Commerce Public Dataset
- **Source:** Kaggle – Brazilian E-Commerce Dataset by Olist
- **Files Included:**
    - olist_orders_dataset.csv
    - olist_order_items_dataset.csv
    - olist_order_payments_dataset.csv
    - olist_order_reviews_dataset.csv
    - olist_customers_dataset.csv
    - olist_sellers_dataset.csv
    - olist_products_dataset.csv
    - olist_geolocation_dataset.csv
    - product_category_name_translation.csv

7. Key Metrics / KPIs

KPI	Definition	Final DAX Formula / Logic
Total Sales	Total revenue generated from items sold.	SUM(order_items[price])
Total Freight Cost	Total cost of shipping paid by customers.	SUM(order_items[freight_value])
Total Profit	Total sales minus total freight cost.	[Total Sales] - [Total Freight Cost]
Profit Margin %	Total profit as a percentage of total sales.	DIVIDE([Total Profit], [Total Sales])
Total Orders	Total count of *validated delivered* orders.	CALCULATE(DISTINCTCOUNT(orders[order_id]), orders[order_status] = "delivered", NOT ISBLANK(orders[order_delivered_customer_date]))
Total Customers	Total count of unique customers.	DISTINCTCOUNT(customers[customer_unique_id])

Average Order Value	Average revenue per order.	DIVIDE([Total Sales], [Total Orders])
Average Review Score	Mean customer rating (1–5).	AVERAGE(order_reviews[review_score])
Avg. Delivery Days	Average time from purchase to delivery for valid orders.	AVERAGEX(FILTER(orders, ...), DATEDIFF(order_purchase_timestamp, order_delivered_customer_date, DAY))
On-Time Deliveries	Count of valid orders delivered on or before the estimate.	CALCULATE(COUNTROWS(orders), FILTER(orders, orders[order_delivered_customer_date] <= orders[order_estimated_delivery_date] && ...))
On-Time Delivery %	Share of valid deliveries completed on or before the estimate.	DIVIDE([On-Time Deliveries], [Total Validated Deliveries])

8. Deliverables

Day	Deliverable	Description
Day 1	BRD_Submitted.pdf, Dataset Loaded	Dataset selection, loading, and documentation.
Day 2	Column_Assessment.xlsx, cleaned_dataset.csv	Data assessment & cleaning.
Day 3	FRD_Submitted.pdf, Dashboard_Mockup.pptx	Functional design & visual mockup.
Day 4	dashboard.pbix (Draft)	Initial Power BI dashboard build.
Day 5	dashboard_export.pdf, Analysis_Report.pdf, README.md	Final dashboard, insights, and documentation.

9. Timeline / Milestones

Day	Task	Deliverable
Day 1	Load and review Olist dataset.	BRD_Submitted.pdf
Day 2	Clean and assess data.	cleaned_dataset.csv
Day 3	Define functional logic and design mockup.	FRD_Submitted.pdf

Day 4	Develop dashboard and DAX measures.	dashboard.pbix
Day 5	Finalize, export, and write analysis.	Analysis_Report.pdf

10. Notes / Assumptions

Data Assumptions

- The 9 CSVs are accurate and consistent.
- Relationships between tables (e.g., on order_id, customer_id) are reliable.

Business Logic

- **Critical:** All delivery KPIs (On-Time %, Avg. Delivery Days) are filtered to only include orders with an order_status of **"delivered"** AND a non-blank order_delivered_customer_date to ensure accuracy.
- Profit is defined as Total Sales - Total Freight Cost
- Review scores are used as the primary proxy for customer satisfaction.

Scope Limitations

- Analysis period is 2016–2018.
- The dashboard is for historical analysis, not real-time monitoring.

Technical Constraints

- Missing product category names were handled by merging the product_category_name_translation file.