E-COMMERCE BA

P4 E-Commerce BA - Customer & Purchase Analytics for Enhanced Business Growth

A Capstone Project for Associate Data Analysts

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Course/Project: Capstone Project - Data Analysis Training

Agenda

- Objective of the Project
- Data Information & Overview
- General Process: Problem Statement, Research Objective, Data Understanding & Preparation, Report Creation, Conclusion
- Key Findings & Insights
- Recommendations
- Future Scope
- Q&A

Project Objective

- Integrate & apply data analysis knowledge and skills.
- Demonstrate understanding of methodologies & best practices.
- Foster professional development (time management, teamwork, problem-solving).

Business Problem Statement

- Company aims to create a robust customer base.
- Enhance overall customer experience.
- Recommend relevant products.
- Ultimately increase revenue based on available data.

Research Objective

- Generate a comprehensive report to understand customers.
- Explore dataset thoroughly.
- Develop practical and insightful solutions.

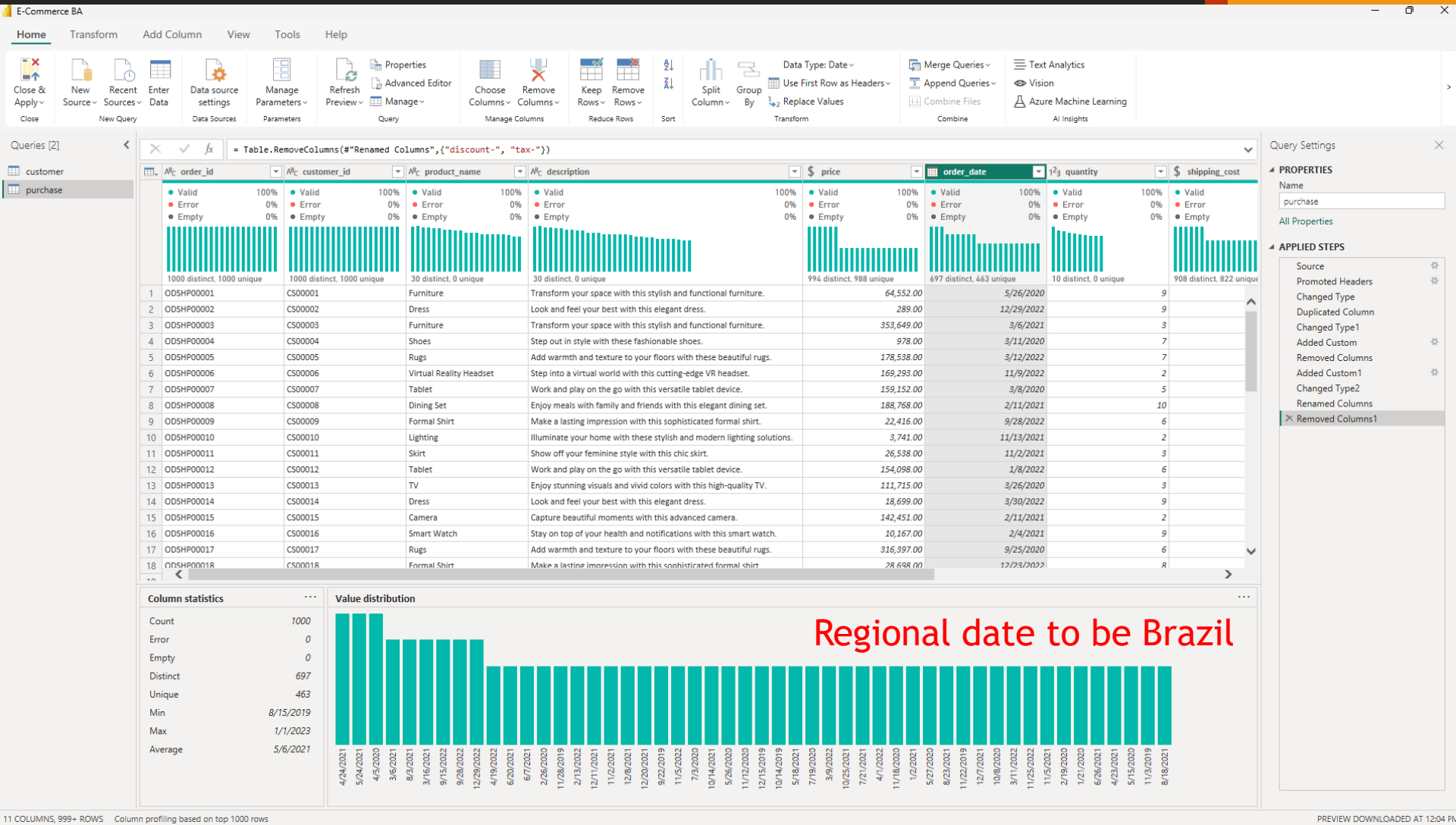
Data Information Overview

- Dataset is a subset from a Shopee, Brazil project.
- Certain columns removed for privacy.
- Contains necessary details: orders, customer demographics, products, segments, quantity, shipping costs.
- All features described in Data_Dictionary.pdf.

Data Understanding & Preparation - The Foundation

- Grasping features & relationships.
- Transforming raw data into clean, usable format.
- Crucial tasks: imputing missing values, correcting data types, deriving new custom columns.

Data Cleaning Process in Detail

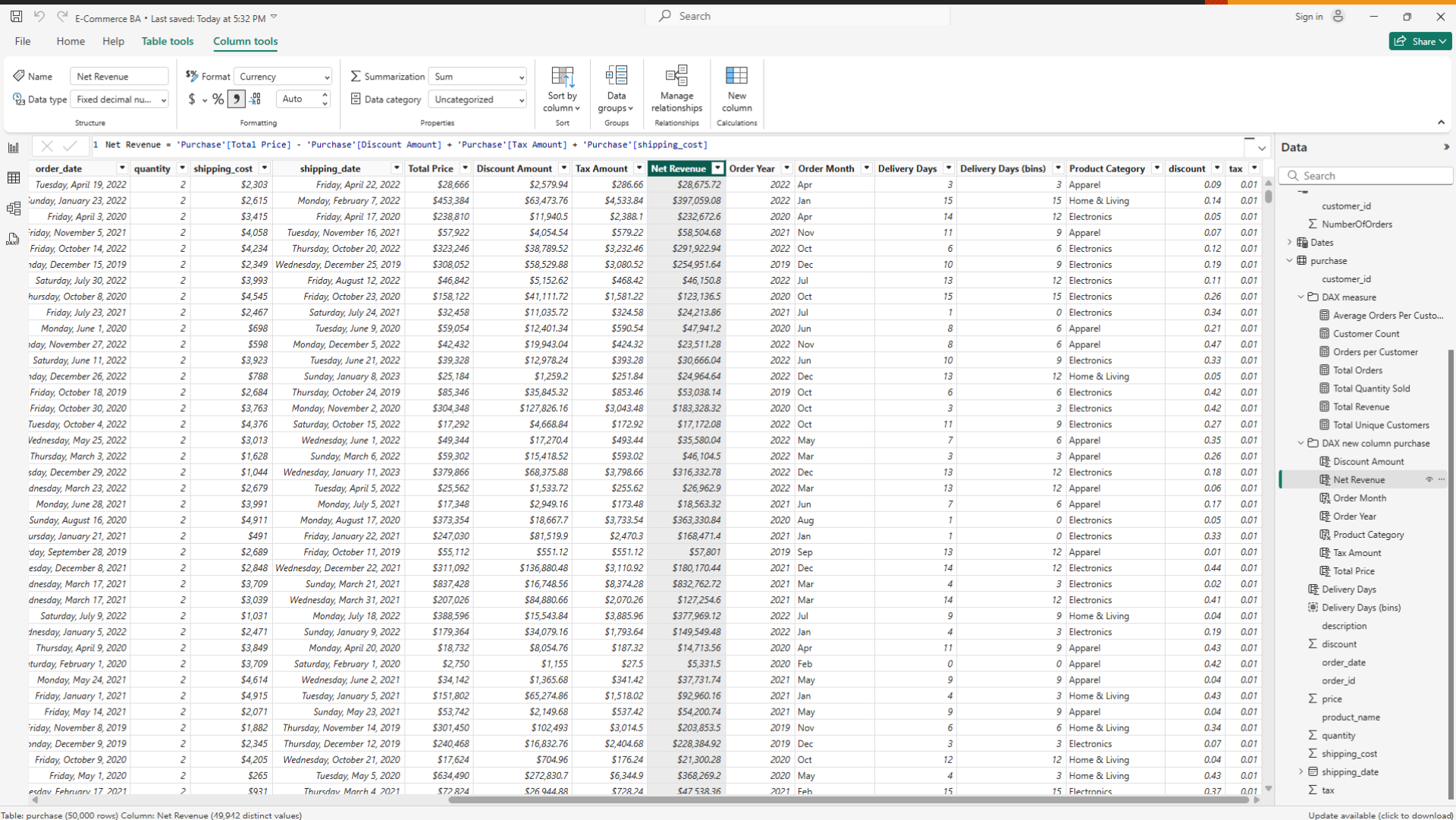


Feature Engineering with DAX

Created new calculated columns & measures for deeper insights.

- Key DAX Measures & Columns:
  - Total Price = Purchase[price] * Purchase[quantity]
  - Discount Amount = Purchase[Total Price] * Purchase[discount]
  - Tax Amount = Purchase[Total Price] * Purchase[tax]
  - Net Revenue (per item) = Purchase[Total Price] - Purchase[Discount Amount] + Purchase[Tax Amount] + Purchase[shipping_cost]
  - Order Year = YEAR('Purchase'[order_date])
  - Order Month = FORMAT('Purchase'[order_date], "MMM")
  - Delivery Days = DATEDIFF('Purchase'[order_date], 'Purchase'[shipping_date], DAY)
  - Age Group and Income Level (for customer segmentation).
  - Product Category (derived from product_name using SWITCH(TRUE(), CONTAINSSTRING())).
  - Total Revenue = SUM(Purchase[Net Revenue])
  - Total Orders = DISTINCTCOUNT(Purchase[order_id])
  - Total Customers = DISTINCTCOUNT(Customer[customer_id])
  - Average Order Value = DIVIDE([Total Revenue], [Total Orders], 0)
  - Total Quantity Sold = SUM(Purchase[quantity])
  - Number of Repeat Customers
  - Average Orders Per Customer

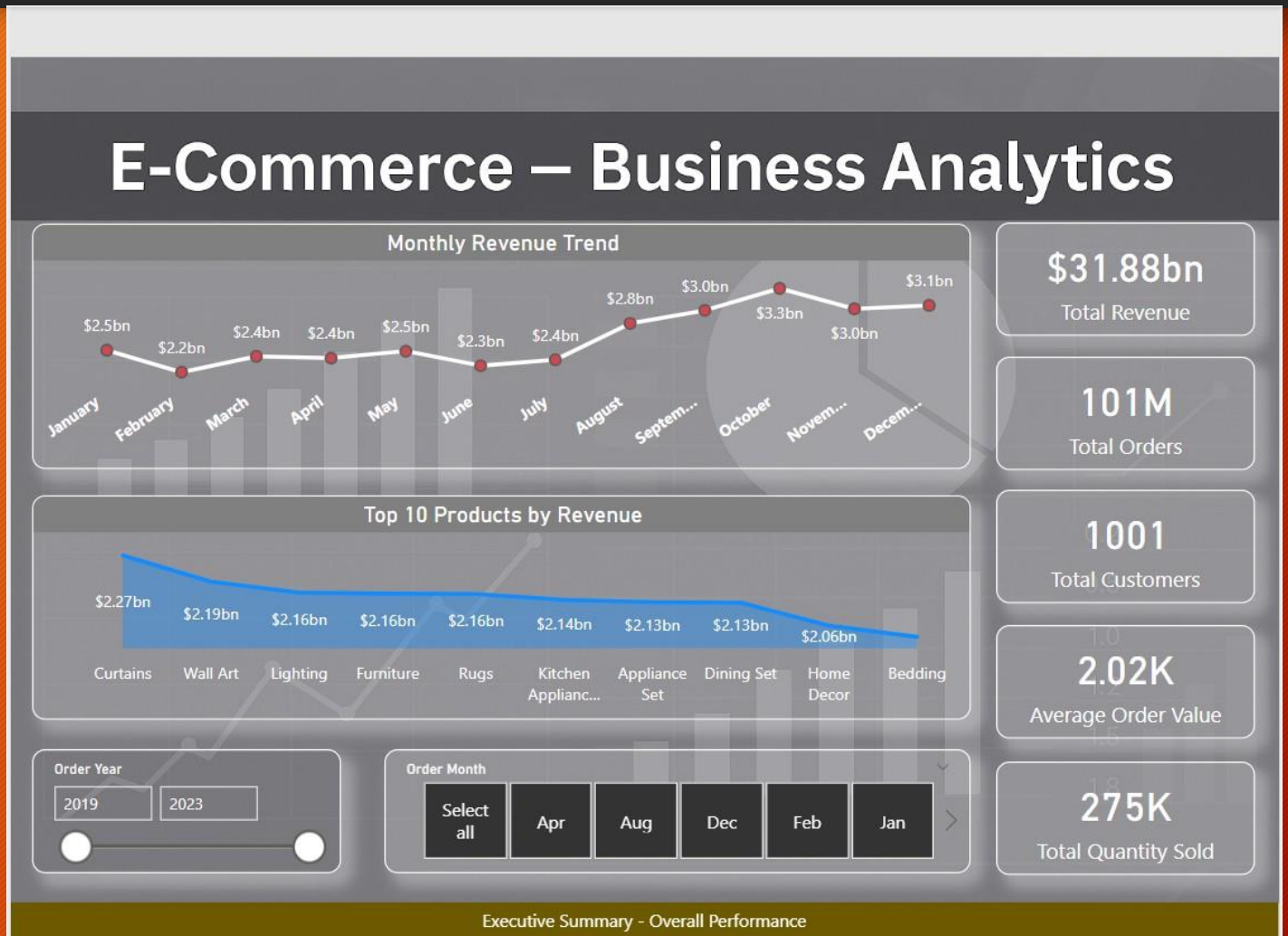
Feature Engineering with DAX



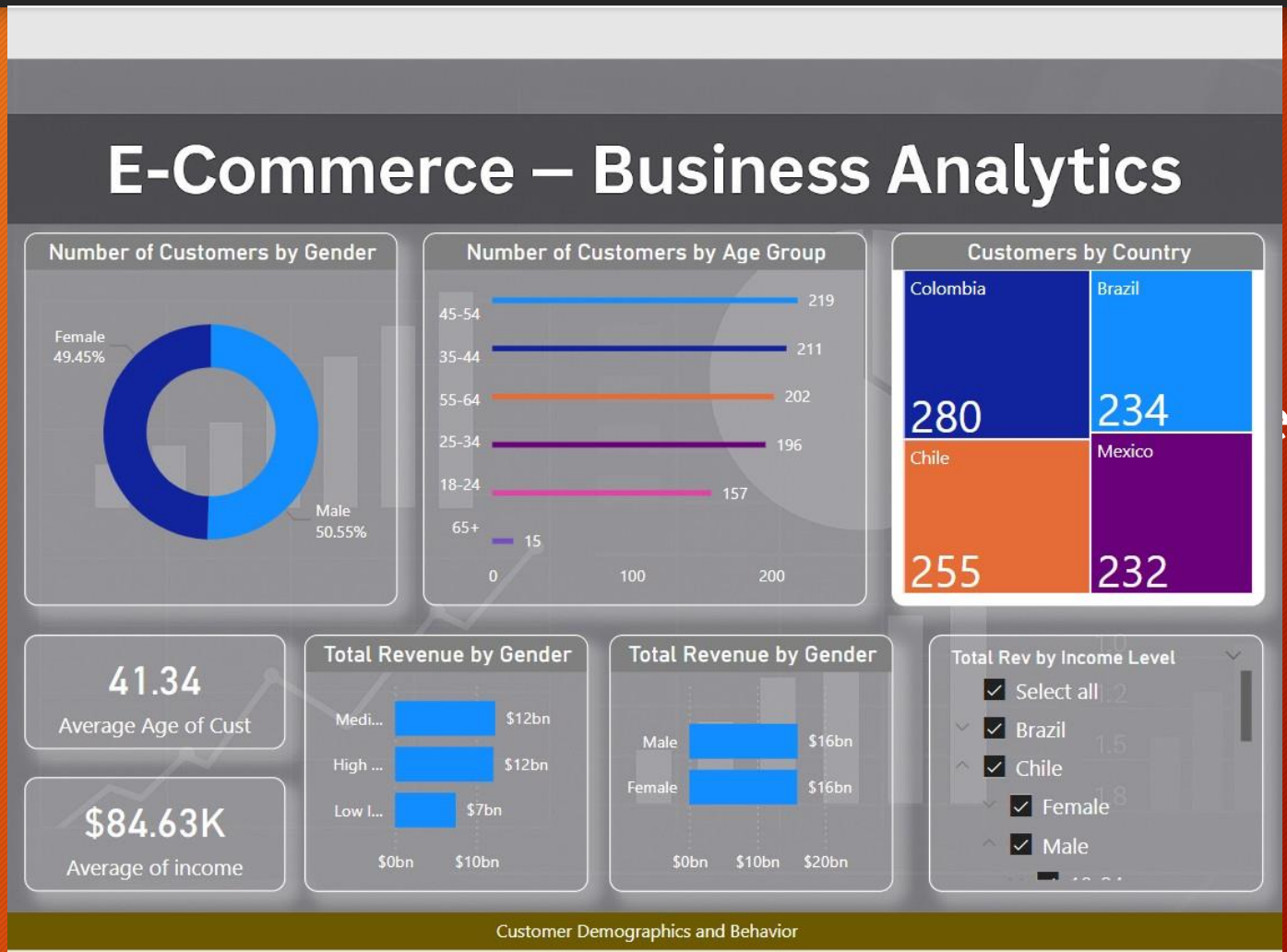
Report Creation & Key Performance Indicators (KPIs)

- Created professional report with clear client findings.
- Included important KPIs for actionable information.
- Focused on intuitive and informative Power BI dashboards.

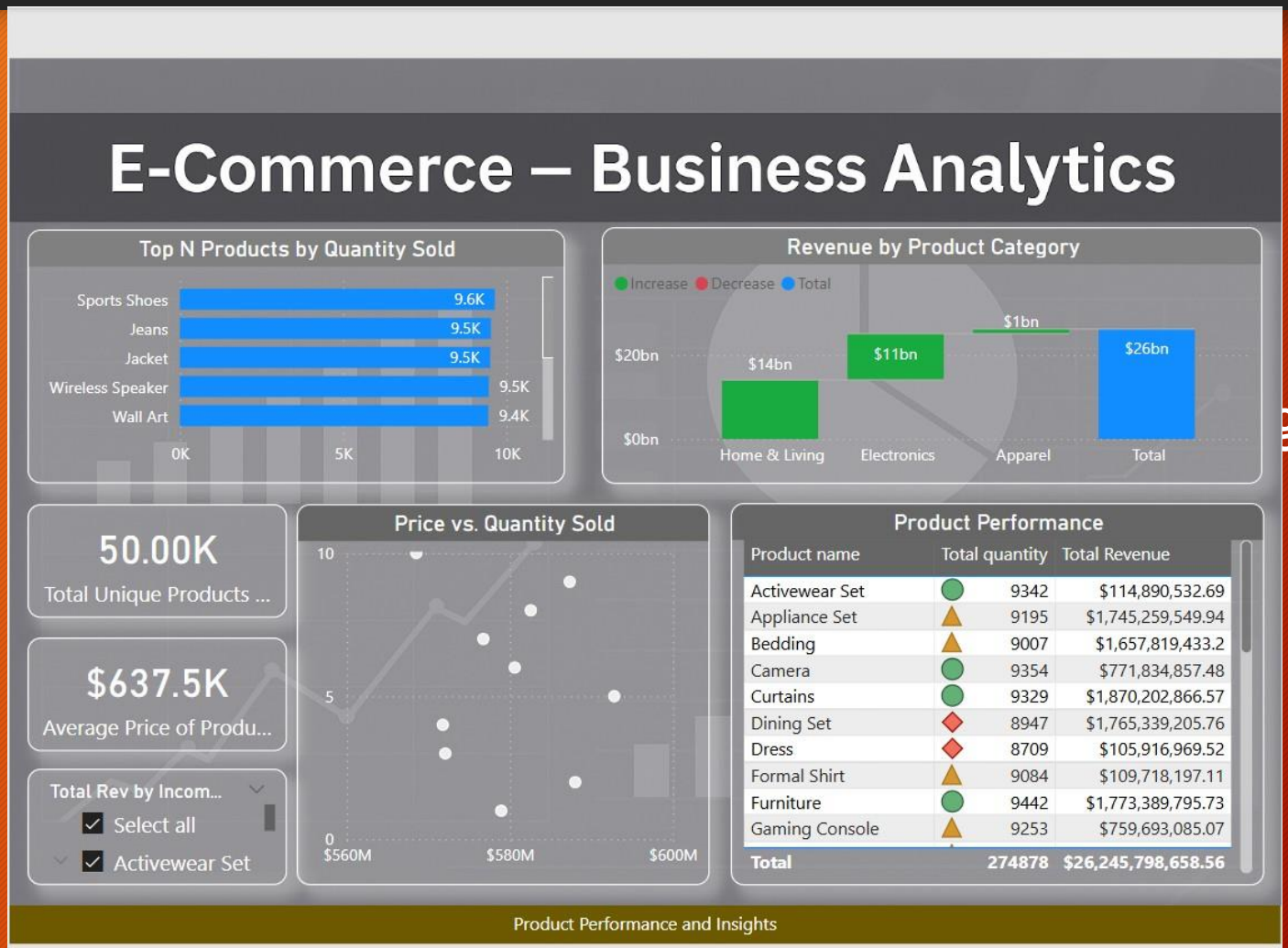
Dashboard 1: Executive Summary - Overall Performance



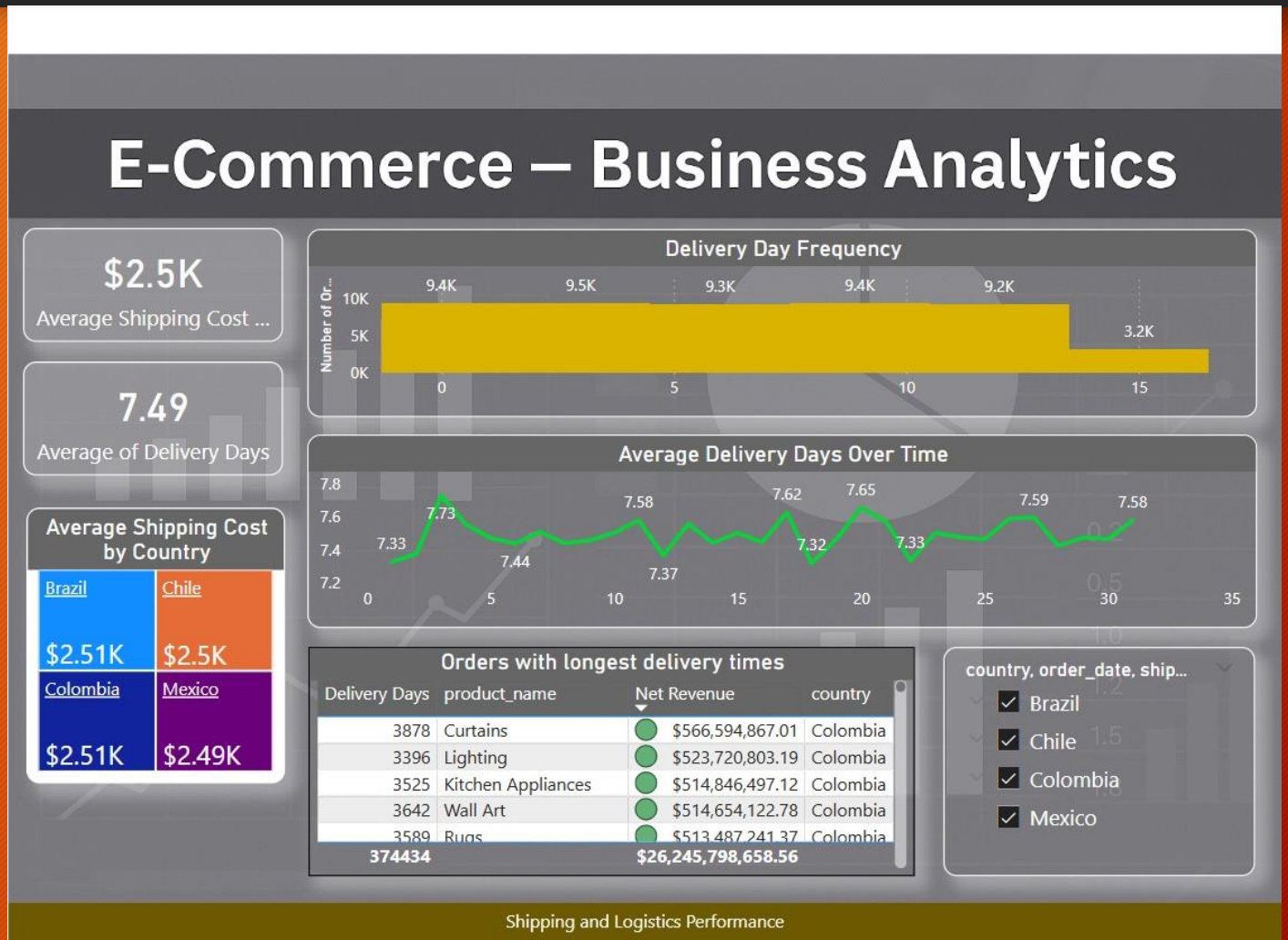
Dashboard 2: Customer Demographics and Behavior



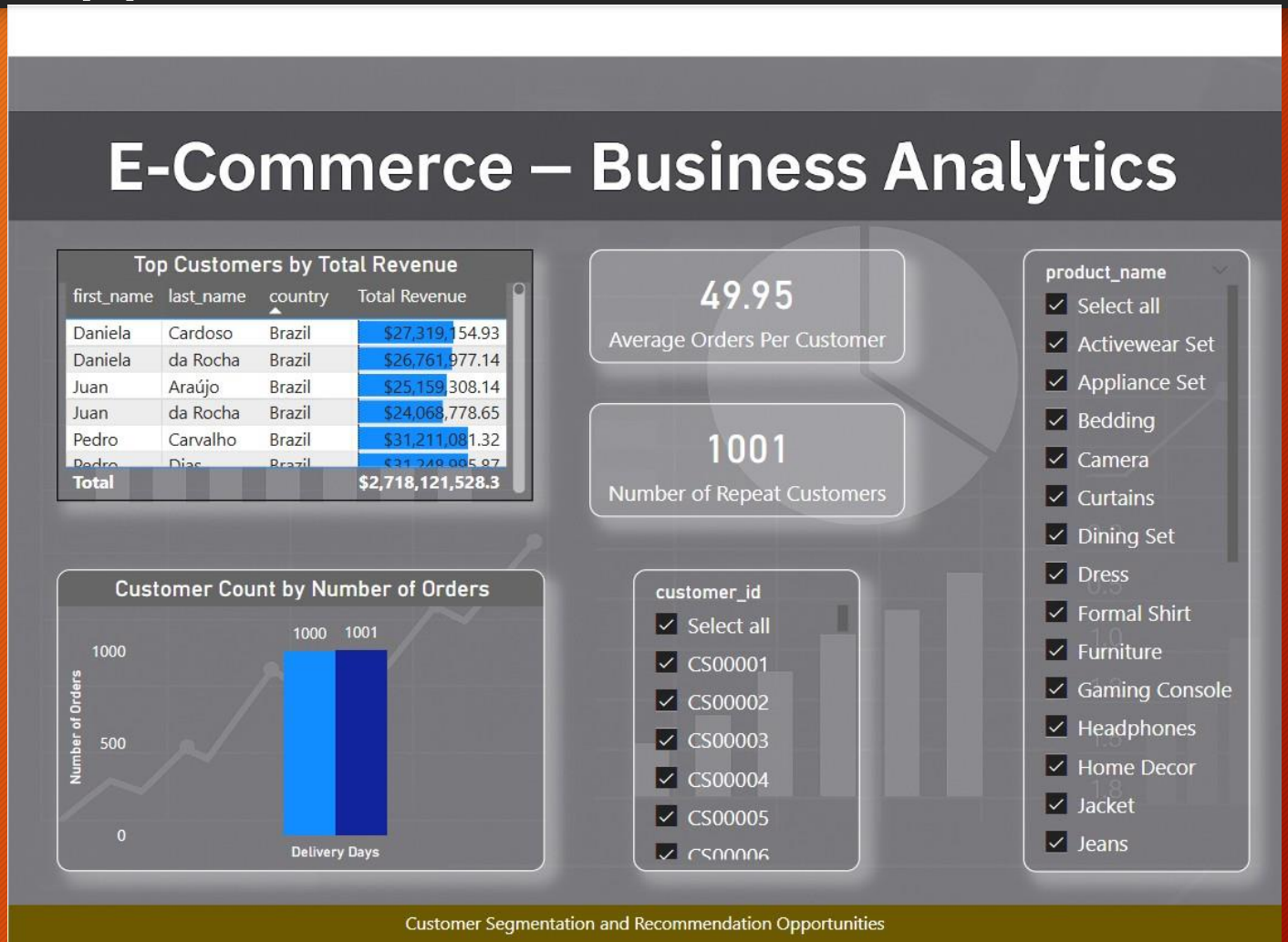
Dashboard 3: Product Performance and Insights



Dashboard 4: Shipping and Logistics Performance



Dashboard 5: Customer Segmentation and Recommendation Opportunities



Conclusion & Key Insights

- Majority customers within [Age Group] and [Income Level] segments (target audience).
- Product X consistently drives highest revenue (focus promotion).
- Noticeable increase in delivery days during [specific period] (investigate logistics).

Recommendations

- Develop targeted marketing campaigns for [Age Group] segment promoting frequently purchased products.
- Investigate supply chain optimizations for [Product X] to ensure consistent availability & reduce shipping costs.
- Implement loyalty program for high-income customers to foster repeat purchases.

Future Scope

- Conduct deeper market basket analysis for product bundling opportunities.
- Implement predictive analytics to forecast demand for specific products.
- Integrate customer feedback data for enhanced customer experience.
- Explore geo-spatial analysis for optimizing shipping routes & inventory.

Questions & Discussion