

# Customer Insights Dashboard

## Problem Statement

The business was facing several key challenges:

- A lack of clarity on customer purchasing patterns, leading to ineffective targeting strategies.
- Inability to segment customers based on key demographics like age, gender, and region.
- Sales inconsistencies across different regions and categories with no proper visibility into the causes.
- Difficulty in identifying high-performing and underperforming products and customer groups.
- Fragmented and unstructured data that made analysis time-consuming and error-prone.

## Tools & Technologies Used

- **Power BI Desktop:** For data modelling, transformation, and visualization.
- **Power Query:** Used to clean, merge, and transform the datasets.
- **DAX (Data Analysis Expressions):** Used to create calculated columns, measures, KPIs, and time intelligence functions.
- **Excel (Source File):** The original data was stored in Excel and then imported into Power BI.

# Dashboard Overview

## A. Customer Demographics

This section provides a breakdown of who the customers are, enabling segmentation and better targeting strategies.

Key Visuals:

- Pie chart: Distribution by gender.
- Bar chart: Segmentation by age groups (e.g., 18–25, 26–35, etc.).
- Card visuals: Total number of unique customers, average age, and churned customers.

## B. Sales & Profit Performance

This section highlights key financial performance metrics over time and across categories.

Key Visuals:

- Line chart: Monthly or quarterly sales trends, profit trends.
- KPI cards: Total Revenue, Average Sales, and Total Transactions.
- Stacked column chart: Revenue and profit across product categories, payment method, and age group.

## C. Return Product Dashboard

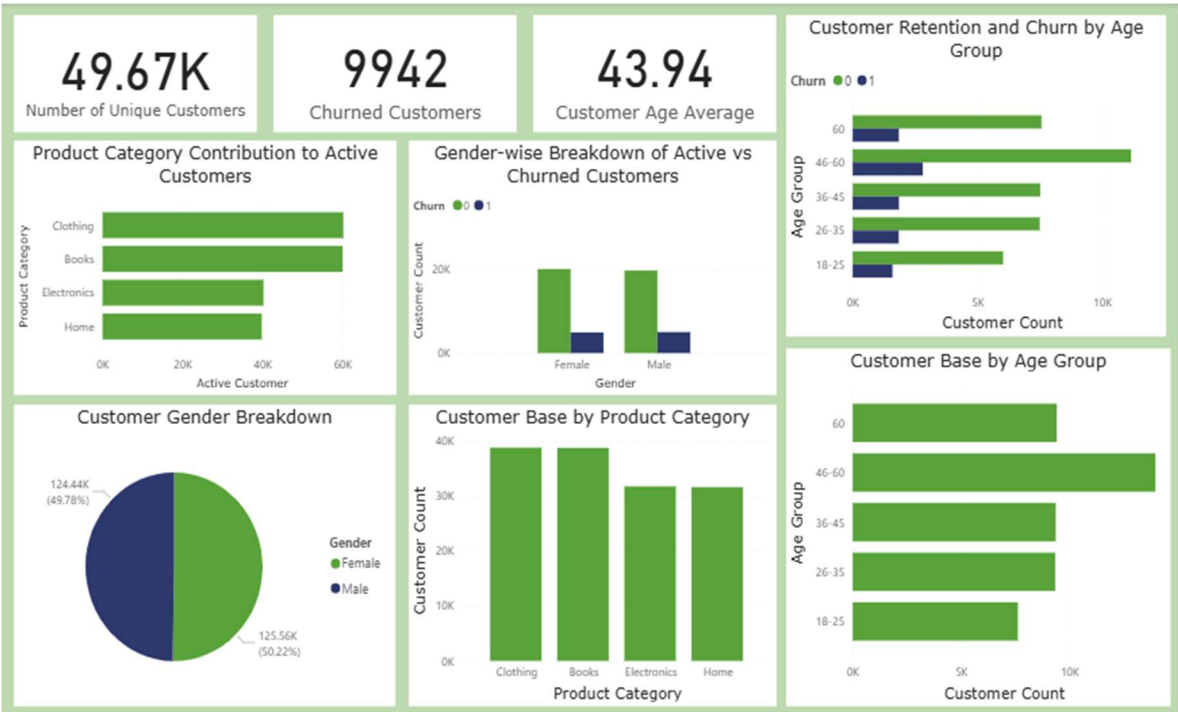
This specialized dashboard focuses on returned products, giving visibility into product return rates, reasons, and trends. It supports better inventory and quality control decisions.

Key Features:

- Return Volume Overview: Total number of returns with breakdown by product.
- Return Rate by Category: Charts showing which product categories have the highest return rates.
- Return Trends Over Time: Visual timeline of returns across weeks or months.

# Dashboards

## 1. Customer Insights



## 2. Sales Performance



### 3. Return Product Dashboard



## Project Outcome

- A fully interactive and dynamic Power BI dashboard was developed that provides deep insights into customer and sales data.
- Stakeholders can now easily identify customer trends, segment customers, and track performance across different dimensions.
- The company can use these insights to improve marketing campaigns, optimize inventory, and boost profitability.
- The project laid the foundation for data-driven decision making across departments like sales, marketing, and customer service.

# Problems Faced

## 1. **Data Inconsistency & Formatting Issues**

The initial datasets had missing fields, inconsistent column naming, and mixed data types, which required thorough data cleaning using Power Query.

## 2. **Performance Optimization**

The dashboard started to slow down as more visuals and DAX measures were added. Optimizing measures and reducing the number of visuals helped improve performance.

## 3. **Segmentation Logic**

Implementing the RFM model and other customer segmentation logic using DAX required trial and error to get correct results.

# Key Learnings

- Hands-on experience in using **Power BI for data storytelling** and business analysis.
- Mastered the use of **Power Query** for complex data transformations.
- Gained expertise in **DAX functions** for KPIs, segmentation, and dynamic visual filtering.
- Understood the importance of a clean **data model** and how relationships affect report behaviour.
- Learned techniques to **optimize dashboard performance** and user experience.