E-commerce Return Rate Reduction Analysis

Introduction
This project analyzes e-commerce order data to understand the factors driving product returns. The aim is to provide insights that help reduce return rates, optimize supply chain efficiency, and enhance customer satisfaction.

Abstract
The dataset includes order transactions with details such as product category, payment method, shipping method, customer demographics, and return reasons. Analysis focuses on identifying patterns in returns across categories, user groups, and time periods to highlight major drivers of returns.

Tools Used
- Power BI for data visualization and dashboard creation
- Excel/Python for initial data cleaning and preprocessing

Steps Involved in Building the Project
1. Data cleaning and preprocessing (handling null values, formatting dates, removing inconsistencies)
2. Importing dataset into Power BI
3. Creating calculated fields and measures (e.g., return %)
4. Designing visuals such as bar charts, line charts, pie charts, and KPIs
5. Adding slicers for interactivity (Year, Product Category, Shipping Method)

Conclusion
The dashboard highlights that returns are more common in certain categories such as clothing and home products. Key reasons include defective items, wrong product shipments, and mismatched expectations. Younger customers tend to return products more often, while next-day shipping shows a slightly higher return rate. These insights can help e-commerce companies adjust logistics, improve quality checks, and refine marketing strategies to minimize returns and improve customer satisfaction.

Final Dashboard