

Bike Store Sales Analysis – Project Report

Project Overview

This project involves building a professional Excel dashboard from scratch using raw sales data from a fictional bike store. The dashboard is designed to enable stakeholders to make informed business decisions based on key performance metrics.

The goal is to demonstrate end-to-end data analysis skills, including:

- Data cleaning
- Modeling
- Visualization
- Insight generation

1. Data Preparation

Tools Used

- Excel Power Query for cleaning and transforming data.
- Excel Data Model (Power Pivot) to create relationships and enable DAX calculations.

Key Steps:

- Removed duplicates and handled missing values.
- Standardized date formats, customer age ranges, product categories, and pricing.
- Joined tables such as Sales, Products, Customers, and Territories.
- Created calculated columns (e.g., age groups, profit, price category).

2. Business Questions Answered

- Which products and customers generate the most profit?
- What is the impact of product pricing on profit?

- How do customer demographics (age, gender) affect sales?
- What are the most profitable sales regions?
- How does performance vary across time (years, months, weekdays, quarters)?
- How do product colors or categories affect revenue?

3. Dashboard Features

Dashboard 1: Product, Customer, and Region Insights

- Top 5 Products & Customers by Profit with comparison to others.
- Product Color Analysis: Black and Silver perform best.
- Product Pricing Analysis: Products priced above \$150 drive 94% of profits.
- Customer Age Group: Customers aged 50+ are the most profitable.
- Gender Analysis: Sales are nearly evenly split between male and female customers.
- Geo Heatmap: Australia and the United States contribute over 60% of total profit.
- Inventory Analysis: Available, sold, and unsold product overview.

Dashboard 2: Time-Based Analysis

- KPI Cards*: Total Revenue, Profit, COGS, Margin, Transactions, and Quantity.
- Year Filters (2005–2008) with dynamic chart updates.
- Monthly Trends: Profit trends by month; May and June are peak months.
- Weekday vs. Weekend Profit: Weekdays account for nearly 72% of profit.
- Quarterly Profit Breakdown: Q2 is the strongest quarter.
- Toggle Between KPIs: Use radio buttons to switch between Profit, Revenue, and Transactions.

Design & UX

- Navigation: Interactive buttons allow users to switch between dashboards.
- Icons and Color Coding: Enhance readability and UX.

- Interactive Filters: Slicers for year, country, and metric type.
- Professional Layout: Clear sections, logical grouping, and color scheme for data storytelling.

Key Business Insights

Insight | Value

Expensive Products (> \$150) | 94.38% of profit

Customers aged 50+ | 38.89% of total profit

Weekdays vs. Weekends | 71.91% of profit from weekdays

Top 2 countries (Australia + US) | 60.1% of profit

Most profitable product color | Black (\$16.73M)

Tools & Skills Demonstrated

- Excel (Power Query, Data Model, Pivot Tables)
- Data Cleaning & Preparation
- Dashboard Design
- Interactive Elements (slicers, buttons)
- DAX basics (Calculated columns/measures)
- Business Intelligence & Insight Communication

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