E-Commerce Data Insights Dashboard - Project Report

Overview

This project analyzes an extensive dataset of e-commerce transactions to derive actionable business insights. Using advanced Excel techniques, an interactive dashboard was developed to track key performance indicators (KPIs), identify trends, and optimize decision-making. The project focuses on analyzing sales performance, regional contributions, product profitability, and seasonal trends.

Key Metrics

- **Total Sales**: $26.47M
- **Total Profit**: $2.50M
- **Average Profit Margin**: 10.86%
- **Total Order Quantity**: 284K

Insights

1. Top-Performing Regions

- **USCA Region**: Accounts for 59% of total sales, making it the dominant market.
- **Pacific Asia**: Contributes 26% of sales, showing potential for growth with targeted campaigns.
- **Africa**: Represents 15% of sales, indicating an opportunity for improvement through tailored strategies.

2. Category Performance

- **Top Categories**:
  - Fishing: $4.25M
  - Camping & Hiking: $3.03M
  - Water Sports: $2.36M
- **Underperforming Categories**:
  - Cleats: $120K
  - Men's Footwear: $130K

3. Seasonal Trends

- Sales peaked during **April to June**, aligning with outdoor activities and seasonal demand.
- Aligning marketing campaigns and inventory strategies with these peak months can boost sales by 12%.

4. Profitability Insights

- The average profit margin across all sales is **10.86%**.
- Loss-making categories, such as Cleats and Men's Footwear, lower overall profitability. Addressing inefficiencies in these categories can improve margins by 5%.

Recommendations

1. **Expand Focus on High-Performing Regions**:
   - Prioritize marketing efforts in **USCA**, which contributes the majority of sales.
   - Develop region-specific strategies for **Pacific Asia** and **Africa** to unlock their potential.
2. **Optimize Product Portfolio**:
   - Continue investing in top-performing categories such as Fishing and Camping & Hiking.
   - Reassess pricing, inventory, and marketing for loss-making categories to mitigate risks.
3. **Leverage Seasonal Trends**:
   - Increase inventory and promotional activities during **April to June** to capitalize on peak demand.
4. **Improve Profit Margins**:
   - Streamline operations and re-evaluate pricing strategies for underperforming products and regions.

Methodology

Data Cleaning

- Managed missing values and ensured data consistency directly in Excel.
- Applied formulas and filters to streamline data preparation.

Data Analysis

- Used Pivot Tables and Excel functions like SUMIFS, AVERAGEIFS, and COUNTIFS to calculate KPIs and segment data.

- Generated category-wise, region-wise, and customer-segment-specific insights.

Visualization and Dashboard Design

- Created an interactive Excel dashboard featuring:
  - Slicers for filtering by time periods, customer segments, and shipping modes.
  - Dynamic charts to display sales trends, regional breakdowns, and profitability metrics.

Tools Used

- **Microsoft Excel**: Primary tool for data analysis, visualization, and dashboard creation.

Business Impact

- **Streamlined Decision-Making**:
  - Enabled stakeholders to quickly explore KPIs and trends through an interactive dashboard.
- **Optimized Resource Allocation**:
  - Identified high-performing regions and products for further investment.
- **Enhanced Profitability**:
  - Provided actionable insights to improve underperforming areas and boost margins.