AdventureWorks Sales Insight- Maven Analytics Project

TABLE OF CONTENTS

OBJECTIVES

01

02

KEY PERFORMANCE INDICATORS

DATA MODEL

03

04

KEY INSIGTS & TAKEAWAYS



OBJECTIVES OF THE PROJECT

PROJECT DETAILS

THE SITUATION

You've just been hired as a Business Intelligence Analyst by **AdventureWorks***, a global manufacturing company that produces cycling equipment and accessories

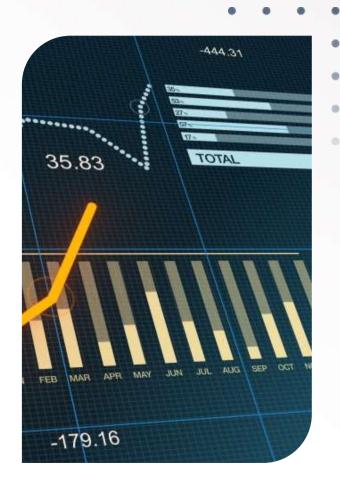
THE GOAL

The management team needs a way to **track KPIs** (*sales, revenue, profit, returns*), **compare regional performance**, **analyze product level trends**, and **identify high-value customers**. All you've been given is a **folder of raw csv files**, which contain information about transactions, returns, products, customers, and sales territories.

OBJECTIVE

Use Power BI Desktop to:

- Connect and transform the raw data
- Build a relational data model
- Create calculated columns and measures with DAX
- Design an interactive dashboard to visualize the data



KEY PERFORMANCE INDICATORS

KPI'S USED & DEFINITION

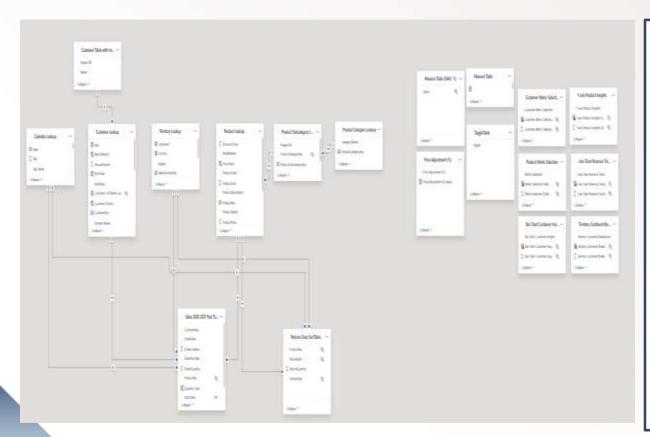
Return Rate Revenue Profit Orders \$24.9M \$10.5M 25.2K 2.2% CM: \$1,83M vs.PM: \$1,77M A+1.2% CM: \$771.6K.vs PM: \$750.8K A+2.8% CM: 2.1K vs PM: 2.2K ▼-0.5% CM: 2.0% vs PM: 2.1% W Less returns **Unique Customers** Customer Retention % Revenue per Customer Orders 17.4K 25.2K \$1.4K 33.63%

KPI Name	Definition	DAX Calculation
Revenue	The total dollar amount of all recorded sales transactions between 2020 and 2022. It reflects the gross inflow before deducting any costs, discounts, or returns.	Total Revenue = SUMX(
Profit	The total revenue minus the cost of goods sold (COGS), e.g. manufacturing and operational expenses. Measures overall business profitability	Total Profit = [Total Revenue] - [Total Cost]
Orders	The total number of individual sales orders completed this tracks sales volume and demand.	Total Orders = DISTINCTCOUNT('Sales 2020-2021 Fact Table*(OrderNumber))
Return Rate	The percentage of total orders that were returned helps assess product satisfaction and quality issues.	Return Rate = DIVIDE([Quantity Returned], [Quantity Sold], "No Sales")
Customer Retention %	The percentage of customers who made repeat purchases in multiple years between 2020 and 2022. Indicating customer loyalty and the company's ability to retain existing buyers over time.	Returning Customer % = DIVIDE([Returning Customers], [Total Customers])
Revenue per Customer	The average amount of revenue generated per unique customer. This measures customer value and spending behavior.	Average Revenue per Customer = DIVIDE([Total Revenue], [Total Customers]

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DATA MODEL

DATA MODEL & DEFINITION



TABLES

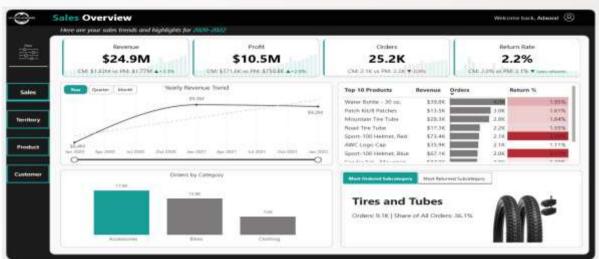
- Calendar Table: This was used to ensure consistent time intelligence across all visuals
- Sales 2020-2021 Fact Table: This table contains information about sales orders, order dates, it was used to create visuals and measures
- Product Category Lookup: This table contains information about the categories and ID's
- Customer Lookup: This table contains customer info such as names, income, education level etc.
- Product Lookup: This table contains information about products, descriptions and prices
- Product Subcategory Lookup: This table contains the product subcategories along with the ID's
- Returns Data_FactTable: This table contains information about return orders, including return dates it was used to create visuals and measures
- Territory Lookup: This table contains information about sales territories and geographic locations
- Measure Table: This table stored all custom DAX measures used in the report
- Field Parameter Tables: Custom tables created using Power BI's field parameter feature that switches between different fields or measures in visuals.



KEY INSIGHTS & TAKEAWAYS

KEY INSIGHTS

SALES OVERVIEW

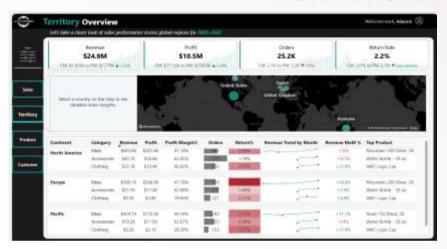


Summary (2020-2022)

Sales peaked in 2021 with \$9.3M revenue and stabilized in 2022, orders grew steadily while return rates declined from 3.3% to 2.1%, showing improved fulfillment or satisfaction. Seasonal spikes were observed in late 2021, likely driven by demand surges or promotions. Accessories led in volume, bikes in revenue, and clothing gained traction in 2022. Top products included Water Bottle – 30 oz. (most ordered) and Sport-100 Helmet (high revenue, high returns). While at the subcategory level, Tires and Tubes contributed over a third of total orders (36.1% or 9.1K)

Click to view full Sales Analysis

TERRITORY OVERVIEW





Summary (2020-2022)

North America led in both revenue and order volume, contributing over a third of global sales. Accessories emerged as the top-selling and most profitable category globally, reflecting consistent demand and customer preference. Europe had strong growth momentum (+13.9% MoM), but high bike return rates. The Pacific region was the smallest but fastest-growing region, with standout performance in Clothing (17.4%), suggesting untapped market potential. Across all regions, AWC Logo Cap and the 30 oz. Water Bottle consistently ranked as top-performing products. The United States stood out with the highest number of orders among all countries, contributing 36% of global order volume

Click to view full Regional Analysis

PRODUCT OVERVIEW





Summary (2020-2022)

The **Sport-100 Helmet, Red** was the highest return rate product at 3.33% but still ranked top 5 in orders, generating \$73.4K in revenue and \$46K in profit. Monthly return spikes aligned with high sales periods, implying volume drove returns not dissatisfaction. North America led in performance but saw volatility, the Europe region missed targets the most while the Pacific had the highest return rate. The price adjustment tool can be used to inform strategic pricing without sacrificing volume.

Click to view full Product Insight

CUSTOMER OVERVIEW



Summary (2020-2022)

AdventureWorks served over 17.4K customers from 2020 to 2022, generating 25.2K orders with a 33.6% retention rate and an average revenue per customer of \$1.4K. While customer count rose sharply from 3K to 1lK, individual spending dropped from \$2K to \$875, highlighting a shift toward volume over value. Most orders came from average and low-income tiers, professionals and skilled workers, and customers aged 51–70. Undergraduates made up most of the order volume, and females and singles slightly outspent their counterparts. Top customers like Mr. Maurice Shan and Mrs. Janet Munoz each spent over \$10K, revealing opportunities to nurture similar high-value profiles.

Click to view full Customer Analysis

TAKEAWAYS

- Customer acquisition efforts are succeeding but at the cost of profitability per customer. The customer base nearly quadrupled from 3K to 1lK, but revenue per customer dropped by 56% (from \$2K to \$875). This signals a shift to volume driven growth that may not be sustainable without improving customer value or targeting higher spending segments.
- ❖ High volume products drive success but also carry return risks. Best-selling items like the Sport-100 Helmet generated strong revenue but also had the highest return rates. Product level performance should be analyzed further to reduce return-related losses.
- North America remains the strongest market, but future growth may come from the Pacific. While North America leads in orders and revenue, the Pacific region showed the fastest MoM growth and emerging demand for clothing suggesting investment potential in product expansion and marketing in underpenetrated regions.
- Targeted customer segmentation could unlock additional revenue. Most purchases came from average and low-income customers aged 51–70, with undergraduates and professionals dominating. High-income tiers and younger segments are underrepresented highlighting a missed opportunity for product repositioning or bundling strategies.
- Operational improvements are driving better customer experience. Return rates declined from 3.3% to 2.1% despite order growth a sign of improved fulfillment processes or satisfaction levels that should be maintained and scaled.

RECOMMENDATIONS & NEXT STEPS

- Enhance Customer Value: By developing customer retention programs e.g., loyalty programs, cross-sell strategies, or premium tiers to increase revenue per customer.
- ❖ Investigate High Return Products: A deeper dive needs to be done into return drivers (e.g., sizing, quality, expectations) for best-sellers like the Sport-100 Helmet to reduce any avoidable losses.
- Invest in Pacific Region Expansion: Pilot targeted apparel campaigns and localized promotions to capitalize on fast-growing demand, especially in underpenetrated markets like Australia.
- Engage Untapped Segments: Campaigns tailored to high-income and younger demographics can be utilized through product bundling, influencer partnerships, and rebranding offers to boost engagement and conversion.

THANKS!









Feel free to reach out if you have any questions?

adanwogbo@gmail.com

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