

ADVENTURE WORKS PROJECT

COMPARATIVE ANALYSIS USING



Excel



Power BI



Tableau



SQL

Presented By Group 3

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INTRODUCTION

- ❖ Adventure Works Cycles is a global manufacturing company that sells bicycles and related accessories across multiple regions.
- ❖ This project aims to analyse the company's sales, production, and customer data using Excel, SQL, Power BI/Tableau to uncover performance trends and support decision-making.
- ❖ The analysis covers end-to-end data handling from cleaning and transformation to visualization resulting in interactive dashboards and KPIs that help understand business performance.

SCOPE

- ❖ Collecting and understanding Adventure Works datasets (Sales, Products, Customers).
- ❖ Cleaning, preprocessing, and transforming data using Excel and SQL.
- ❖ Creating calculated fields such as sales, profit, production cost, financial month, financial quarter, etc.
- ❖ Performing sales, product, and customer performance analysis.

OBJECTIVE

- ❖ To analyze sales performance across products, regions, and time periods.
- ❖ To evaluate profitability using calculated measures (production cost, unit cost, profit).
- ❖ To identify top-performing products and customers.
- ❖ To study seasonal trends using Year, Month, Quarter, and Financial Month indicators.
- ❖ To build clear and interactive dashboards for business storytelling.

DATA MODEL

Data Import

Extract from multiple sources

Cleaning

Standardise formats and validate entries

KPI Derivation

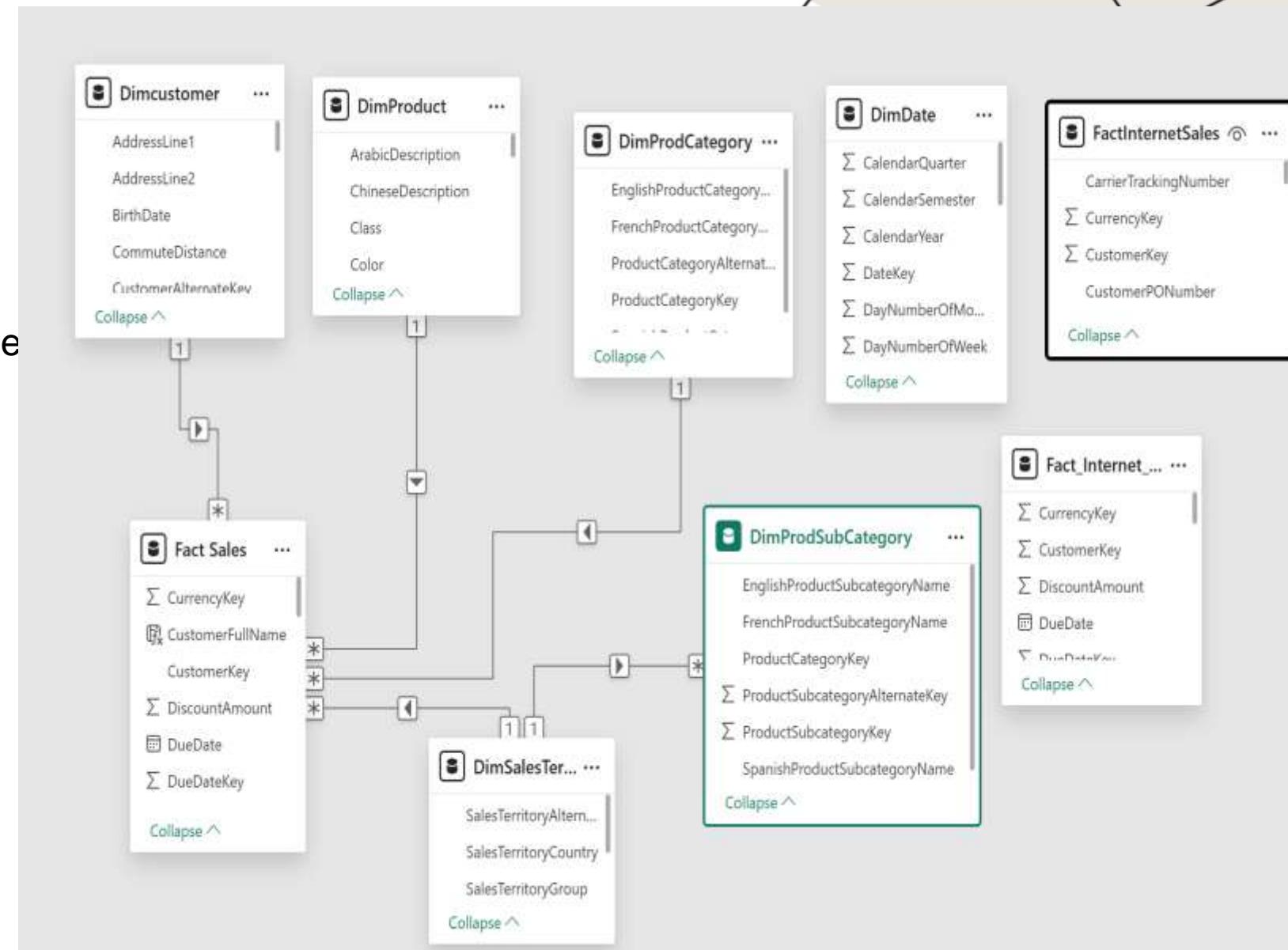
Calculate performance metrics

Visualisation

Create interactive dashboards

Insights

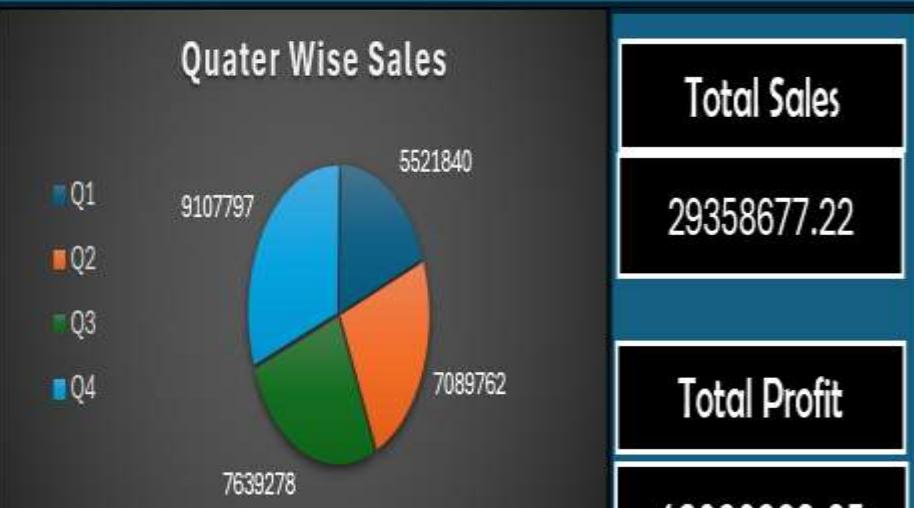
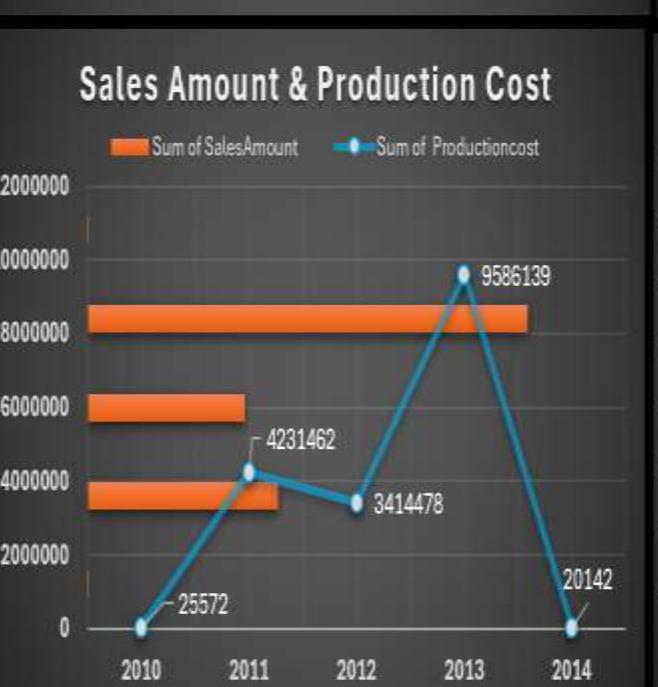
Extract actionable intelligence



EXCEL DASHBOARD

Presented by Group -3

Adventure Works Cycles Dashboard



Total Sales

29358677.22

Total Profit

12080883.65

Top Selling Product

Mountain-200 Black, 42

Mountain-200 Black, 46

Mountain-200 Silver, 38

POWER BI DASHBOARD



Adventure Works Dashboard

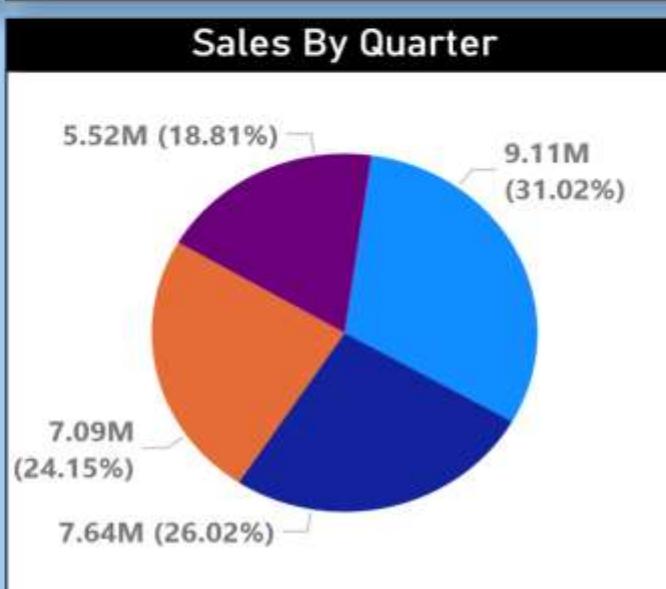
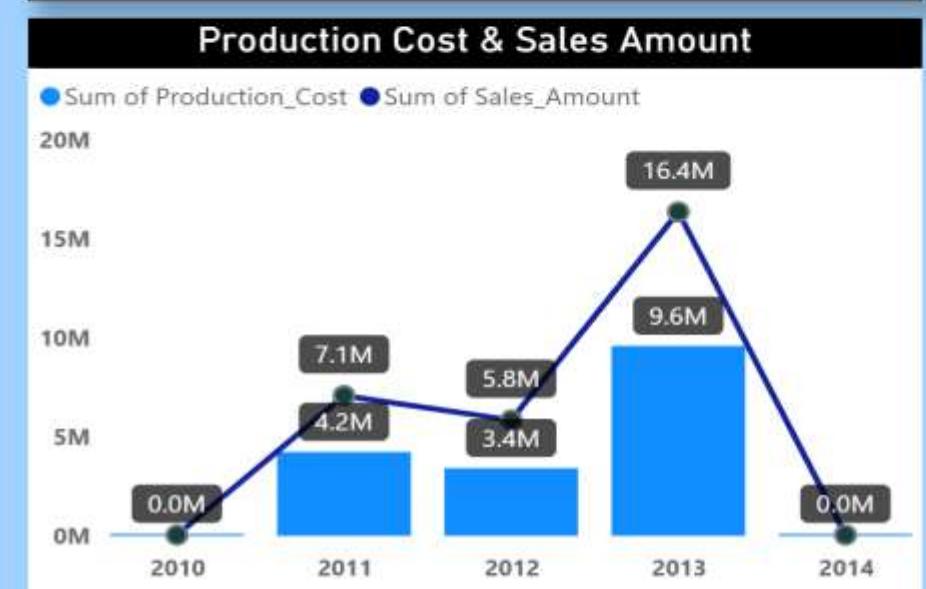
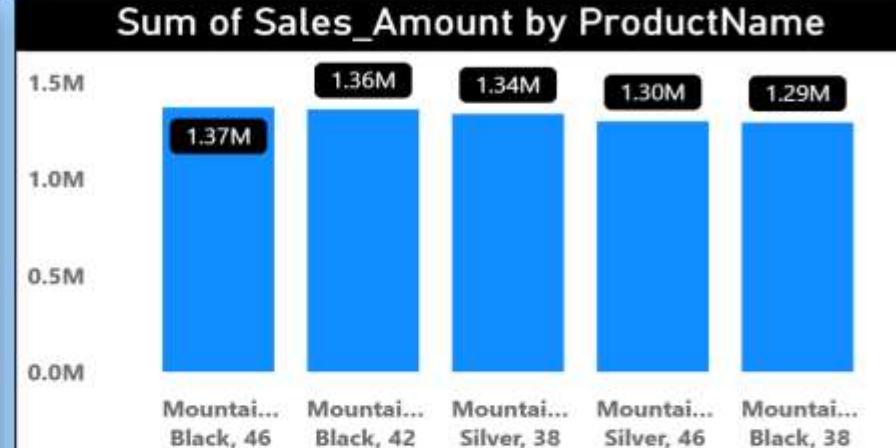
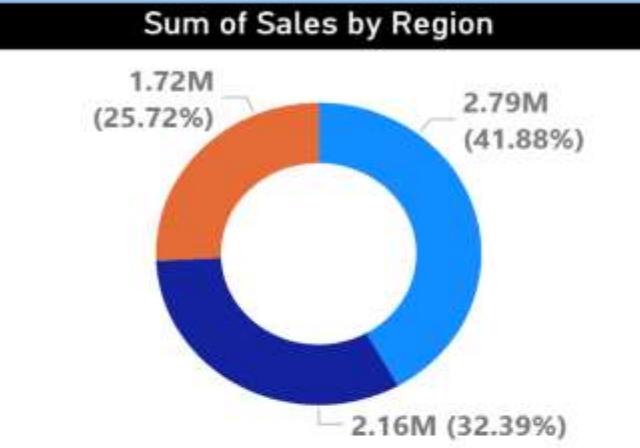
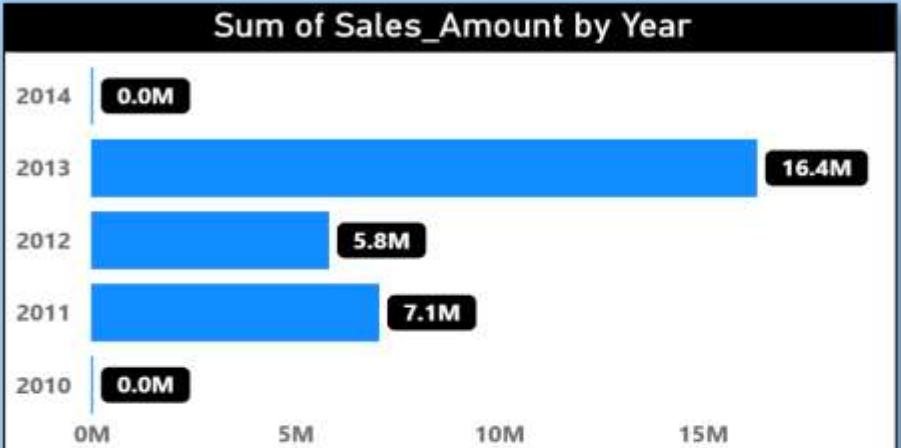


TABLEAU DASHBOARD

Adventure Works Cycles Dashboard

*Presented By Group-3



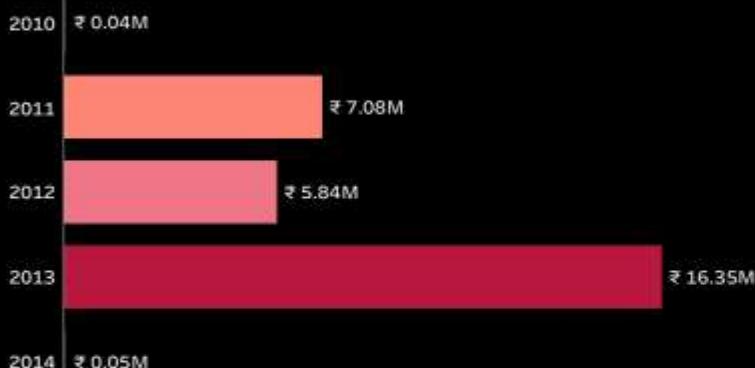
Sales Amount
₹ 29.36M

Profit
₹ 12.08M

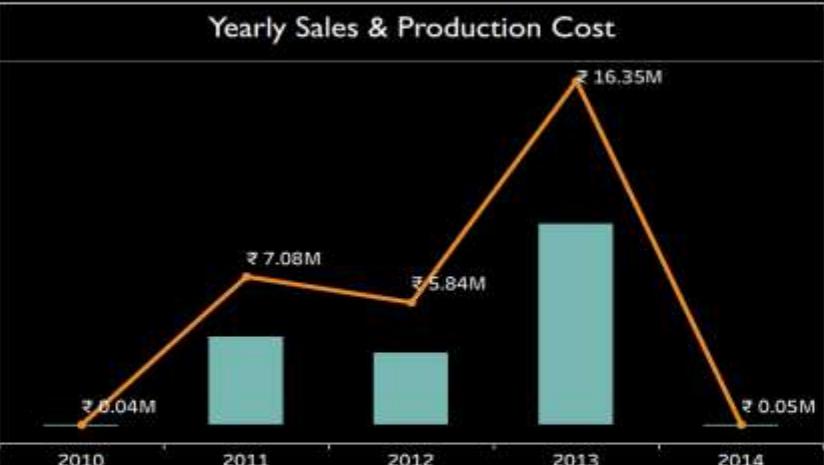
Order Quantity
₹ 60.40K

Productioncost
₹ 17.28M

Year Wise Sales



Yearly Sales & Production Cost



Top 5 Products

Mountain-200 Black, 46	₹ 1.37M
Mountain-200 Black, 42	₹ 1.36M
Mountain-200 Silver, 38	₹ 1.34M
Mountain-200 Silver, 46	₹ 1.30M
Mountain-200 Black, 38	₹ 1.29M

Top 5 Customers

Nichole Nara	₹ 13.30K
Kaitlyn J Henderson	₹ 13.29K
Margaret He	₹ 13.27K
Randall M Dominguez	₹ 13.27K
Adriana L Gonzalez	₹ 13.24K

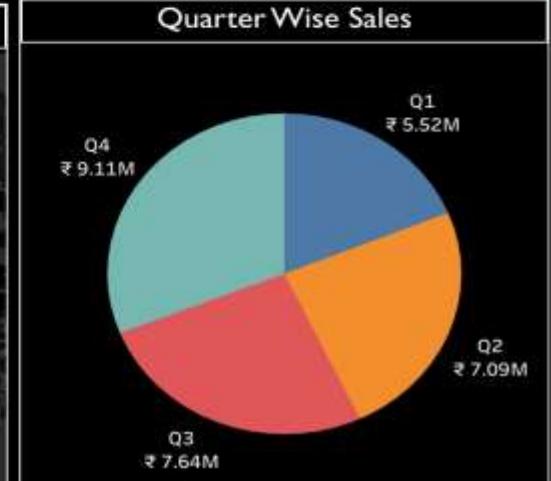
Month Wise Sales



Sales By Region



Quarter Wise Sales



SQL OUTPUTS

Q. 1 - 6

	ProductName	CustomerFullName	UnitPrice_1	OrderDate_1	Year	MonthNo	MonthFullName	Quarter	YearMonth	WeekdayNo	WeekdayName	FinancialMonth
▶	Mountain-200 Silver, 38	Robin Ramos	2319.99	2012-12-31	2012	12	December	Q4	2012-Dec	1	Monday	9
	HL Mountain Tire	Robin Ramos	35.00	2012-12-31	2012	12	December	Q4	2012-Dec	1	Monday	9
	Road-350-W Yellow, 42	Arthur K Jiménez	1700.99	2012-12-31	2012	12	December	Q4	2012-Dec	1	Monday	9
	Short-Sleeve Classic Jersey, L	Arthur K Jiménez	53.99	2012-12-31	2012	12	December	Q4	2012-Dec	1	Monday	9
	AWC Logo Cap	Arthur K Jiménez	8.99	2012-12-31	2012	12	December	Q4	2012-Dec	1	Monday	9
	Road-250 Black, 58	Devin A Anderson	2443.35	2012-12-31	2012	12	December	Q4	2012-Dec	1	Monday	9
	HL Road Tire	Devin A Anderson	32.60	2012-12-31	2012	12	December	Q4	2012-Dec	1	Monday	9
	Road-250 Black, 52	Ann C Rana	2443.35	2012-12-31	2012	12	December	Q4	2012-Dec	1	Monday	9
	Road Tire Tube	Ann C Rana	3.99	2012-12-31	2012	12	December	Q4	2012-Dec	1	Monday	9
	HL Road Tire	Ann C Rana	32.60	2012-12-31	2012	12	December	Q4	2012-Dec	1	Monday	9

FinancialQuarter	SalesAmount_1	ProductionCost	Profit
Q3	2319.99	1265.62	1054.37
Q3	35.00	13.09	21.91
Q3	1700.99	1082.51	618.48
Q3	53.99	41.57	12.42
Q3	8.99	6.92	2.07
Q3	2443.35	1554.95	888.40
Q3	32.60	12.19	20.41
Q3	2443.35	1554.95	888.40
Q3	3.99	1.49	2.50
Q3	32.60	12.19	20.41

Q.8

	Year	Sum of SalesAmount
▶	2010	43421.04
	2011	7075525.93
	2012	5842485.2
	2013	16351550.34
	2014	45694.72

Q.9

	Year	Month	TotalSales
▶	2010	12	43421.04
	2011	1	469823.91
	2011	2	466334.9
	2011	3	485198.66
	2011	4	502073.85
	2011	5	561681.48
	2011	6	737839.82
	2011	7	596746.56
	2011	8	614557.94
	2011	9	603083.5
	2011	10	708208
	2011	11	660545.81
	2011	12	669431.5

Q.10

	Quarter	TotalSales
▶	Q1	5521839.56
	Q2	7089762.27
	Q3	7639278.11
	Q4	9107797.28

KEY INSIGHTS

Category Revenue Breakdown

Accessories contribute **42%** of total revenue, making them the top-selling category. Clothing follows at **31%**, showing strong customer interest in lifestyle products.

Market Contribution by Country

The United States accounts for **51%** of total sales revenue. Canada (**18%**) and the UK (**11%**) are far behind, highlighting heavy dependence on the U.S. market.

Quarterly Sales Insights

Q1 delivers the highest sales with **₹8.4M revenue**, outperforming all other quarters. This indicates strong early-year purchasing behavior.

Customer Purchase Behaviour

The dataset shows **60,398 transactions**, with many customers purchasing medium-priced products. This suggests balanced demand rather than extreme price competition.

Profit Distribution Patterns

Average profit per order stands at **\$200**, with premium products generating margins above **\$450**. High-value items contribute disproportionately to total profitability.

Subcategory Revenue Drivers

Within Accessories, **Bottles, Helmets, and Gloves** dominate sales. These subcategories consistently appear in the top 10 products list.

Regional Performance Gaps

European countries show comparatively lower sales volumes, accounting for **less than 15%** of total revenue. This highlights potential untapped global markets.

Seasonal Buying Trends

Sales rise sharply in the early and mid-year months, implying customers are more active during **Q1 and Q2**. Marketing push during these months could maximize conversions.

LEARNINGS & TOOL MASTERY



Excel

- ❖ Enabled quick prototyping with pivot tables and conditional formatting for rapid dashboard creation and initial data exploration.



Power BI

- ❖ Leveraged dynamic relationships, DAX calculations, and automated refresh capabilities for sophisticated business intelligence solutions.



SQL

- ❖ Established robust data foundation through queries enabling KPI verification, data quality assurance, and complex aggregations.



Tableau

- ❖ Utilised advanced storytelling features and interactivity to create compelling, user-friendly analytical narratives for stakeholders.

CONCLUSION

- ❖ This project successfully transformed raw Adventure Works data into meaningful insights.
- ❖ Using SQL, Excel, and Tableau, sales patterns, customer and product performance were visualized through interactive dashboards.
- ❖ The analysis helps management make better decisions related to product strategy, pricing, production planning, and customer targeting.
- ❖ Overall, the project demonstrates the complete lifecycle of business intelligence from data cleaning to insight generation.



THANK YOU!