



E-COMMERCE SALES ANALYSIS

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Profile: Shahana Anjum

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Skills:

- SQL
- Python
- Data visualisation
- Tableau
- Problem solving

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INTRODUCTION

- ▶ Project overview:
 - ▶ Analysing and visualising the E-commerce sales data to support business requirement.
 - ▶ Analysing sales trends and patterns for various products across different regions.
- ▶ Scope of analysis
 - ▶ Analysing and uncovering insights for different products sold and profit in different regions.
 - ▶ Analysing top 3 highest performing and bottom 3 lowest performing products.
 - ▶ Evaluating the sales and profit margin month wise.
 - ▶ Performing statistical analysis and generating the results in the form of charts or graphs.
- ▶ Tools
 - ▶ Advanced Excel

Data Description

- ▶ Data Abstract:
 - ▶ The size of the file is 13 Mb and dataset has 51,291 records and 21 columns.
 - ▶ It covers E-commerce sales transaction, product details and order details in different regions covering for January- December 2015.
- ▶ Key Performance Indicator:
 - ▶ Order ID, Customer ID, Product Category, Region, Profit, Sales
- ▶ Data Cleaning:
 - ▶ Checking and removing duplicate values and null values
 - ▶ Formatting the cells to ensure consistency
 - ▶ Applying the icon set rule to show high and low sales.

Statistical Analysis

Statistics	Sales	Profit
Mean	\$ 156.4	\$ 72.7
Median	\$ 159.0	\$ 67.0
Mode	\$ 228.0	\$ 17.0
Min	\$ 33.0	\$ 0.5
Max	\$ 250.0	\$ 167.5
Standard deviation	\$ 65.8	\$ 49.1
Variance	\$ 4,327.2	\$ 2,410.7
Correlation	0.999	

- ▶ Statistical analysis shows the mean, median, mode, min, max, standard deviation, variance and correlation for the sales and profit.
- ▶ The correlation between sales and profit is 0.99. a very strong positive correlation, means profit will increase with increase in sales.

Data Analysis and Insights

Month wise Sales and Profit



► Insight:

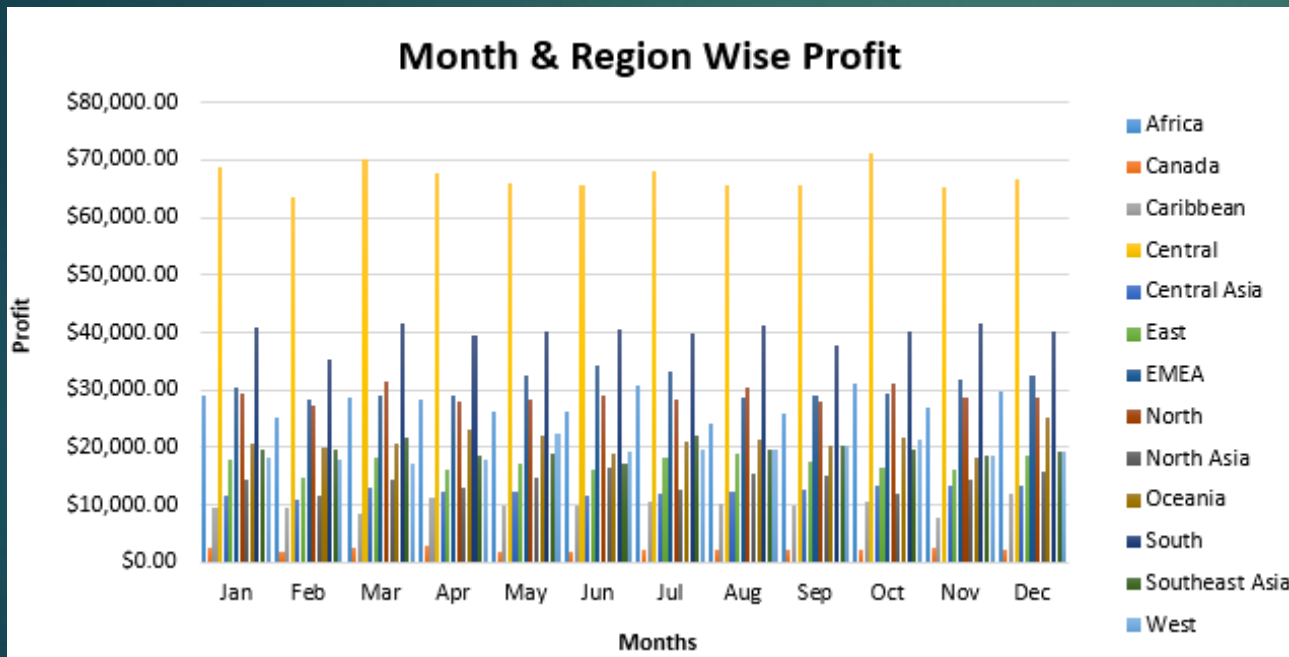
- The highest sales are in Jan, Mar, Jul, Oct and Dec.
- The lowest sales are in the month of Feb, and follow in Apr, Sept and Nov.
- The profit is high when the sales are increased.

► Recommendations

- Running discounts, which will attract customers which can increase the sales.
- Target the one-time buyer customers and give suggestion or give multibuy discounts.

Data Analysis and Insights

Month and Region Wise Profit



▶ Insight:

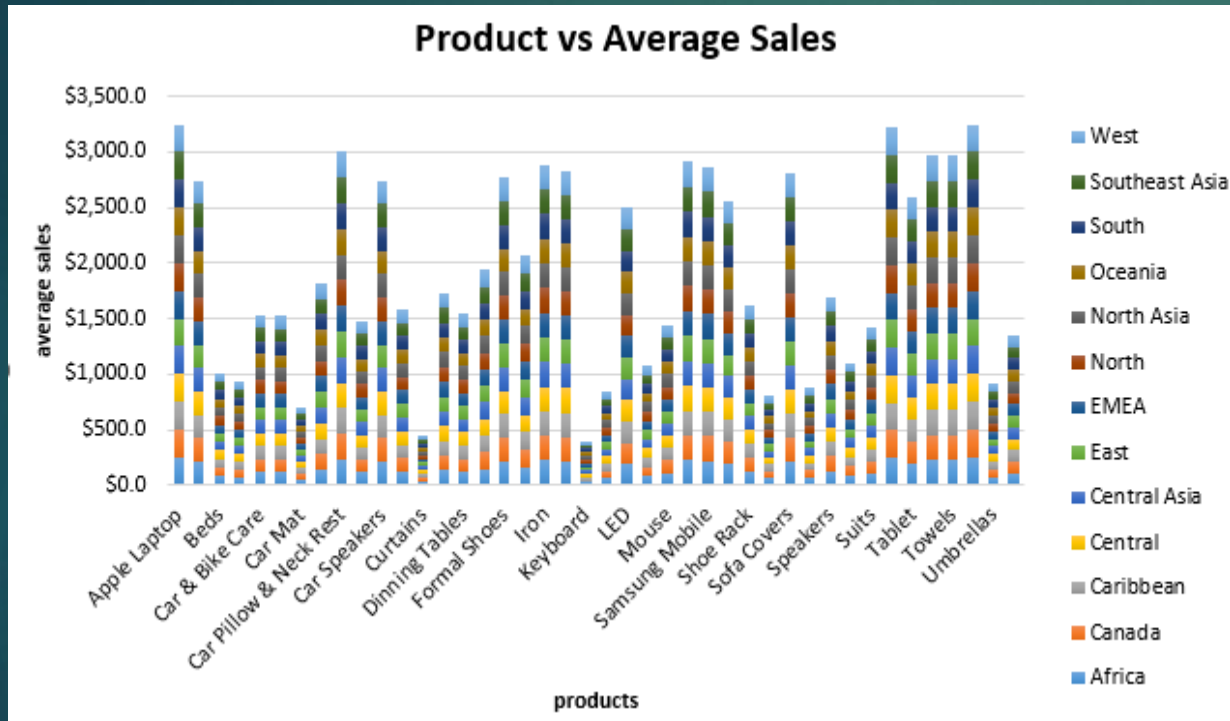
- ▶ The insight shows that the Central region has highest profit of around \$70k.
- ▶ The Canada region has lowest profit less than \$5k.
- ▶ Rest of region generates profit between \$10k-\$40k.

▶ Recommendations

- ▶ Target the low profit region and improve the infrastructure developments.
- ▶ Improve the shipping infrastructure, increase the warehouses and increase the manpower.

Data Analysis and Insights

Product vs Average Sales



▶ Insight:

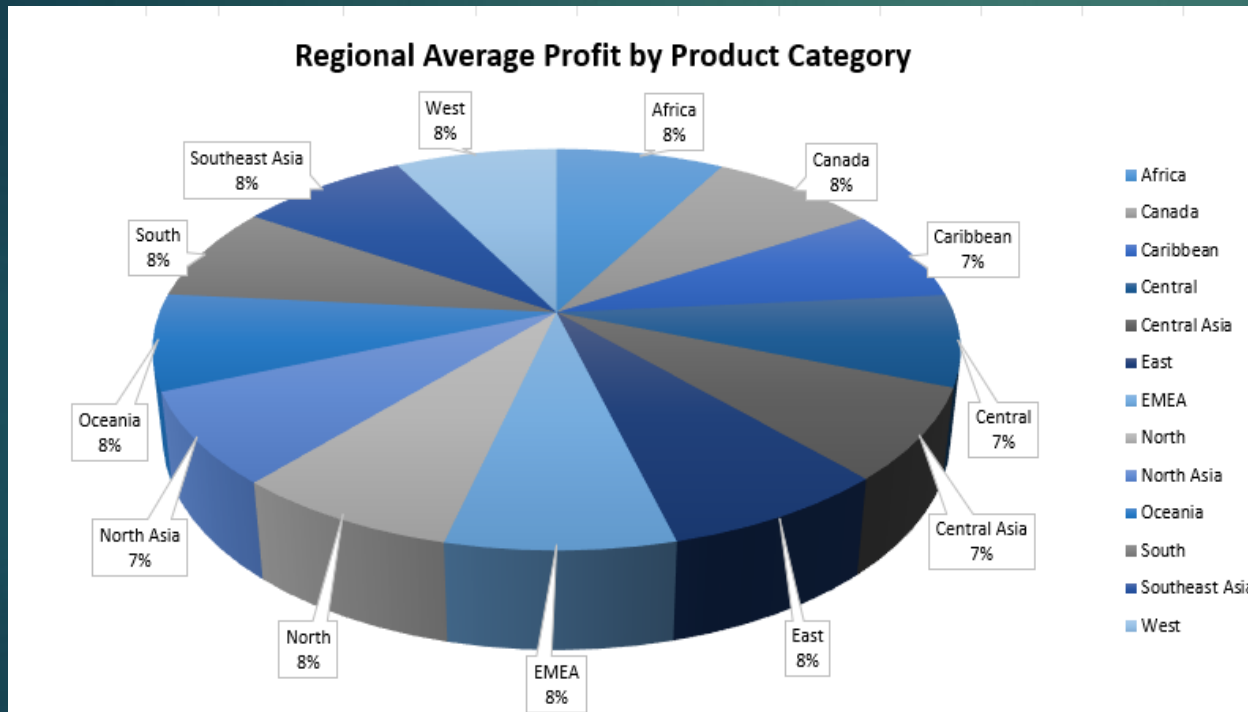
- ▶ The highest selling products are Apple laptop, T-shirt and Tyre. The average sale is above \$3k.
- ▶ The lowest selling products are keyboard and curtains. The average sale is below \$0.5k.

▶ Recommendations

- ▶ Running discounts on low selling products.
- ▶ Improving the warehouses and availability of products in the low sale region can improve the product sale.

Data Analysis and Insights

Regional Average Profit by Product Category



▶ Insight:

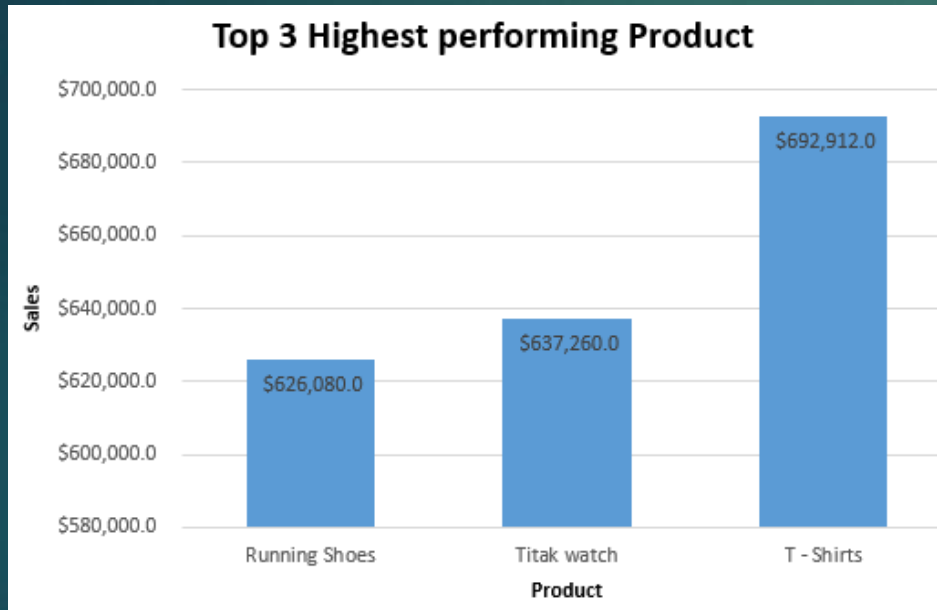
- ▶ Most regions have similar average profits, with many at 8%.
- ▶ Only a few regions (Caribbean, Central, North Asia, and Central Asia) are slightly lower at 7%.

▶ Recommendations

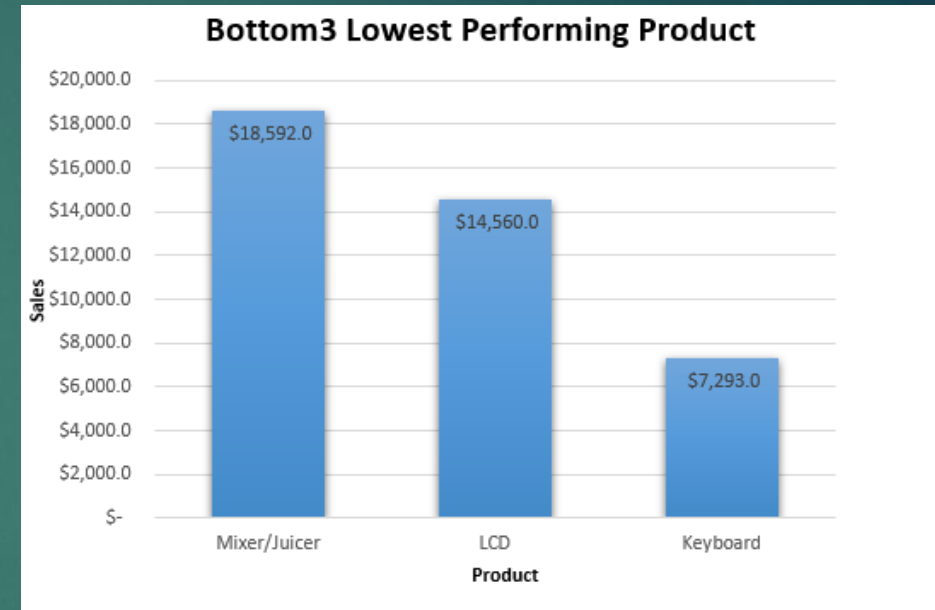
- ▶ Consider localized marketing strategies to boost product adoption.
- ▶ Adjust pricing, promotions, or product mix to better suit these markets in lower profit area.

Data Analysis and Insights

Highest and Lowest Performing Products



- ▶ The insight shows that the highest performing products are T-Shirt, Titak Watch and Running Shoes. These products generating sales of over \$600k.



- ▶ The insight shows that the lowest performing products are Keyboard, LCD and Mixer/Juicer. These products generating sales of below \$19k.

Dashboard

Product

Apple Laptop

Bed Sheets

Beds

Bike Tyres

Car & Bike Care

Car Body Covers

Car Mat

Months

Jan

Feb

Mar

Apr

May

Jun

Jul

Region

Africa

Canada

Caribbean

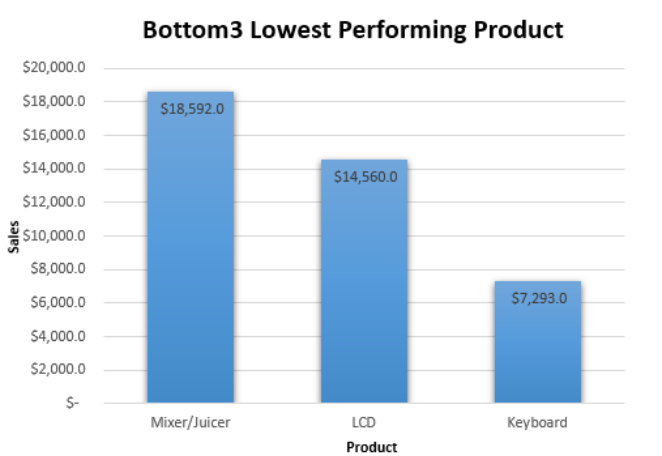
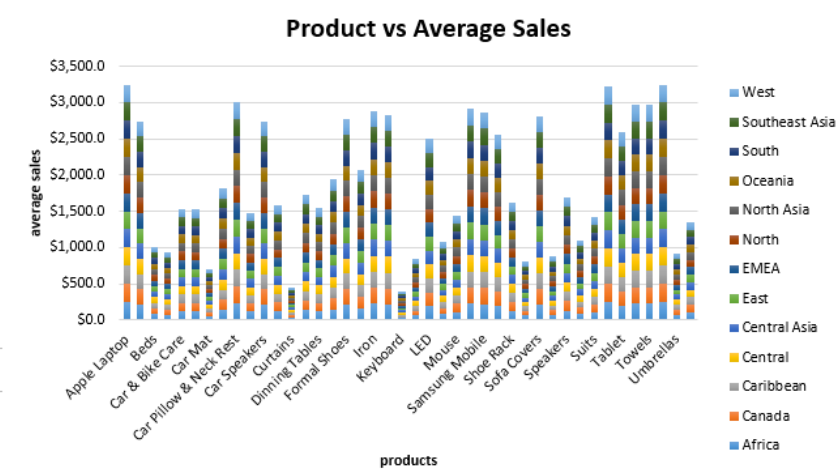
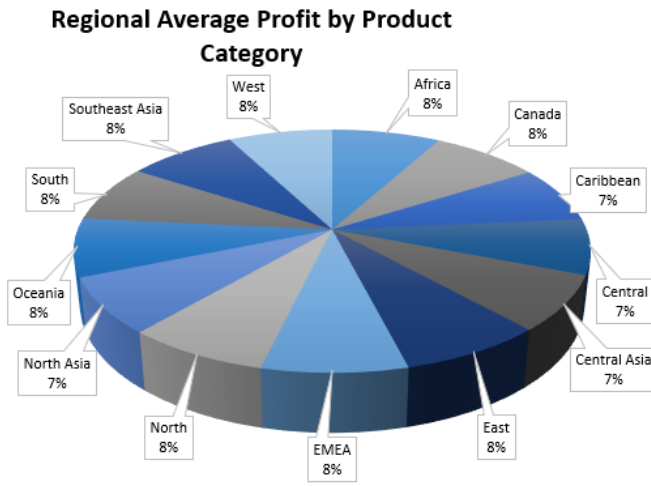
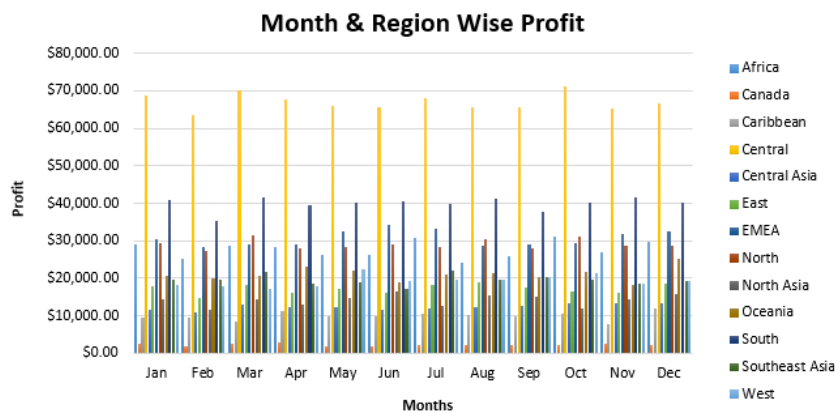
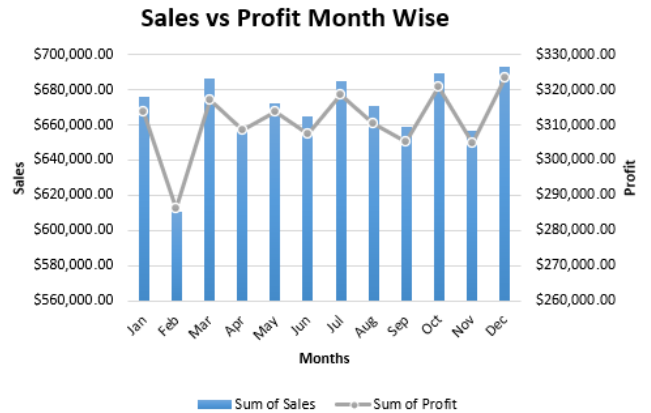
Central

Central Asia

East

EMEA

North



Conclusion

- ▶ E-commerce sales analysis has been carried out. The trends and pattern were analysed using statistical analysis, graphs and charts.
- ▶ This shows that:
 - ▶ Highest selling products are T-shirt, Tiktok and running shoes, whereas the lowest selling products are Keyboard, Mixer/Juicer and LCD.
 - ▶ The sells were highest in the months of Jan, Dec and lowest in Feb. recommended to improve the manpower, infrastructures and running discounts will improve the sales and profit.
 - ▶ The sales and profit are strongly correlated
 - ▶ The central region has highest sales and profit whereas Canada has lowest sales. By improving manpower, developing the infrastructures can increase the sales in low profit region.

Thank you

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