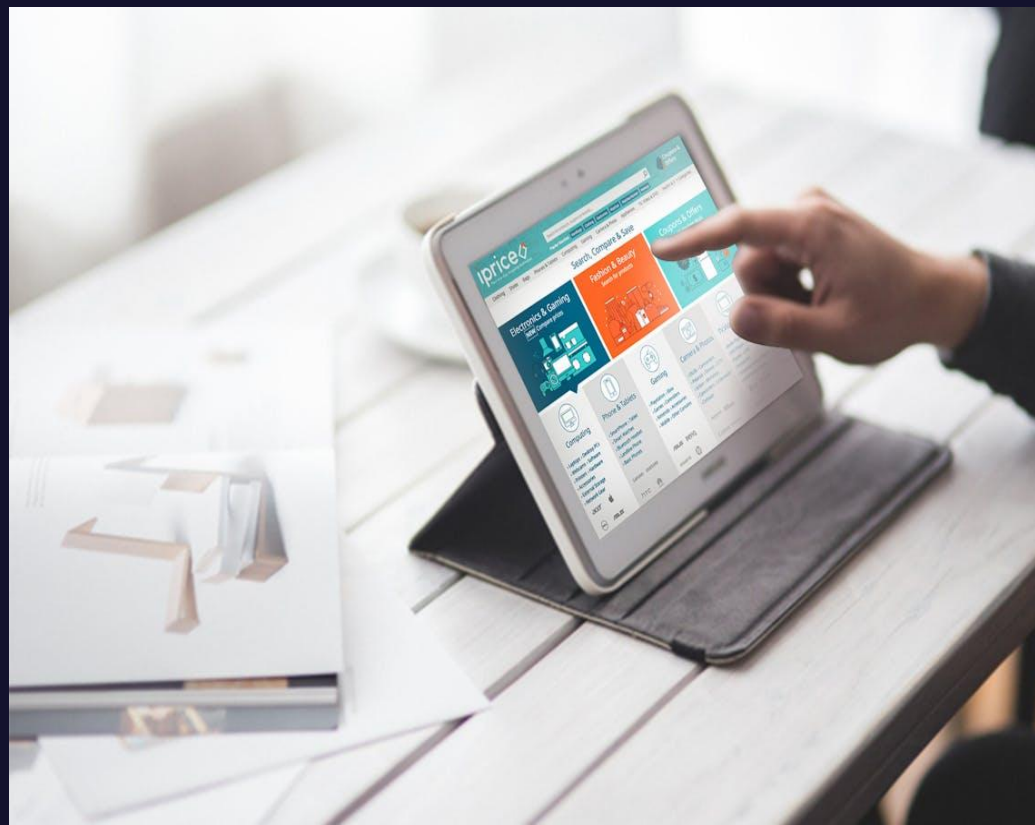


E-commerce Sales Dashboard

Axton Benedict Cahyadi



Project Objectives



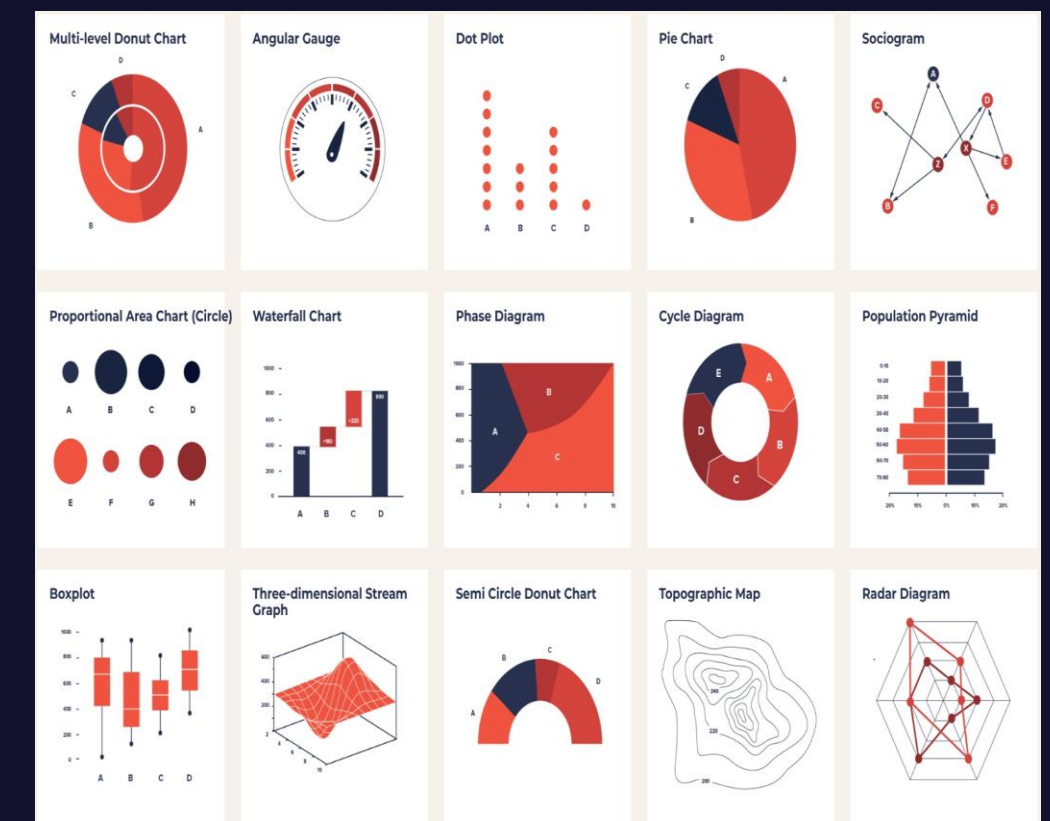
Dashboard

Create a user-friendly dashboard on the Sales & Profit dataset given



Data analysis

Perform the appropriate analysis on the dataset and provide meaningful insights and visualizations of the dataset



Data visualization

Present conclusions, charts and insights based on the analysis to our stakeholders.

Dataset Description

E-Commerce Dashboard dataset.xlsx

- Dataset of year 2015
- 21 Columns and 51290 Rows

COLUMNS

Orders – details of each order

- OrderID, Order Date and Ship Date
- Aging
- Ship Mode
- Product Category & Products
- Price details: Sales, Quantity, Discount, Profit, Shipping Cost and Order Priority

Customers – details of each customer

- CustomerID, Name, Segment, Geographic details and months

Data Formatting

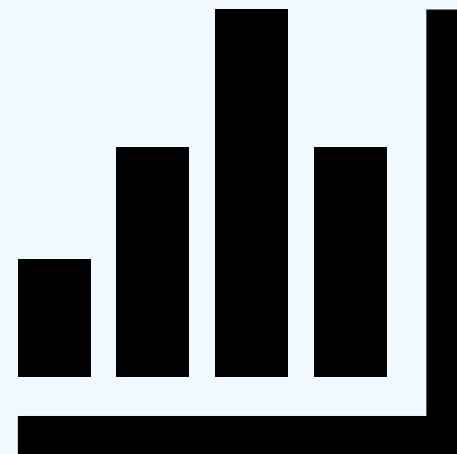
Data Duplicates

No duplicate records
found for Customers
& Orders



Icon set rule

Showing profits & sales
divided into 3 groups



Data types

Changing date format
to dd-mmm-yy for
readability





Analysis

STATISTICAL ANALYSIS:

- **Measures of central tendency** such as Mean, Median, Max, Min to describe the typical value in the dataset
- **Measures of dispersion** such as SD and Variance to indicate data spread
- Find **trends** and **correlation** between variables for deeper insights

DESCRIPTIVE ANALYSIS:

- Summarizing & interpreting data
- Generate insights using statistics
- Data Visualization using charts and graphs

Statistical Analysis

<u>Metrics</u>	<u>Sales</u>	<u>Profit</u>
Mean	\$156.4	\$72.7
Median	\$159	\$67
Maximum	\$250	\$167.5
Minimum	\$33	\$0.5
Standard Deviation	67.8	49.1
Variance	4327.1	2410.7
Correlation	0.92	
Profit Margin %	46.5 %	

- The **average** sale and profit is estimated to be \$156 and \$72
- A **46% profit margin** strongly indicates a healthy and profitable business
- Although it has a **high profit margin**, there was an outlier of \$0.5 profit only which needs to be looked into more and **adjust discounts** and **shipping costs** accordingly
- Despite that, there wasn't a sale that led to **negative profit**
- **High sales and profit variance** is a concern as it suggests **fluctuating revenue** and could **not produce stable results**
- **Correlation** between sales & profit is 92% which implies that as sales rise, so does profit

Descriptive Analysis

Sales Dashboard

Total Orders

51290



Total sales

\$8.023.381



Best&Worst region

Best: CENTRAL

Worst: CANADA

MORE DATASHEETS WITH CHARTS :

[click here for full dataset](#)

[Top and botom 3 products per region sheet](#)

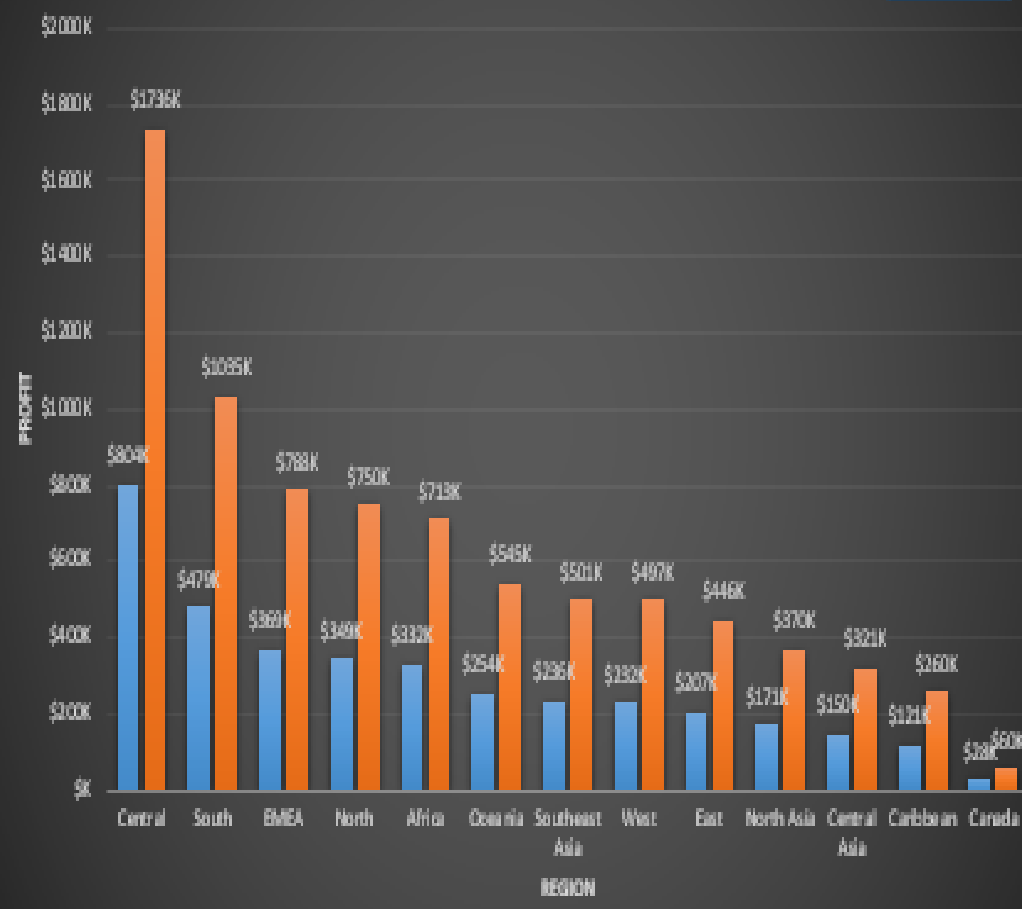
[Top and bottom 3 products all regions sheet](#)

[Cstomer segment count sheet](#)

[Monthly profit sheet](#)

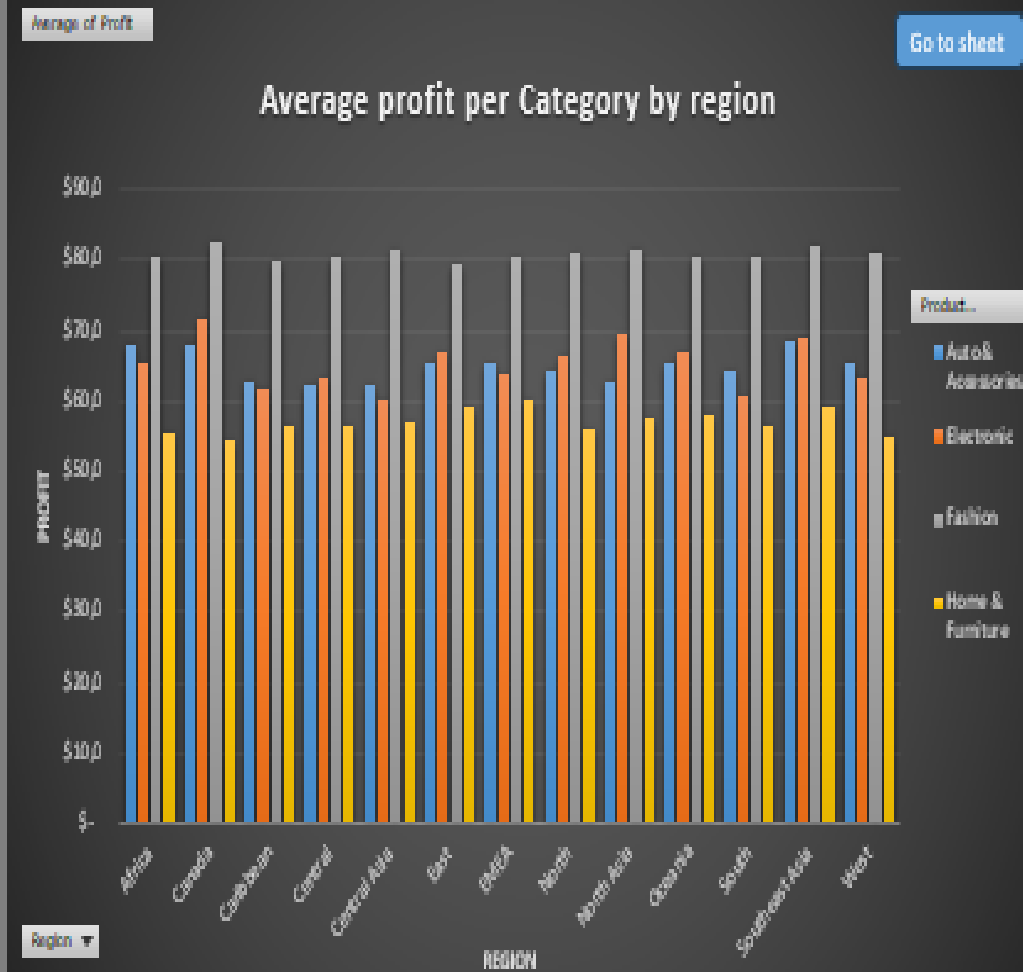
Total profit per region

[Go to sheet](#)



Average profit per Category by region

[Go to sheet](#)



Product Category

- Auto & Accessories
- Electronic
- Fashion
- Home & Furniture

Months

- Jul
- Aug
- Sep
- Oct
- Nov
- Dec

Segment

- Consumer
- Corporate
- Home Office

Region

- Canada
- Caribbean
- Central
- Central Asia
- East
- EMEA
- North

Product

- Apple Laptop
- Bed Sheets
- Beds
- Bike Tyres
- Car & Bike Care
- Car Body Covers
- Car Mats

Top selling products

T-shirts

UNITS: 8.346
SALES: \$692.912
PROFIT: \$407.716



Titak Watch

UNITS: 8.535
SALES: \$637.260
PROFIT: \$355.244



Running Shoes

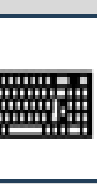
UNITS: 8.345
SALES: \$626.080
PROFIT: \$346.338



Worst selling products

Keyboard

UNITS: 671
SALES: \$7,293
PROFIT: \$3290



Watch

UNITS: 674
SALES: \$22.984
PROFIT: \$3.428



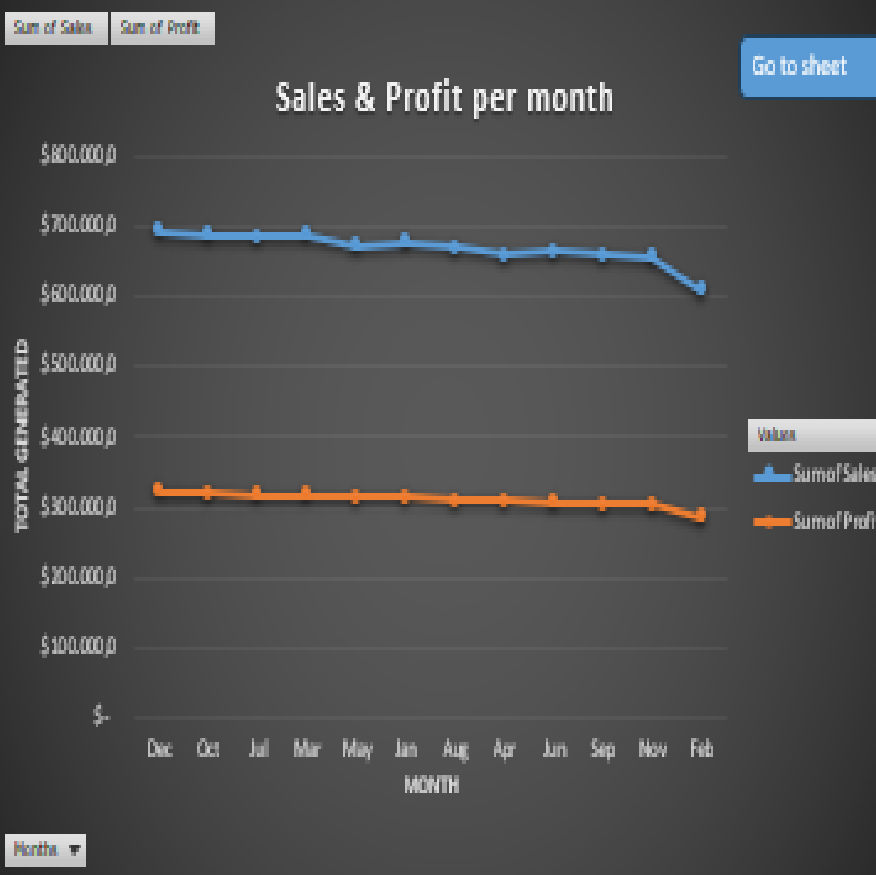
Mouse

UNITS: 651
SALES: \$24.531



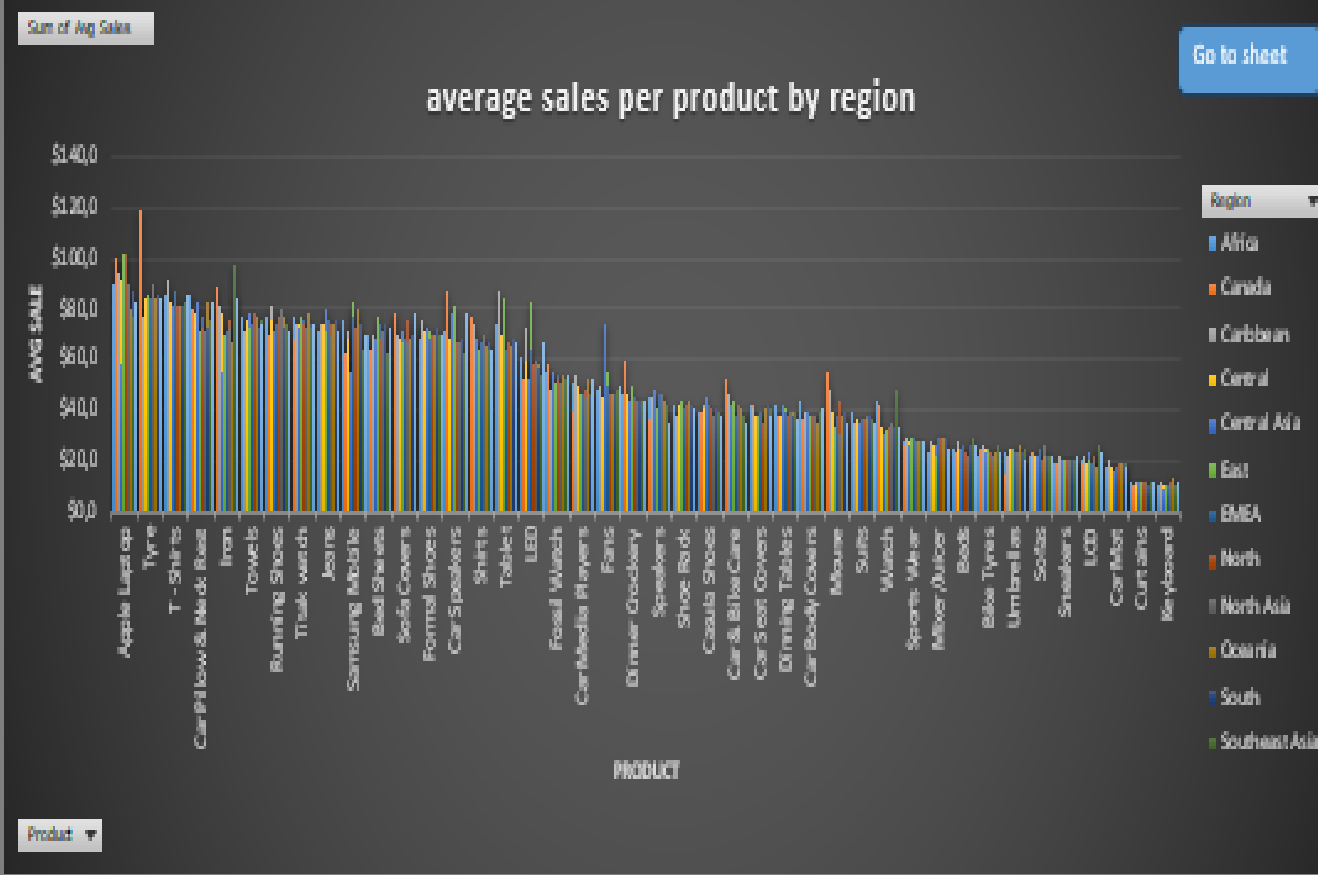
Sales & Profit per month

[Go to sheet](#)



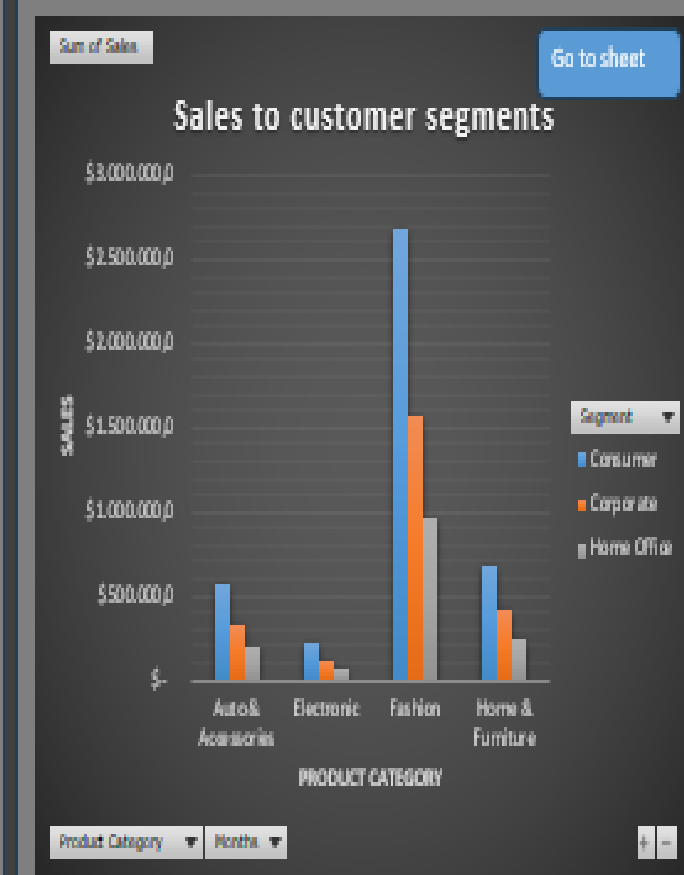
average sales per product by region

[Go to sheet](#)



Sales to customer segments

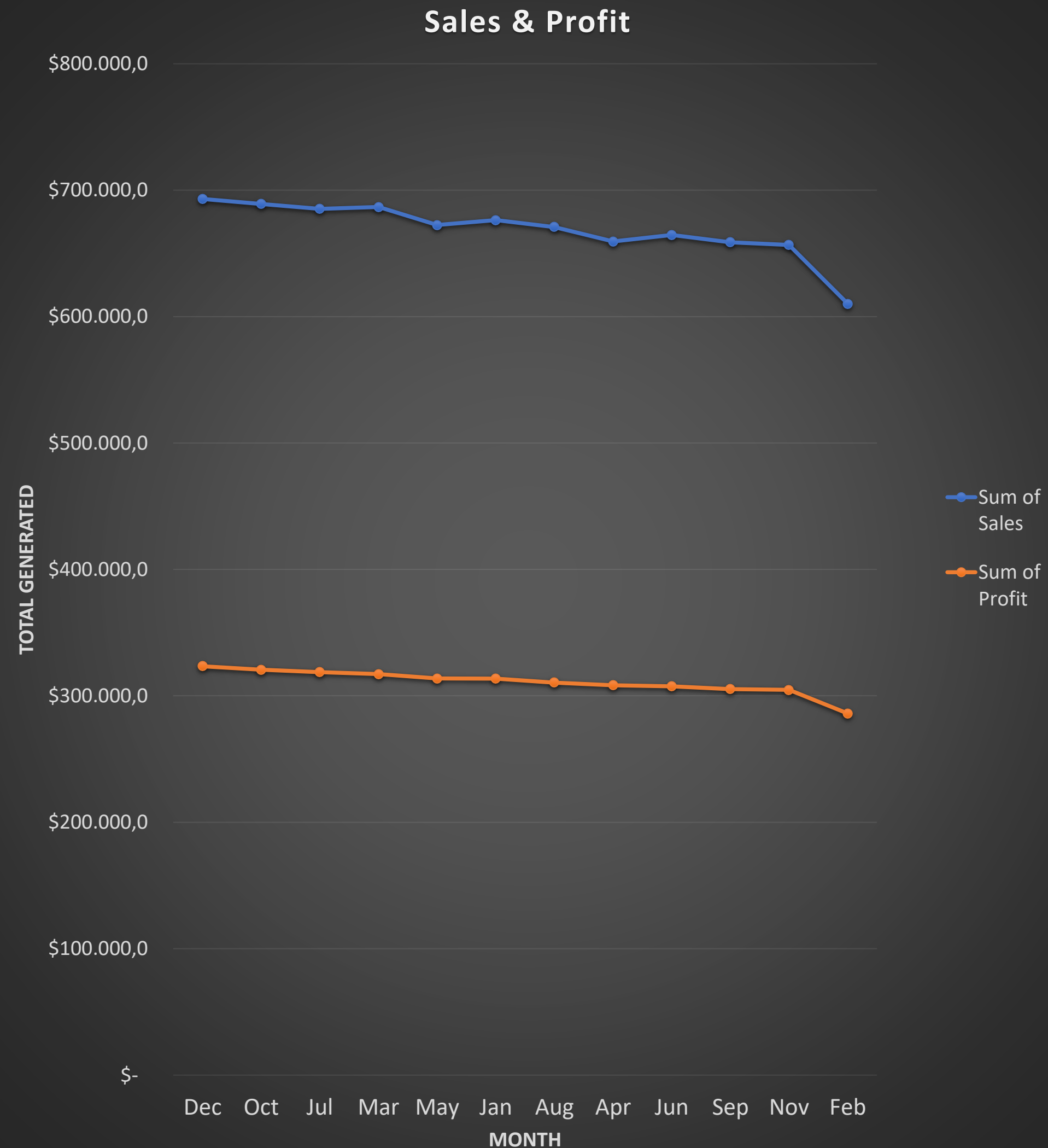
[Go to sheet](#)



Sales & Profit

Averaging at:

- **SALES:** \$668.615
- **PROFIT:** \$301.825
- **Best** performing month is December
- **Worst** performing month is February
- Both sales and profit lines are looking **steady**, which indicates a stable business.

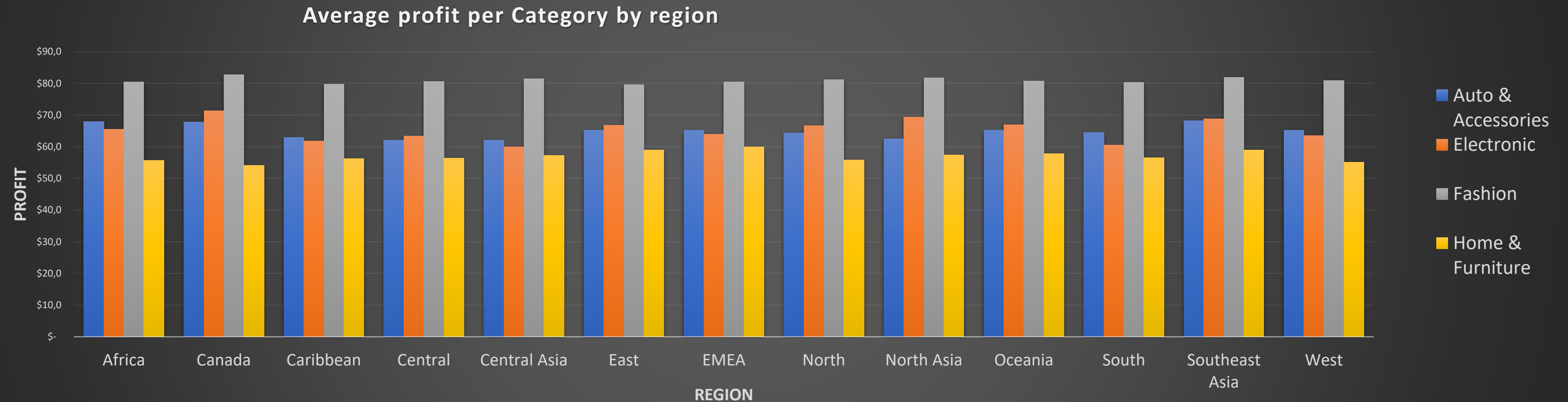


Table

Month	↕	Sum of Sales	Sum of Profit
Dec		\$ 693.073,0	\$ 323.401,9
Oct		\$ 689.116,0	\$ 320.748,7
Jul		\$ 685.152,0	\$ 318.703,2
Mar		\$ 686.681,0	\$ 317.186,0
May		\$ 672.547,0	\$ 313.751,2
Jan		\$ 676.313,0	\$ 313.566,3
Aug		\$ 670.788,0	\$ 310.442,8
Apr		\$ 659.404,0	\$ 308.364,5
Jun		\$ 664.560,0	\$ 307.585,0
Sep		\$ 658.844,0	\$ 305.334,5
Nov		\$ 656.663,0	\$ 304.716,1
Feb		\$ 610.240,0	\$ 286.102,6
Grand Total		\$ 8.023.381,0	\$ 3.729.903,0

- **December, October and July** have the highest sales most likely due to **holiday seasons**, Black Fridays, Cyber Mondays or mid-year sales promotions
- **February** has the lowest sales possibly due to **fewer days of the month**, post-holiday customer fatigue after **spending too much in January**

Profit per Product Category (region-wise)



- All of the regions have a consistent average profit for all categories
- Most profitable category is **Fashion (green)**
- Least profitable category is **Home & Furniture (purple)**

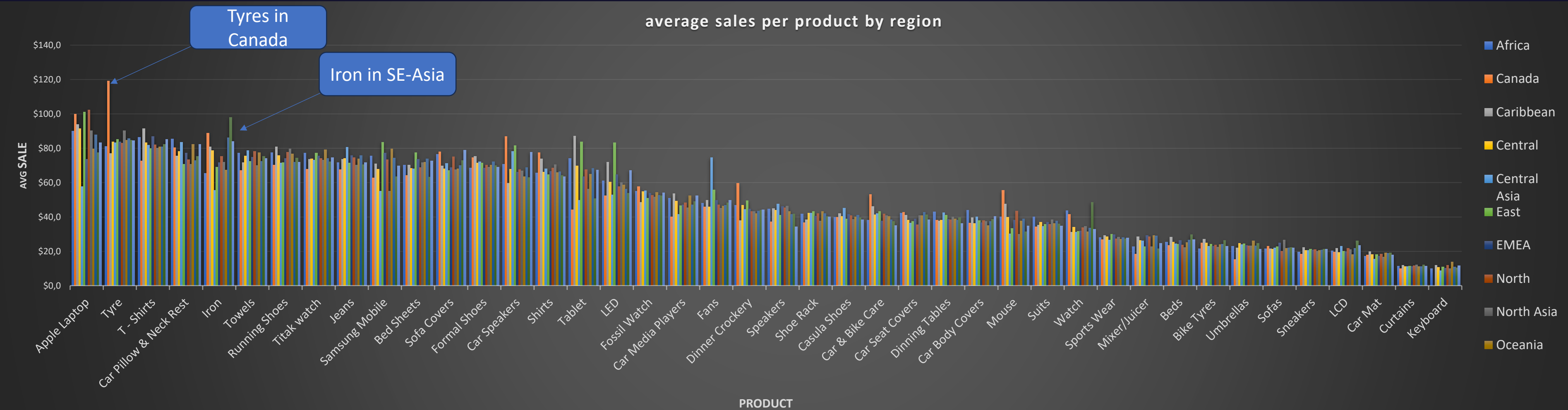


Table

Average of Profit	Regions					
Product Category	Auto & Accessories	Electronic	Fashion	Home & Furniture	Grand Total	
Africa	\$ 67,9	\$ 65,5	\$ 80,5	\$ 55,6	\$ 72,4	
Canada	\$ 67,8	\$ 71,3	\$ 82,7	\$ 54,2	\$ 72,3	
Caribbean	\$ 62,9	\$ 61,8	\$ 79,7	\$ 56,3	\$ 71,4	
Central	\$ 62,1	\$ 63,3	\$ 80,6	\$ 56,4	\$ 72,3	
Central Asia	\$ 62,1	\$ 59,9	\$ 81,4	\$ 57,2	\$ 73,0	
East	\$ 65,2	\$ 66,8	\$ 79,6	\$ 59,0	\$ 72,6	
EMEA	\$ 65,2	\$ 63,9	\$ 80,5	\$ 59,9	\$ 73,3	
North	\$ 64,3	\$ 66,6	\$ 81,2	\$ 55,9	\$ 73,0	
North Asia	\$ 62,5	\$ 69,4	\$ 81,7	\$ 57,4	\$ 73,1	
Oceania	\$ 65,2	\$ 67,0	\$ 80,7	\$ 57,8	\$ 72,8	
South	\$ 64,5	\$ 60,5	\$ 80,3	\$ 56,6	\$ 72,1	
Southeast Asia	\$ 68,3	\$ 68,7	\$ 81,9	\$ 58,9	\$ 75,3	
West	\$ 65,3	\$ 63,5	\$ 80,8	\$ 55,2	\$ 72,4	
Grand Total	\$ 64,5	\$ 64,5	\$ 80,7	\$ 57,0	\$ 72,7	

- **Fashion** dominating the product category with an average profit of \$80 per order.
- **Home & Furniture** coming in last by far with only \$57 per order.
- We can tell from here that **Home & Furniture** are not doing too well over all regions and need to **improve marketing strategies** and re-evaluate discounts to increase the profit margin.

Sales per product (region wise)



Top 3 average sales

- 1.Apple Laptop
- 2.Tyre
- 3.T-shirts

Top 3 worst products:

- 1.Keyboard
- 2.Curtains
- 3.Car Mat

Wide variance of sales by region

- Invest more in the top 3 to capitalize on their strong market
- Reconsider marketing/innovation approach to lowest 3 products
- Products like Tyres in Canada and Iron in SouthEast Asia, hints at regional demand variations and should focus more on their demands appropriate regions

Best and Worst products

For sales and profits

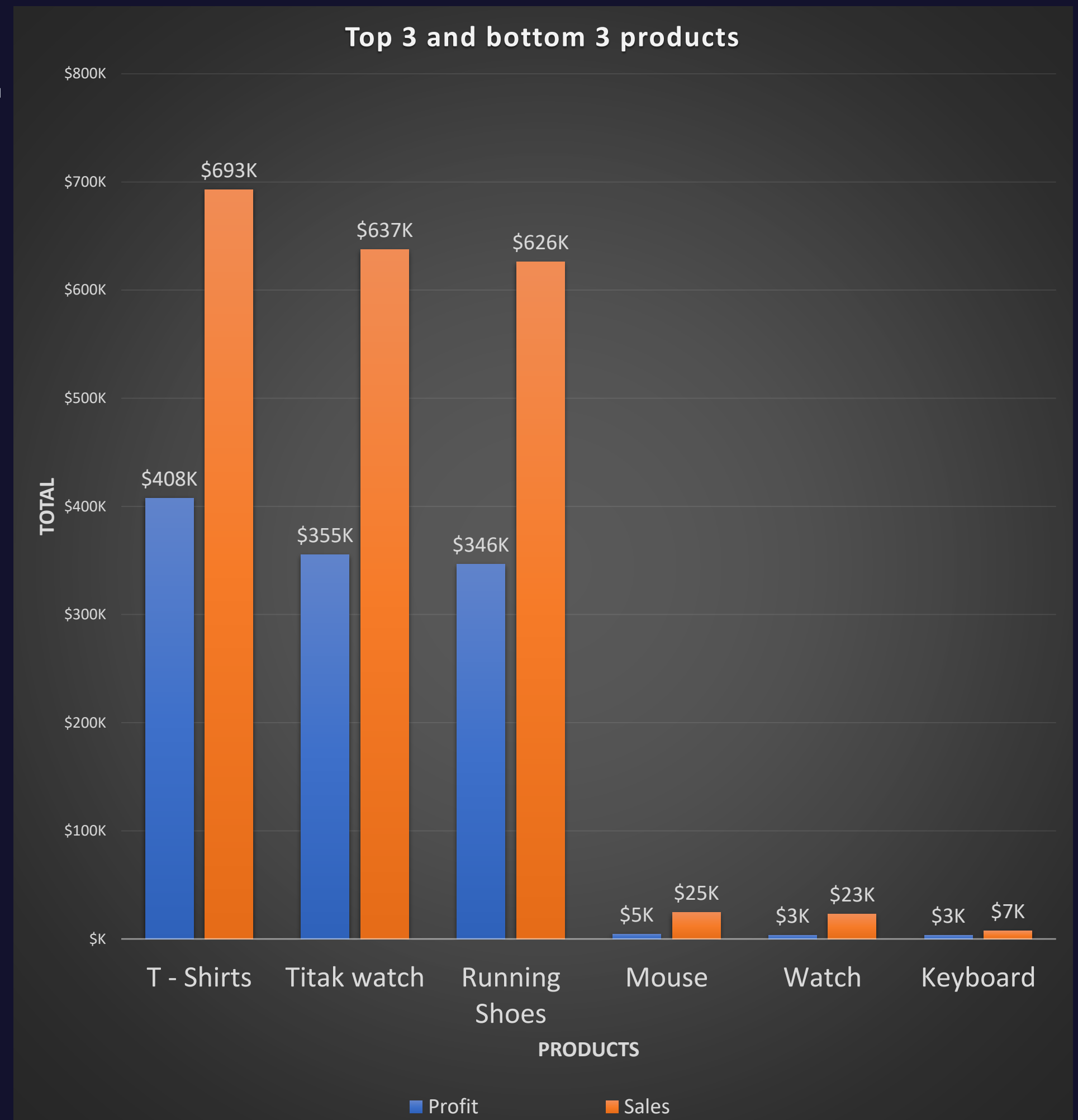
Best products

- 1. T-shirts
- 2. Titak watch
- 3. Running Shoes

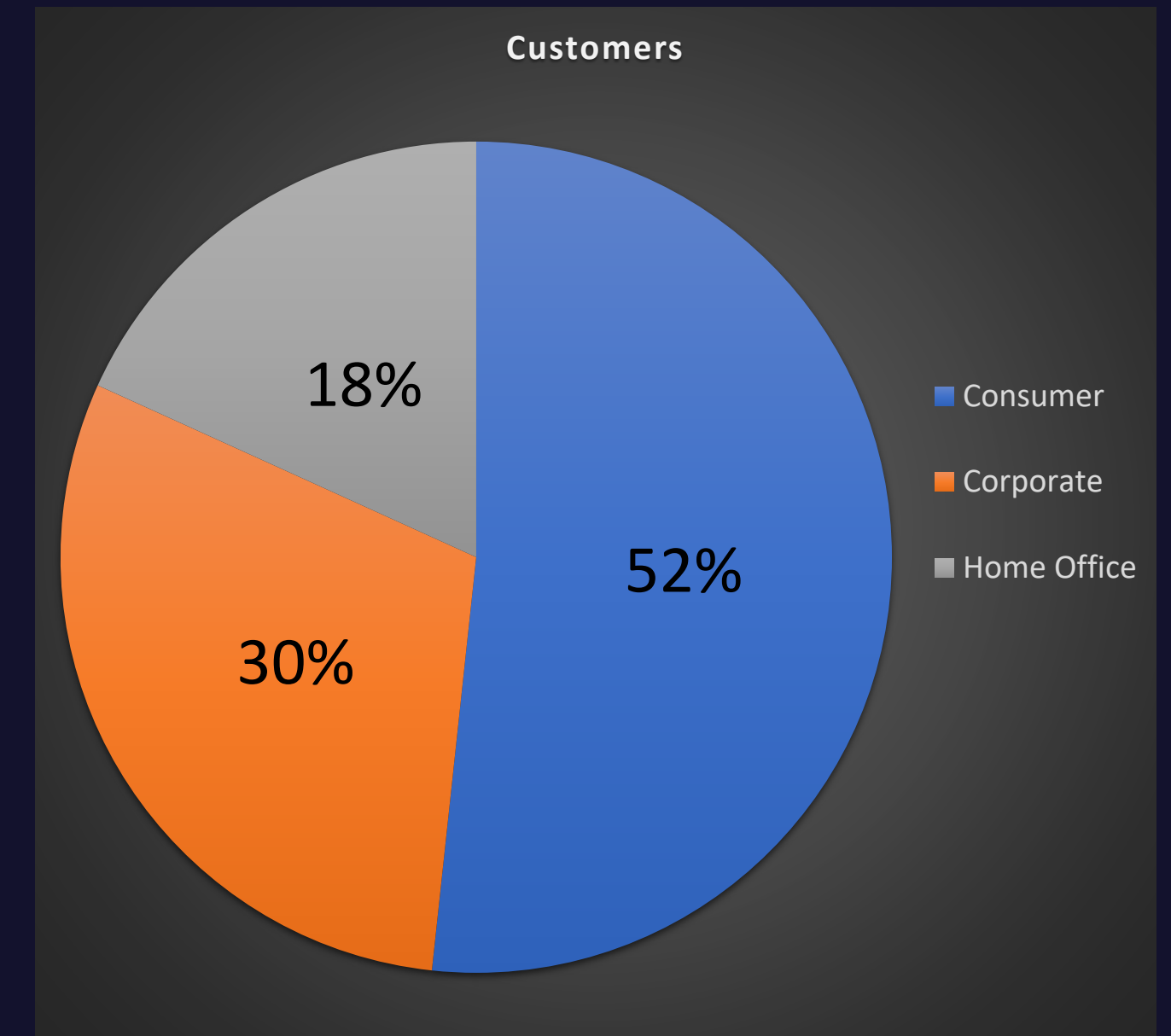
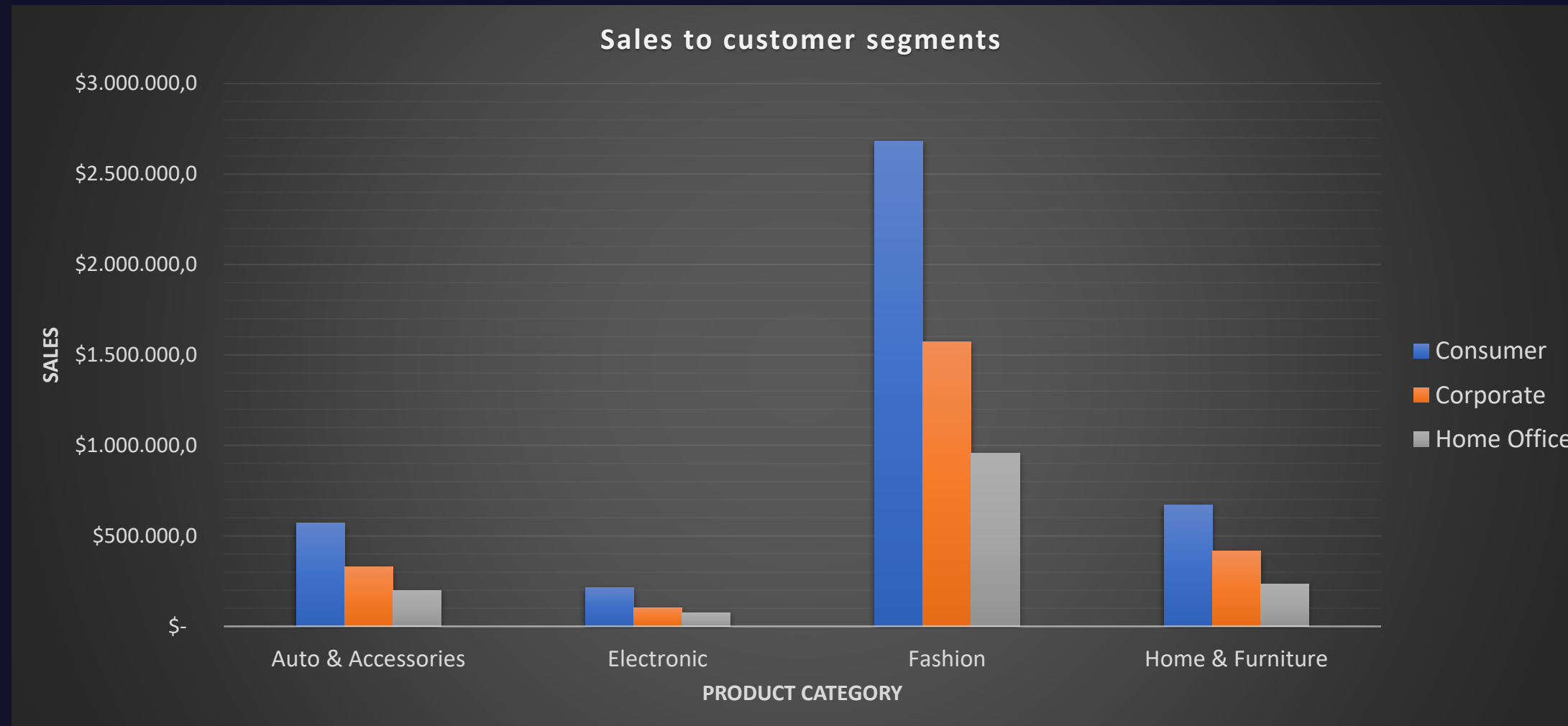
Worst products

- 1. Keyboard
- 2. Watch
- 3. Mouse

NOTE: This is for all regions



Customer segment sales



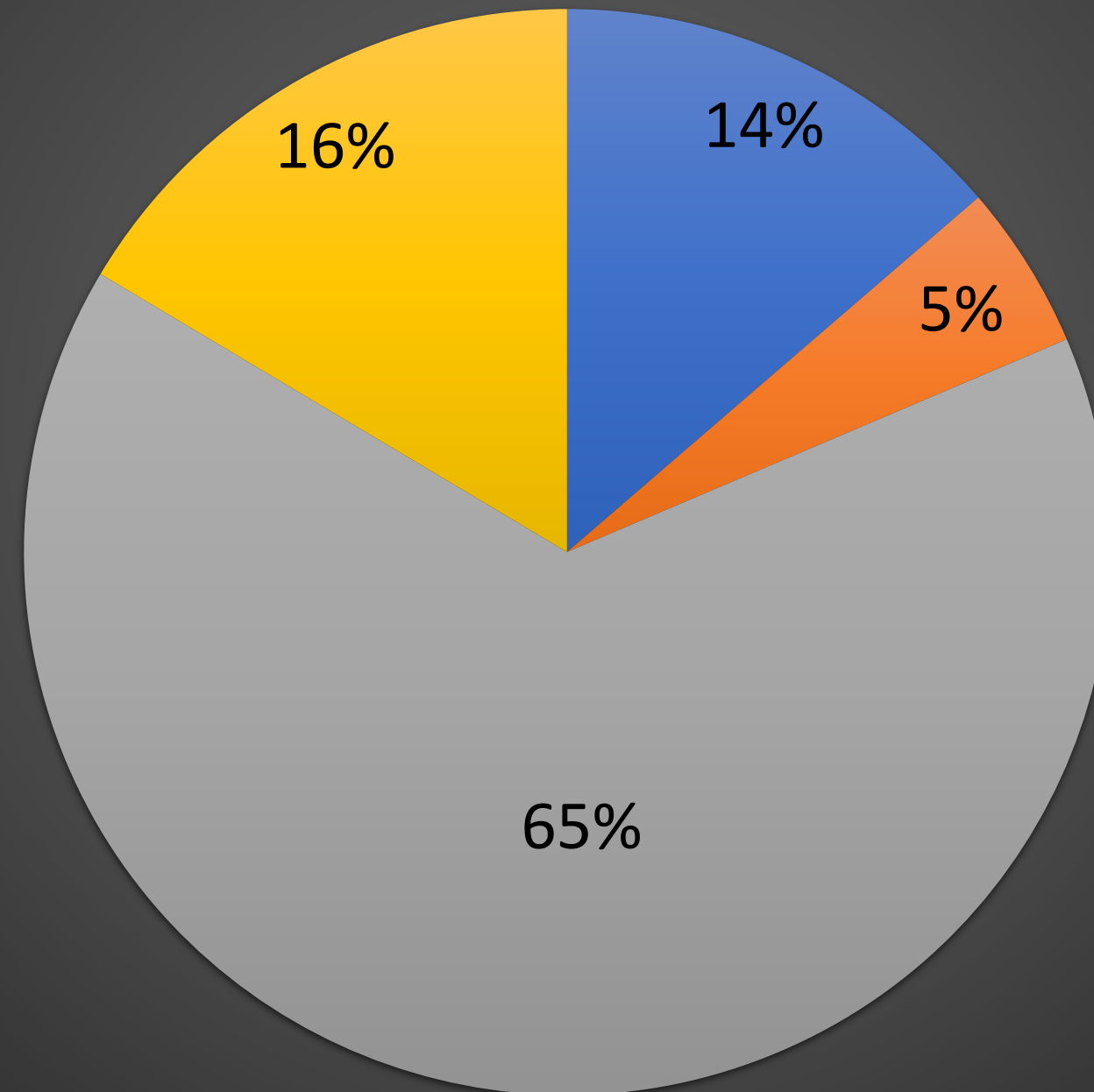
- It shows that more than 50% are **Consumers**
- **Home Office** have the least sales as shipping cost and sales correlate the same way
- All customer segments indulge in the **Fashion** category the most and **Electronics** last.

Product contribution sales

- Most of the sales (65%) are in Fashion (green)
- Smallest sales category is in Electronics (5%) (red)
- With Auto & Accessories and Home & Furniture closely tied at 14% and 16% respectively
- Look into stocking more **inventory** on fashion as it is the leading category
- **Investigate** and **change** products sold in the **Electronics** category to keep up to date with the trendy items

Product sale contribution by category

■ Auto & Accessories ■ Electronic ■ Fashion ■ Home & Furniture



Conclusion

Sales Trends: **December** with highest profit and sales with **February** being the lowest

Regional Performance: **Central** takes the top spot with both sales and profit with **Canada** in last place

Product & Category Insights: **T-shirts, Titak Watches and Running Shoes** taking top 3 in profits while **Keyboards, Watch and Mouse** in last places, but still having positive profit. **Fashion** category is where most customers order from and **Electronics** category are rough that year.

Customer Segments: **Consumers** drive the most sales and quantity sold with **Home office** last place.

Insights & Recommendation

Sales Strategy:

Increase marketing and promotions in Q1 (especially Feb) to boost sales

Stock up on inventory and plan **ad campaigns** for **December** to maximize sales

Regional Focus:

Expand operations and marketing in Central region to capitalize on strong performance

Analyze challenges in Canada's market and **refine marketing efforts and strategies**

Product Strategy:

Invest more in high performing categories such as Fashion which includes T-shirts, Running shoes and Titak watches which are the top 3 best selling products as well

Consider **product innovation** to boost weaker categories like Electronics, which includes Keyboards and mouse products

Customer Segmentation:

Segments customers further for deeper insights and better marketing strategy

Bundling home office essentials, more discounts and awareness campaigns to increase demand

Most & Least profitable products

($\frac{1}{2}$)

Most

Central	South	EMEA	North	Africa	Oceania	SE-Asia
<ul style="list-style-type: none">• T-shirts• Titak Watch• Running Shoes	<ul style="list-style-type: none">• T-shirts• Titak Watch• Running Shoes	<ul style="list-style-type: none">• T-shirts• Titak Watch• Jeans	<ul style="list-style-type: none">• T-shirts• Titak Watch• Running Shoes	<ul style="list-style-type: none">• T-shirts• Titak Watch• Running Shoes	<ul style="list-style-type: none">• T-shirts• Running Shoes• Jeans	<ul style="list-style-type: none">• T-shirts• Titak Watch• Jeans
<ul style="list-style-type: none">• Keyboard• Watch• Mixer / Juicer	<ul style="list-style-type: none">• Keyboard• Watch• Mouse	<ul style="list-style-type: none">• Keyboard• Watch• Mouse	<ul style="list-style-type: none">• Keyboard• Watch• Mouse	<ul style="list-style-type: none">• Keyboard• Watch• Mouse	<ul style="list-style-type: none">• Keyboard• Watch• LCD	<ul style="list-style-type: none">• Keyboard• Watch• Mixer / Juicer

Least

Most & Least profitable products

($\frac{1}{2}$)

Most

West

- T-shirts
- Titak Watch
- Running Shoes

East

- T-shirts
- Titak Watch
- Running Shoes

North-Asia

- T-shirts
- Titak Watch
- Jeans

Central-Asia

- T-shirts
- Titak Watch
- Running Shoes

Carribean

- T-shirts
- Jeans
- Running Shoes

Canada

- T-shirts
- Titak Watch
- Jeans

- Keyboard
- Watch
- Mouse

- Keyboard
- LCD
- Mixer / Juicer

- Keyboard
- Watch
- Mixer / Juicer

- Keyboard
- Watch
- Mouse

- Keyboard
- LCD
- Mouse

- LCD
- Mouse
- Mixer / Juicer

Least

Thank you



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