Sales Analytics

Report

Date : 11.09.2023

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Personal Project

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1) Introduction:

- The '**Superstore Sales**' dataset is a comprehensive and versatile collection of data.

- Provides insights into sales, customer behavior, and product performance.
- Valuable resources for in-depth analysis.
- Containing information from diverse regions and segments, the dataset enables exploration of trends, patterns, and correlations in **sales and customer preferences**.
- The dataset encompasses sales transactions, enabling researchers and analysts to understand buying patterns, identify high-demand products, and assess the effectiveness of different shipping modes.
- Moreover, the dataset provides an opportunity to examine the impact of various factors such as **discounts, geographical locations, and product categories on profitability**.
- By analyzing this dataset, businesses and data enthusiasts can uncover actionable insights for optimizing **pricing strategies, supply chain management, and customer engagement**.

2) Abstract: Goals

1. To Perform **Data Pre-Processing** to clean the data for the **Analysis**.
2. To Perform **Exploratory Data Analysis** and derive **Key Performance Metrics** that is needed for the **Business Decisions**.
3. To Build an **Interactive Dashboard** to **Analyze** the **Trend** of the **data** with **Graphical Visuals**.

3) Softwares Used:

The Software tool used for this Analytics Project is **Microsoft Excel**.

Microsoft Excel

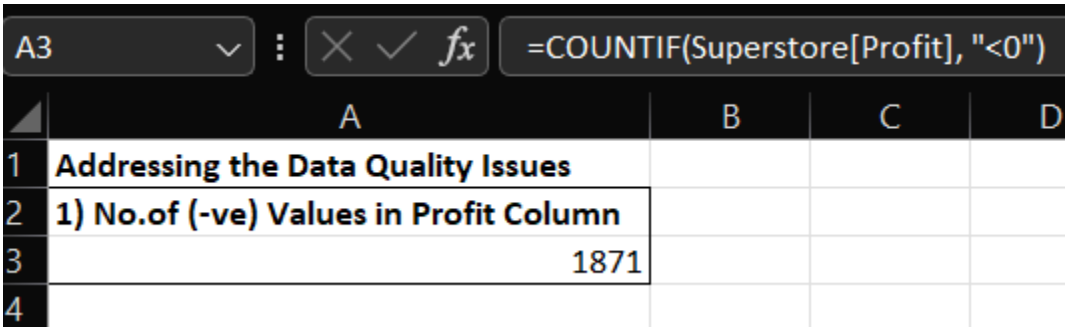
- Microsoft Excel is a spreadsheet editor developed by Microsoft for Windows, MacOs, Android and iOs devices.
- It features calculation or computation capabilities, graphical tools, pivot tables and macro programming language called Visual Basic for Applications.
- Excel forms part of the Microsoft 365 suite software.

4) Data Preprocessing: Data Cleaning

Data Preprocessing is a method of **cleaning data** before **Analyzing** to make sure that we are not displaying **irrelevant information** from the **data.**

1) Issue: Negative Values

- The Issue that we have with our **data** is **Negative Values** in the **Profit Column** which consist of **1871 Negative Values**.
- **DAX Function** is used to identify the number of **Negative Values** in the Dataset, Image is attached below for the **reference**.



5) Exploratory Data Analysis: Key Performance Indicator (KPI)

Exploratory Data Analysis is a method of **Initial Investigation** on the given **Dataset**.

Key Metrics Derived:

The **KPI Metrics** to be delivered are:

1) **Total Sales**
2) **Total Profit**
3) **Profit Margin**
4) **Average Discount**
5) **Total Customers**
6) **Total Orders**
7) **Average Order Value**
8) **Sales by State (Top 10)**
9) **Sales by Sub-Category**
10) **Sales vs Profit by Shipmode**
11) **Sales vs Profit by Quarter, Month**
12) **Top 10 Customers by Sales**
13) **Top Selling Products by Quantity Sold**

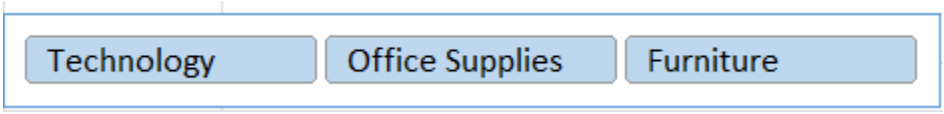
1. **INTERACTIVE FILTERS:**
   - **Interactive Filters** are created to make the **Dashboard** work **Dynamically** for the **Analysis.**

   A. Filter 1 : YEAR (2011, 2012, 2013, 2014)

   This Filter is used to **analyze** the **metrics** on the basis of the **Year**.

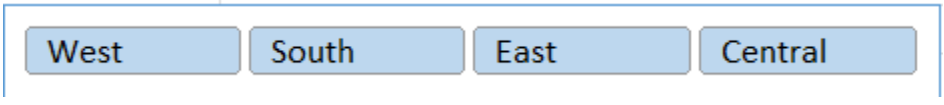
   B. Filter 2 : REGIONS (West, South, East, Central)

   This Filter is used to **analyze** the **metrics** on the basis of **Region**.



   C. Filter 3 : PRODUCT CATEGORIES (Technology, Office Supply, Furniture)

   This Filter is used to **analyze** the **metrics** based on **Product Categories**.



1. **METRIC 1: TOTAL SALES / REVENUE**
    - **Total Sales:** Sum of all sales transactions. This KPI provides an overall view of the revenue generated
    - The **Total Sales** (or) **Total Revenue** is **$22,10,401.98**.
    - Below Image is attached for the **DAX Function Caculation**.

METRIC 1
TOTAL SALES OR REVENUE
$22,10,401.98

CALCULATION:

```
=SUM(Superstore__Preprocessed[Sales])
```

CARD:

2. **METRIC 2: TOTAL PROFIT**
    - **Total Profit:** Sum of profits from all transactions. This helps assess the overall profitability.
    - The **Total Profit** is **$3,13,506.95**.
    - Below Image is attached for the **DAX Function Caculation**.

METRIC 2
TOTAL PROFIT
$3,13,506.95

CALCULATION:

```
=SUM(Superstore__Preprocessed[Profit])
```

CARD:

3. **METRIC 3: PROFIT MARGIN**
    - **Profit Margin:** (Total Profit / Total Sales) * 100. This KPI represents the percentage of profit relative to sales.
    - The **Profit Margin** is **14.18**.
    - Below Image is attached for the **DAX Function Calculation.**

METRIC 3
PROFIT MARGIN
14.18

CALCULATION:

```
=(SUM(Superstore__Preprocessed[Profit])/SUM(Superstore__Preprocessed[Sales]))*100
```

CARD:

4. **METRIC 4: AVERAGE DISCOUNT**
    - **Customer Count:** Count of unique Customer IDs. This tells you the number of unique customers.
    - The **Average Discount** is **14.69**

METRIC 4
DISCOUNT ANALYSIS
14.69

CALCULATION:

```
= AVERAGE(Superstore__Preprocessed[Discount])*100
```

CARD:

5. **METRIC 5: TOTAL CUSTOMER**

- Count of Unique **Customer ID**s. This tells you the number of **Unique Customers**.
- The **Total Customers** is **793**.

METRIC 5
CUSTOMER COUNT
793

CALCULATION:

```
=COUNTA(UNIQUE(Superstore__Preprocessed[Customer ID]))
```

CARD:

6. **METRIC 6: TOTAL ORDERS**
   - Count of unique **Order ID**s. It shows how many orders were placed.

- **Total Orders** is **4941**.

METRIC 6
TOTAL ORDERS
4941

CALCULATION:

```
=COUNTA(UNIQUE(Superstore__Preprocessed[Order ID]))
```

CARD:

7. **METRIC 7: AVERAGE ORDER VALUE (AOV)**
   - Total Sales divided by the Number of Orders(**Unique**). **AOV** indicates the average amount customers spend per order.
   - The **Average Order Value (AOV)** is **$447.36**.

METRIC 7
AVERAGE ORDER VALUE
$447.36

CALCULATION: REVENUE / TOTAL ORDER

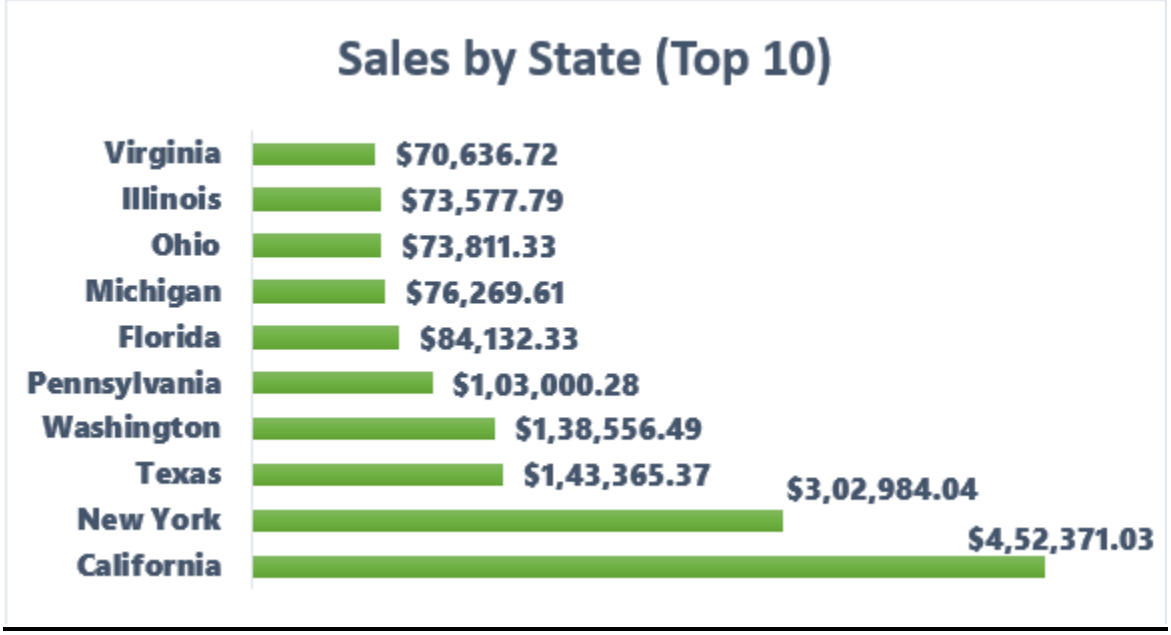
```
= B3/B11
```

CARD:

8. **METRIC 8: SALES BY STATE (TOP 10)**
    - **Sales by State (Top 10):** This generates which state are contributing the most to your overall sales.
    - The most **Sales** generated **State** is **California**, which has generated sales amount of **$4,52,371.03**.

Row Labels	Sum of Sales
California	$4,52,371.03
New York	$3,02,984.04
Texas	$1,43,365.37
Washington	$1,38,556.49
Pennsylvania	$1,03,000.28
Florida	$84,132.33
Michigan	$76,269.61
Ohio	$73,811.33
Illinois	$73,577.79
Virginia	$70,636.72
Grand Total	**$15,18,705.00**

CHART :

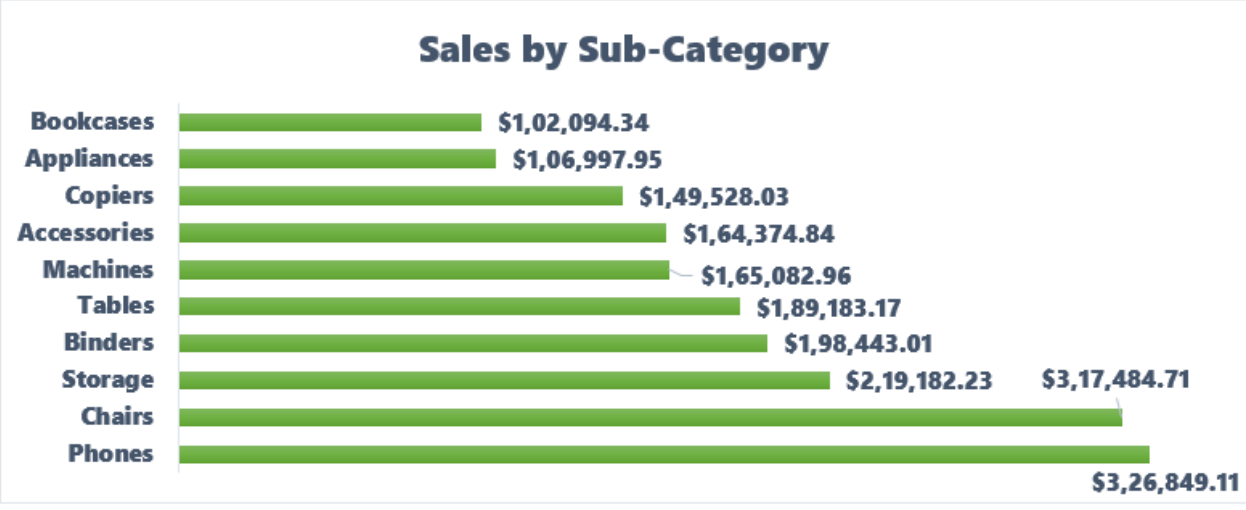


9. **METRIC 9: SALES BY SUB-CATEGORY**

- **Sales by Sub-Category:** The sum of Sales grouped by Product Sub-Category. THis shows which Product subcategories are the most profitable.
- The most **Sales** generated **Product Sub-Category** is **Phones**, which has generated an amount of **$3,26,849.11**.

Row Labels	Sum of Sales
Phones	$3,26,849.11
Chairs	$3,17,484.71
Storage	$2,19,182.23
Binders	$1,98,443.01
Tables	$1,89,183.17
Machines	$1,65,082.96
Accessories	$1,64,374.84
Copiers	$1,49,528.03
Appliances	$1,06,997.95
Bookcases	$1,02,094.34
Grand Total	**$19,39,220.35**

CHART :

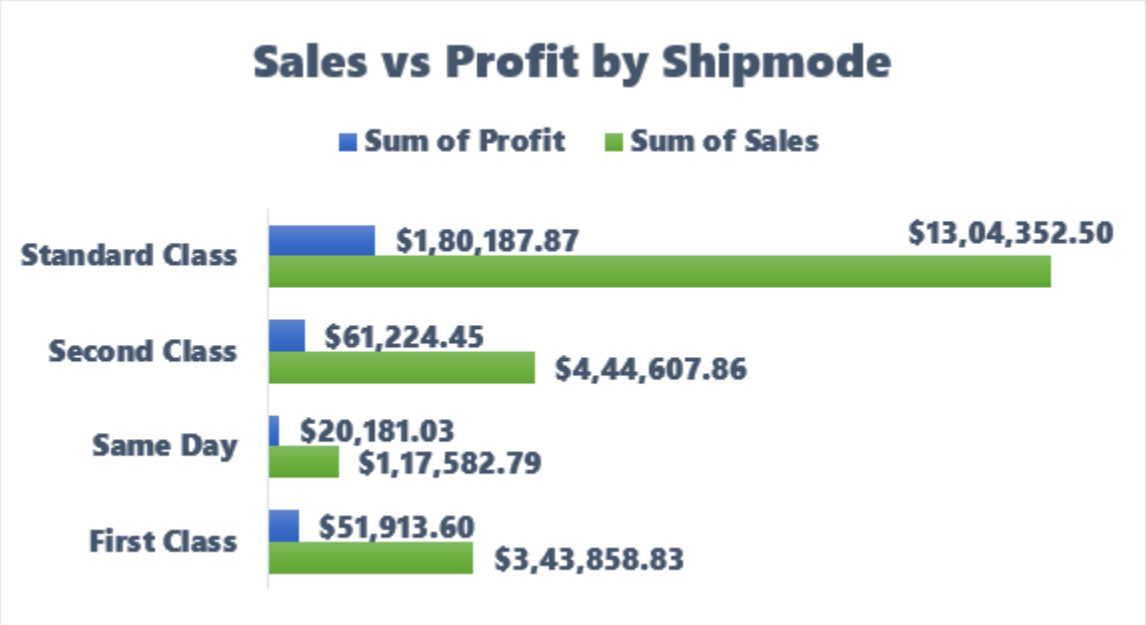


10. **METRIC 10: SALES vs PROFIT by SHIPMODE**

- **Sales vs Profit by Shipmode:** This shows overall characteristics of sales by Shipmode.
- The Shipmode of **Standard Class** has generated huge **Sales** amount of **$13,04,352.50**.

Row Labels	Sum of Sales	Sum of Profit
First Class	$3,43,858.83	$51,913.60
Same Day	$1,17,582.79	$20,181.03
Second Class	$4,44,607.86	$61,224.45
Standard Class	$13,04,352.50	$1,80,187.87
Grand Total	**$22,10,401.98**	**$3,13,506.95**

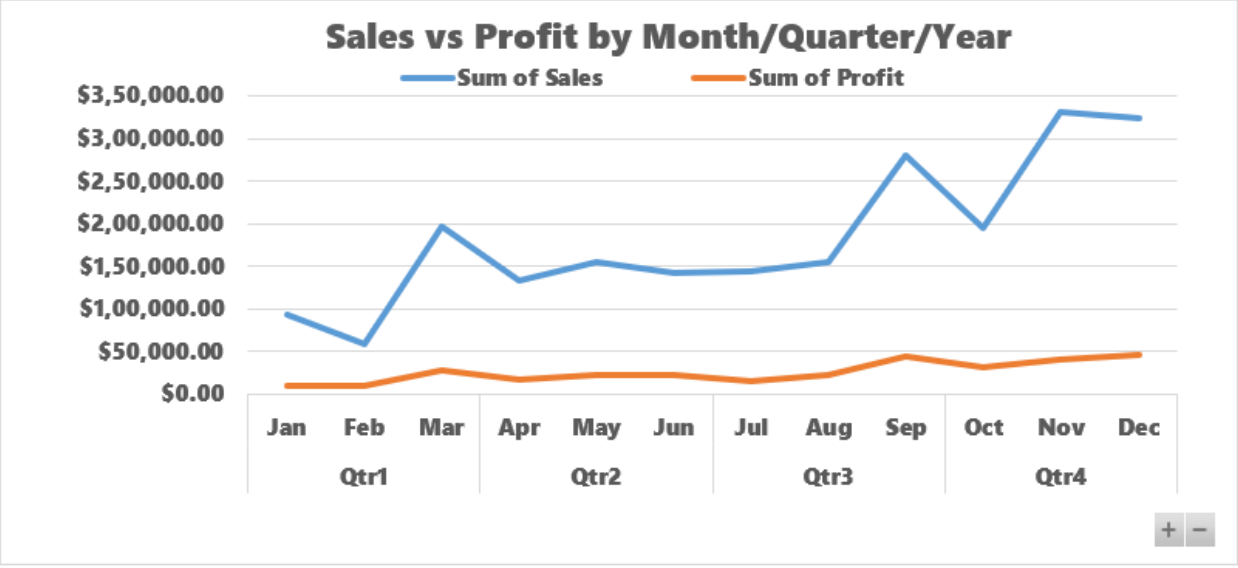
CHART :



11. **METRIC 11: SALES vs PROFIT by MONTH/QUARTER**
    - **Sales vs Profit by Month / Quarter / Year:** This actually generates trend of Sales by Month
    - The Overall Performance of **Sales** and **Profit** has grew in the month of **December** or **Quarter 4**.

Row Labels	Sum of Sales	Sum of Profit
Qtr1		
Jan	$92,829.34	$10,901.19
Feb	$58,945.76	$10,412.71
Mar	$1,96,739.27	$27,735.18
Qtr2		
Apr	$1,33,854.69	$17,957.70
May	$1,55,101.13	$22,550.10
Jun	$1,42,851.94	$22,329.59
Qtr3		
Jul	$1,44,437.39	$14,705.79
Aug	$1,54,384.08	$23,131.14
Sep	$2,81,311.38	$44,489.14
Qtr4		
Oct	$1,95,181.15	$32,189.59
Nov	$3,31,161.99	$41,305.32
Dec	$3,23,603.86	$45,799.51
Grand Total	**$22,10,401.98**	**$3,13,506.95**

CHART :



12. **METRIC 12: TOP 10 CUSTOMERS by SALES**

- **Top Customers by Sale:** Lists out Top 10 customers who have generated maximum Sales.
- **Sean Miller** is our **Top Customer**, who has generated **Sales** amount of **$25,043.05**.

Row Labels	Sum of Sales	Sum of Profit
Sean Miller	$25,043.05	-$1,980.74
Tamara Chand	$19,052.22	$8,981.32
Raymond Buch	$15,117.34	$6,976.10
Tom Ashbrook	$14,595.62	$4,703.79
Adrian Barton	$14,080.41	$5,649.25
Sanjit Chand	$14,012.77	$5,781.71
Ken Lonsdale	$13,562.59	$1,291.60
Hunter Lopez	$12,873.30	$5,622.43
Sanjit Engle	$12,209.44	$2,650.68
Christopher Cona	$12,127.82	$2,178.98
Grand Total	**$1,52,674.55**	**$41,855.12**

CHART ;

Top Customers by Sales vs Profit

Customers	Sales	Profit
Sean Miller	$25,043.05	($1,980.74)
Tamara Chand	$19,052.22	$8,981.32
Raymond Buch	$15,117.34	$6,976.10
Tom Ashbrook	$14,595.62	$4,703.79
Adrian Barton	$14,080.41	$5,649.25
Sanjit Chand	$14,012.77	$5,781.71
Ken Lonsdale	$13,562.59	$1,291.60
Hunter Lopez	$12,873.30	$5,622.43
Sanjit Engle	$12,209.44	$2,650.68
Christopher Conant	$12,127.82	$2,178.98

13. **METRIC 13: TOP PRODUCTS by QUANTITY SOLD**
    - **Top Products by Quantity Sold:** Lists out Top 10 Product Names which was sold at highest quantity vs generated Sales.
    - **Staples** is the **Best Product**, which has sold out in **Quantity** of **867**.

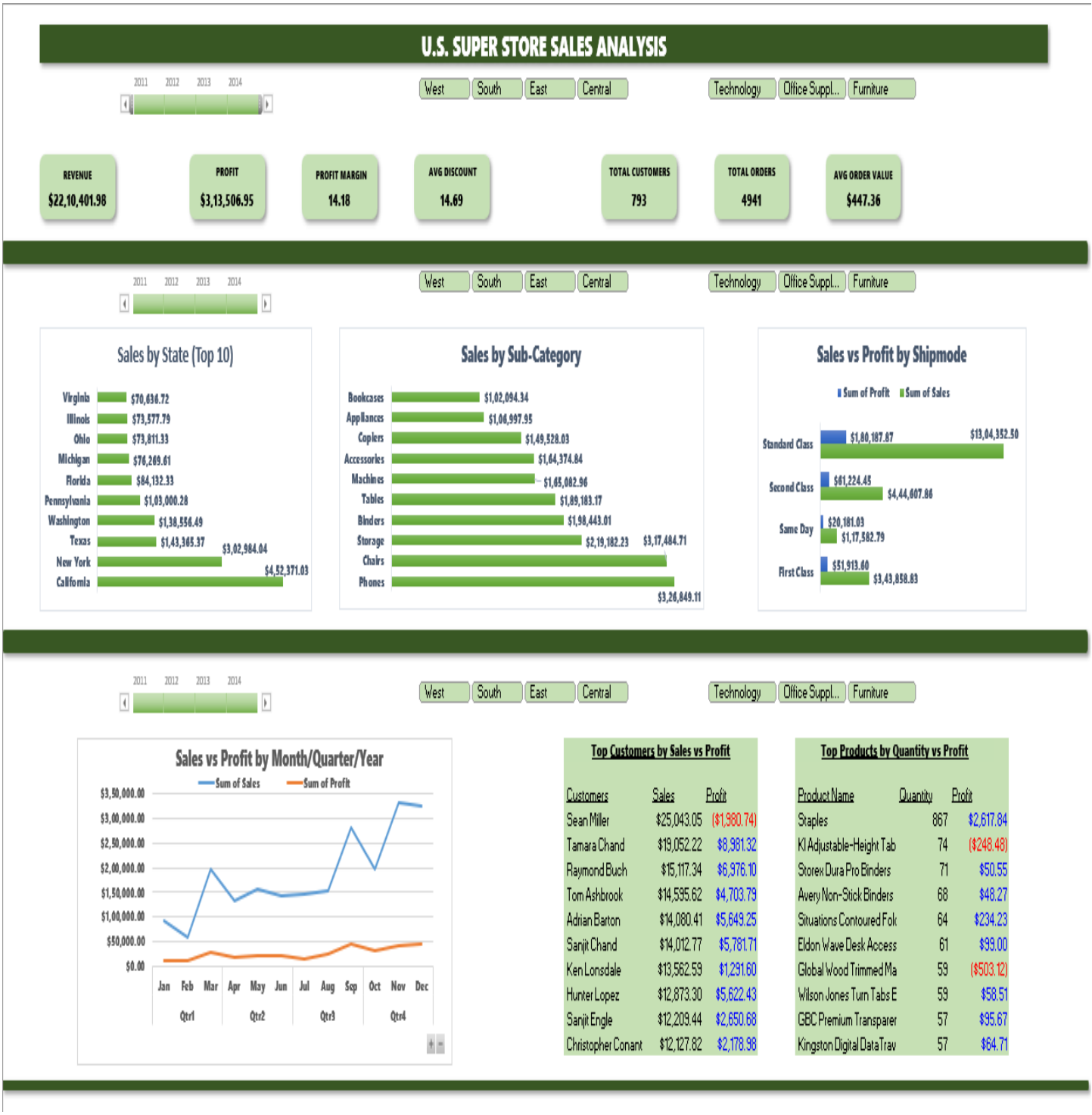
Row Labels	Sum of Quantity	Sum of Profit
Staples	867.00	$2,617.84
KI Adjustable-Height Table	74.00	-$248.48
Storex Dura Pro Binders	71.00	$50.55
Avery Non-Stick Binders	68.00	$48.27
Situations Contoured Folding Chairs, 4/Set	64.00	$234.23
Eldon Wave Desk Accessories	61.00	$99.00
Global Wood Trimmed Manager's Task Chair, Khaki	59.00	-$503.12
Wilson Jones Turn Tabs Binder Tool for Ring Binders	59.00	$58.51
GBC Premium Transparent Covers with Diagonal Lined Pattern	57.00	$95.67
Kingston Digital DataTraveler 16GB USB 2.0	57.00	$64.71
Grand Total	**1437.00**	**$2,517.18**

CHART :

Top Products by Quantity vs Profit

Product Name	Quantity	Profit
Staples	867	$2,617.84
KI Adjustable-Height Ta	74	($248.48)
Storex Dura Pro Binders	71	$50.55
Avery Non-Stick Binder:	68	$48.27
Situations Contoured Fo	64	$234.23
Eldon Wave Desk Acces:	61	$99.00
Global Wood Trimmed I	59	($503.12)
Wilson Jones Turn Tabs	59	$58.51
GBC Premium Transpare	57	$95.67
Kingston Digital DataTr	57	$64.71

Final Dashboard:



Conclusion:

The **Final Dashboard** helps us to discover the **Trends** and **Patterns** underlying in the **Data** to take the necessary decisions in the **Business**.

KEY FINDINGS:

1. **Year 2014** has the highest **Revenue** of **$7,13,615.71**, compared to other **three years**.
2. **West Region** has generated the highest **Revenue** of **$7,14,625.79**, compared to **other regions**.
3. **Technology Category** of the **Product** has generated the highest **Revenue** of **$8,05,834.93**, compared to **other product categories**.

Therefore coming to the Product Sales and Customer Behaviour, we should concentrate more on the West **Region** and on **Technology** categorized products.

Thank You

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