

End to End Power Bi Project Guide

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Power BI Project Guide: From Data Preparation to Deployment

This Power BI project aims to transform raw data into interactive dashboards and insightful visualizations to support data-driven decision-making. By leveraging Power BI's powerful features like data modeling, DAX formulas, and real-time analytics, the project provides clear insights into key business metrics. It enables users to explore trends, identify patterns, and make informed strategic decisions. The project ensures enhanced data visibility and improved reporting efficiency.

Establish Deliverables: The final product should be interactive dashboards that show:

- Regional performance.
- Product category trends.
- Sales channel comparisons.
- Order priority analysis.

Data Preparation

Data preparation involves collecting, cleaning, and transforming raw data into a structured format suitable for analysis. It ensures data accuracy, consistency, and readiness for creating meaningful visualizations in Power BI.

Data Cleaning Examples:

- **Removing Duplicates:**
 - Drop duplicates based on Order ID:
 - `data.drop_duplicates(subset='Order ID', inplace=True)`
- **Removing Extra Spaces**
 - `= Table.TransformColumns(Source, {"ColumnName", Text.Trim})`
- **Replacing Blank or Null Values**
 - `= Table.ReplaceValue(Source, null, "Unknown", Replacer.ReplaceValue, {"ColumnName"})`

Transformations

Power BI Transformations with Formulas

1. Remove Columns

Description: Deletes unnecessary columns from your dataset. **Formula:**

= Table.RemoveColumns(#"Previous Step", {"Order Priority", "Order ID"})

The screenshot shows the Power Query Editor interface with the 'Remove Columns' step selected. The formula bar at the top contains the formula: = Table.RemoveColumns(#"Changed Type", {"Order Priority", "Order ID"}). The main grid displays a table with various columns like Region, Country, Item Type, Sales Channel, Order Date, Ship Date, etc. The 'Applied Steps' pane on the right shows the step 'Removed Columns'.

2. Rename Columns

Description: Changes column names for clarity or consistency. **Formula:**

= Table.RenameColumns(#"Previous Step", {"Units Sold", "Quantity Sold"}, {"Ship Date", "Delivery Date"})

The screenshot shows the Power Query Editor interface with the 'Rename Columns' step selected. The formula bar at the top contains the formula: = Table.RenameColumns(#"Removed Columns", {"Units Sold", "Quantity Sold"}, {"Ship Date", "Delivery Date"}). The main grid displays a table with columns renamed from 'Units Sold' and 'Quantity Sold' to 'Delivery Date' and 'Unit Price'. The 'Applied Steps' pane on the right shows the step 'Renamed Columns'.

3. Replace Values

Description: Replaces specific values (e.g., nulls with "Unknown"). **Formula:**

= Table.ReplaceValue(#"Previous Step", null, "Unknown", Replacer.ReplaceValue, {"Sales Channel"})

The screenshot shows the Power Query Editor interface. The formula bar at the top contains the formula: = Table.ReplaceValue(#"Renamed Columns",null,"Unknown",Replacer.ReplaceValue,{"Sales Channel"}). The 'APPLIED STEPS' pane on the right shows the 'Replaced Value' step under the 'Source' category. The main table view shows data from various countries with columns for Sales Channel, Order Date, Delivery Date, and Unit Price.

4. Change Data Type

Description: Modifies a column's data type (e.g., text to date). **Formula:**

= Table.TransformColumnTypes(#"Previous Step", {"Order Date", type date}, {"Ship Date", type date})

The screenshot shows the Power Query Editor interface. The formula bar at the top contains the formula: = Table.TransformColumnTypes(#"Promoted Headers", {"Region", type text}, {"Country", type text}, {"Item Type", type text}, {"Sales". The 'APPLIED STEPS' pane on the right shows the 'Changed Type' step under the 'Source' category. The main table view shows data with various columns and their corresponding data types.

5. Split Column

Description: Splits a column by a delimiter, position, or length. **Formula:**

= Table.SplitColumn(#"Previous Step", "Region", Splitter.SplitTextByDelimiter("-", QuoteStyle.Csv))

6. Merge Columns

Description: Combines multiple columns into one, using a delimiter. **Formula:**

= Table.CombineColumns(#"Previous Step", {"Country", "Region"}, Combiner.CombineTextByDelimiter("-", QuoteStyle.None), "Country-Region")

7. Group By

Description: Aggregates data by a specific column (e.g., sum, average). **Formula:**

= Table.Group(#"Previous Step", {"Region"}, {"Total Revenue", each List.Sum([Total Revenue]), type nullable number})

The screenshot shows the Power Query Editor interface with the 'Applied Steps' pane open, displaying the 'Grouped Rows' step. The main preview area shows a table with columns 'Region' and 'Total Revenue'. The 'Region' column has 7 distinct values, and the 'Total Revenue' column has 7 distinct values. The preview data includes rows for Sub-Saharan Africa, Middle East and North Africa, Australia and Oceania, Europe, Asia, Central America and the Caribbean, and North America, with their respective total revenues.

8. Pivot Columns

Description: Transforms rows into columns for better structure. **Formula:**

= Table.Pivot(#"Previous Step", List.Distinct(#"Previous Step"[Item Type]), "Item Type", "Total Revenue", List.Sum)

The screenshot shows the Power Query Editor interface with the 'Applied Steps' pane open, displaying the 'Pivoted Column' step. The main preview area shows a table with columns 'Region', 'Country', 'Sales Channel', 'Order Priority', 'Order Date', 'Order ID', and 'Ship'. The data is grouped by Region, Country, Sales Channel, and Order Priority, with specific dates and IDs for each group. The preview data includes rows for various regions like Asia, Europe, and North America, with multiple countries and sales channels per region.

9. Unpivot Columns

Description: Converts columns into rows to normalize data. **Formula:**

= Table.UnpivotColumns(#"Previous Step", {"Total Revenue", "Total Cost", "Total Profit"}, "Metric", "Value")

The screenshot shows the Power Query Editor interface with the 'Unpivot' step applied. The 'Applied Steps' pane indicates 'Unpivot Only Selected Columns'. The preview pane displays the unpivoted data with 999 rows and 13 columns. The columns are: Order, Date, Unit Price, Total Revenue, Total Cost, Total Profit, Metric, and Value.

10. Add Conditional Column

Description: Adds a new column with values based on conditional logic. **Formula:**

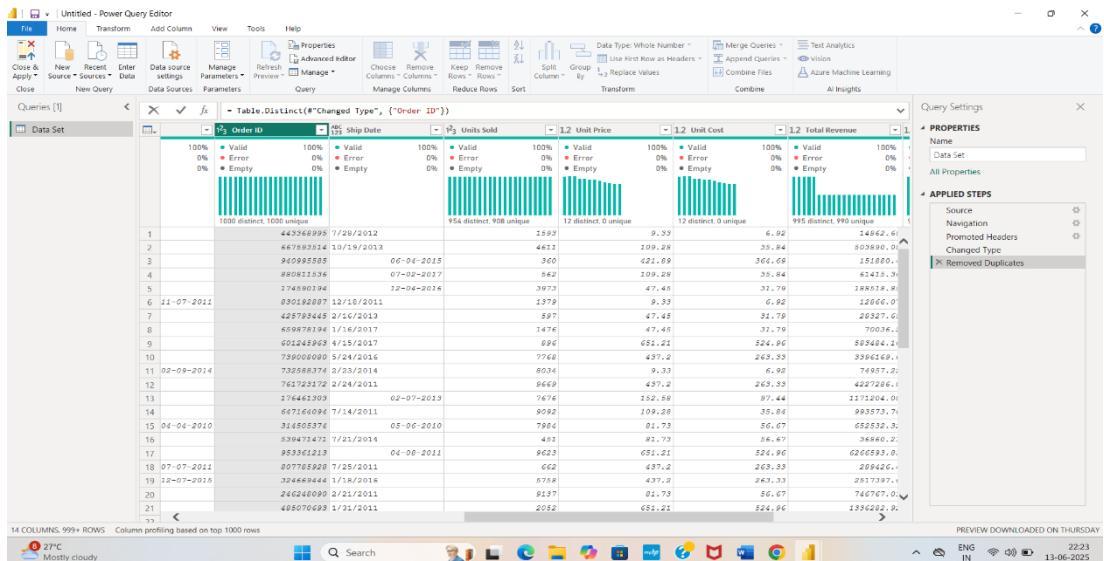
= Table.AddColumn(#"Previous Step", "Profitability", each if [Total Profit] / [Total Revenue] > 0.2 then "High" else "Low")

The screenshot shows the Power Query Editor interface with the 'Add Column' step applied. The 'Applied Steps' pane indicates 'Added Custom'. The preview pane displays the table with an additional column 'Custom' added based on the conditional formula. The table has 15 columns and 999 rows.

11. Remove Duplicates

Description: Eliminates duplicate rows in the dataset. **Formula:**

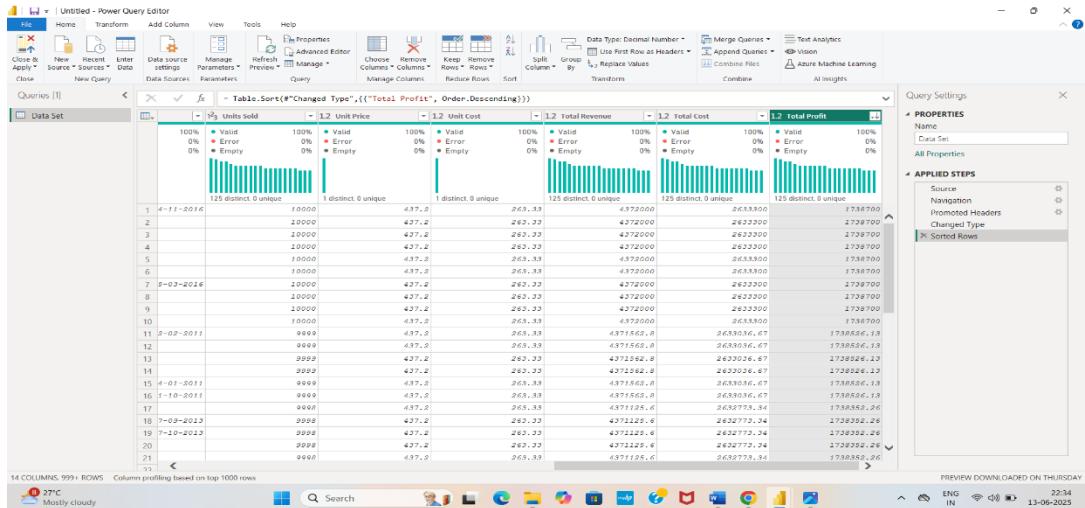
= Table.Distinct(#"Previous Step", {"Order ID"})



12. Sort Data

Description: Orders rows by a column ascending or descending. **Formula:**

= Table.Sort(#"Previous Step", {"Total Profit", Order.Descending})



13. Filter Rows

Description: Removes rows based on specific conditions. **Formula:**

= Table.SelectRows(#"Previous Step", each [Sales Channel] = "Online")

14 COLUMNS, 999+ ROWS Column profiling based on top 1000 rows

PREVIEW DOWNLOADED ON THURSDAY

27°C Mostly cloudy

ENG IN 22:33 13-06-2023

14. Append Queries

Description: Combines two or more datasets vertically. **Formula:**

= Table.Combine({Orders2024, Orders2025})

32 COLUMNS, 999+ ROWS Column profiling based on top 1000 rows

PREVIEW DOWNLOADED ON 25 MAY 2025

27°C Mostly cloudy

ENG IN 23:32 13-06-2023

15. Merge Queries

Description: Joins datasets horizontally based on a common column. **Formula:**

= Table.NestedJoin(Orders, {"Region"}, Regions, {"Region"}, "MergedTable", JoinKind.Inner)

16. Extract Text

Description: Retrieves a portion of text (e.g., first 5 characters). **Formula:**

= Table.TransformColumns#"Previous Step", {"Order ID": each Text.Start(_, 5), type text})

The screenshot shows the Power Query Editor interface with a table titled "Table.TransformColumns(#'Sorted Rows', {"[Order ID", each Text.Start(Text.From(_,"en-IN"), 5), type text}"). The table contains 19 columns and 999 rows. The "Applied Steps" pane on the right shows the step "Extracted first characters". The status bar at the bottom indicates "PREVIEW DOWNLOADED ON FRIDAY" and "15-06-2023 15:12".

17. Transpose Table

Description: Switches rows and columns in your table. **Formula:**

= Table.Transpose(#"Previous Step")

18. Calculate Column Index

Description: Adds an index column to track row positions. **Formula:**

= Table.AddIndexColumn(#"Previous Step", "Index", 1, 1, Int64.Type)

The screenshot shows the Power Query Editor interface with a table titled "Table.AddIndexColumn(#'Changed Type', "Index", 1, 1, Int64.Type)". The table contains 15 columns and 999 rows. The "Applied Steps" pane on the right shows the step "Added Index". The status bar at the bottom indicates "PREVIEW DOWNLOADED AT 10:44" and "14-06-2023 11:01".

19. Fill Down/Up

Description: Fills null cells with values from above or below. **Formula:**

= Table.FillDown(#"Previous Step", {"Region"})

The screenshot shows the Power Query Editor interface with the 'Applied Steps' pane open, highlighting the 'Filled Down' step. The main area displays a table with columns: Region, Country, Item Type, Sales Channel, Order Priority, and Order Date. The 'Region' column contains various regional names like South Africa, Middle East and North Africa, Australia and Oceania, etc. The 'Item Type' column shows categories like Fruits, Snacks, Cosmetics, etc. The 'Sales Channel' column includes Offline and Online. The 'Order Priority' and 'Order Date' columns show specific dates. The 'Filled Down' step is listed under the 'Applied Steps' pane.

20. Add Custom Column

Description: Uses M language expressions to create a calculated column. **Formula:**

= Table.AddColumn(#"Previous Step", "Profit Margin", each [Total Profit] / [Total Revenue] * 100, type number)

The screenshot shows the Power Query Editor interface with the 'Applied Steps' pane open, highlighting the 'Added Custom' step. The main area displays a table with columns: Unit Price, Unit Cost, Total Revenue, Total Cost, Total Profit, and Profit Margin. The 'Profit Margin' column is the newly added calculated column. The 'Added Custom' step is listed under the 'Applied Steps' pane.

Data Modelling

Data modelling is where you define relationships and create measures.

Steps in Power BI:

- **Data Import:**
 - Import the cleaned and transformed dataset into Power BI.
- **Data Relationships:**
 - Define relationships between different tables. For example, connect the Region table to the Country table.
- **Optimized Table Design:**
 - Create lookup tables (e.g., for Region, Country, and Item Type) to reduce redundancy.
- **Measures Creation:**
 - Use **DAX** to create calculated fields. For example, calculate Profit Margin:
$$\text{Profit Margin} = \text{DIVIDE}([\text{Total Profit}], [\text{Total Revenue}]) * 100$$

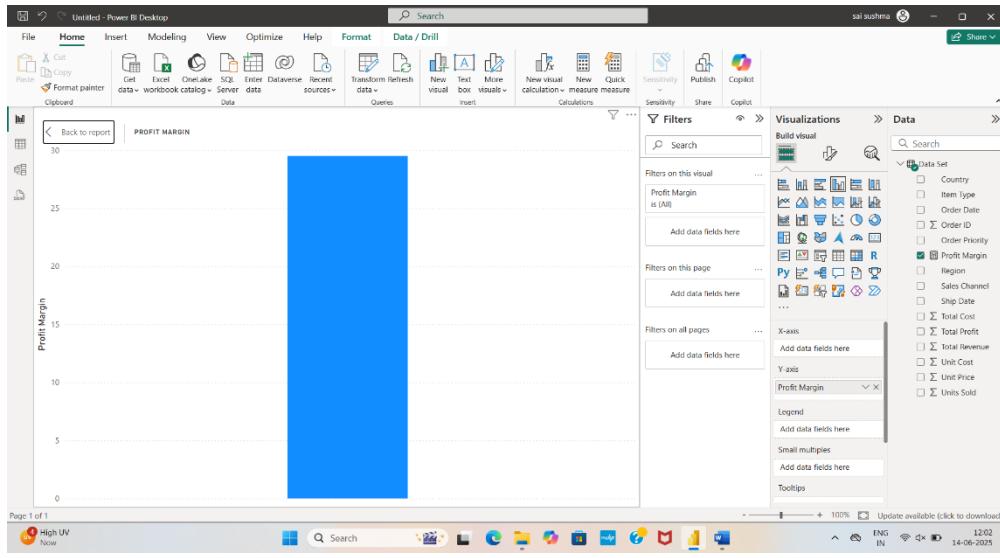
DAX Functions

Power BI DAX Formulas for Common Use Cases

1. Calculated Columns

Create new columns based on calculations:

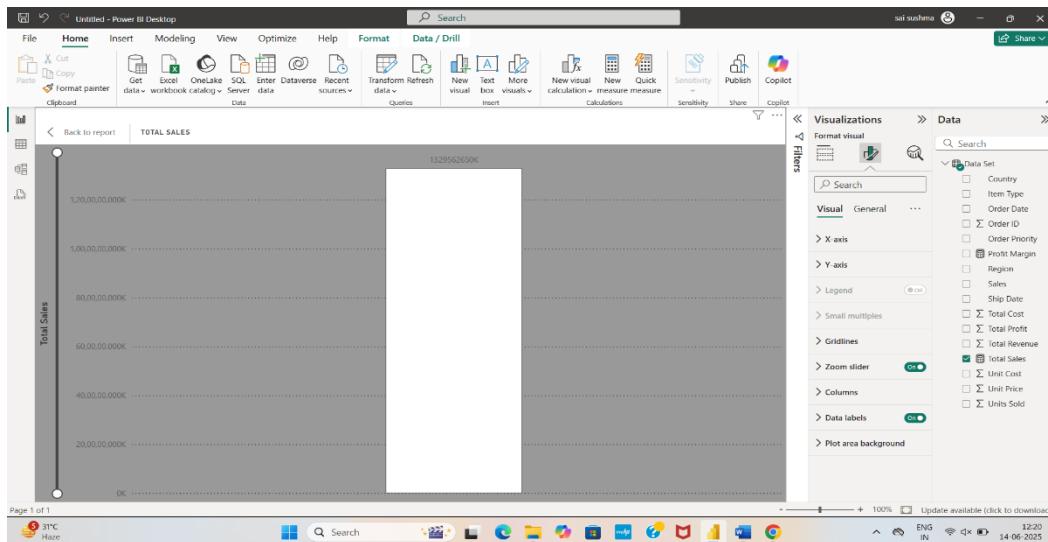
$$\text{Profit Margin} = \text{Sales[Total Profit]} / \text{Sales[Total Revenue]} * 100$$



2. Calculated Measures

Define aggregations:

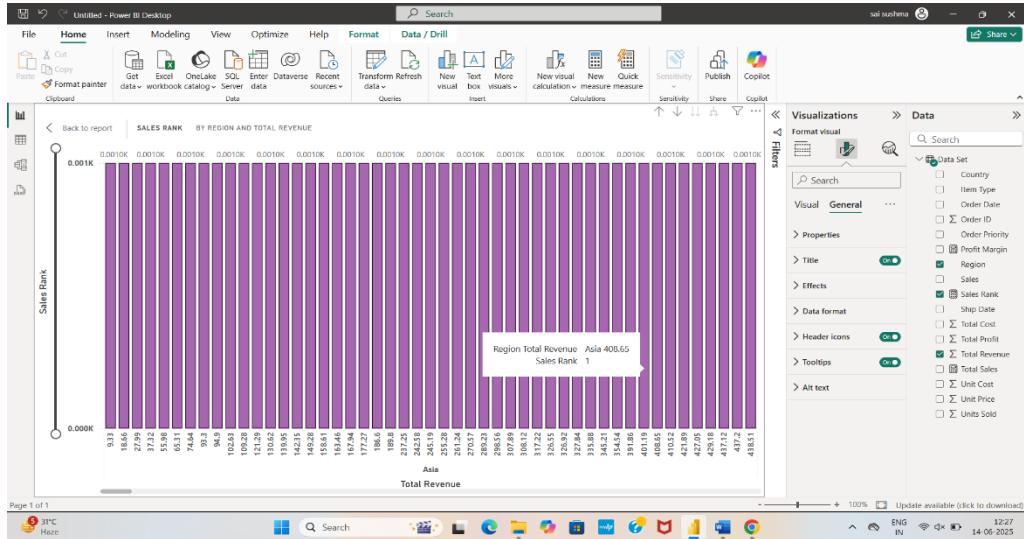
$$\text{Total Sales} = \text{SUM}(\text{Sales[Total Revenue]})$$



3. Add Ranking

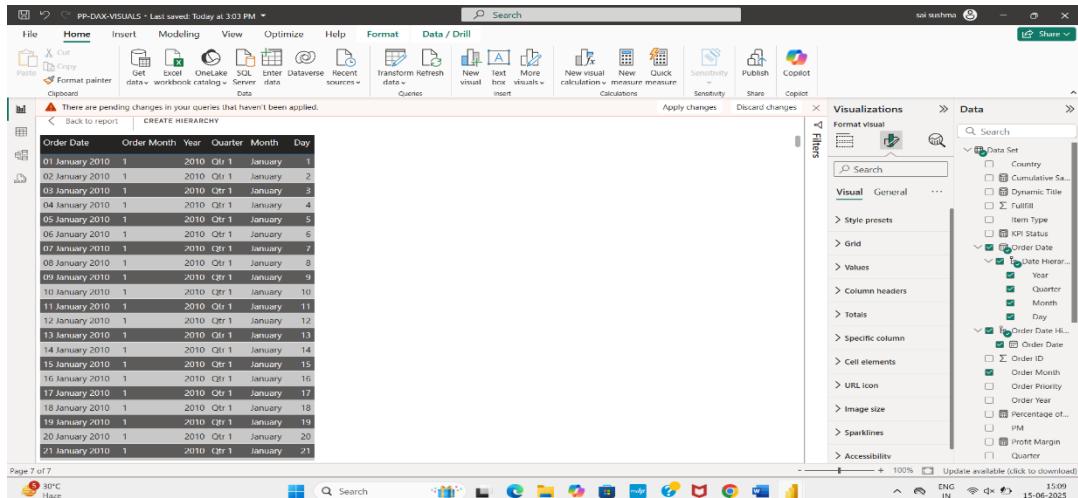
Assign rank values to data:

$$\text{Sales Rank} = \text{RANKX}(\text{ALL}(\text{Sales[Region]}), \text{SUM}(\text{Sales[Total Revenue]}), , \text{DESC})$$



4. Create Hierarchies

Organize columns into hierarchies: No specific formula; use the **Modeling tab** in Power BI Desktop to drag and drop columns into a hierarchy (e.g., Year > Quarter > Month).

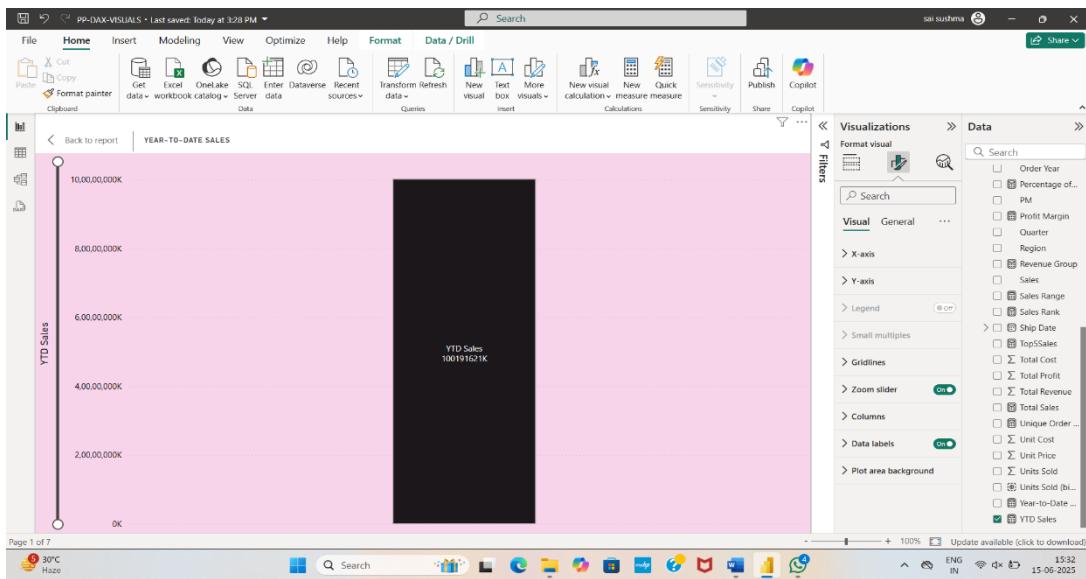


5. Time Intelligence Calculations

Perform date-based calculations:

$$\text{Year-to-Date Sales} = \text{TOTALYTD}(\text{SUM}(\text{Sales[Total Revenue]}), \text{Sales[Order Date]})$$

Previous Year Sales = CALCULATE(SUM(Sales[Total Revenue]),
SAMEPERIODLASTYEAR(Sales[Order Date]))



6. Dynamic Segmentation

Create dynamic groups using measures:

Revenue Group = SWITCH(

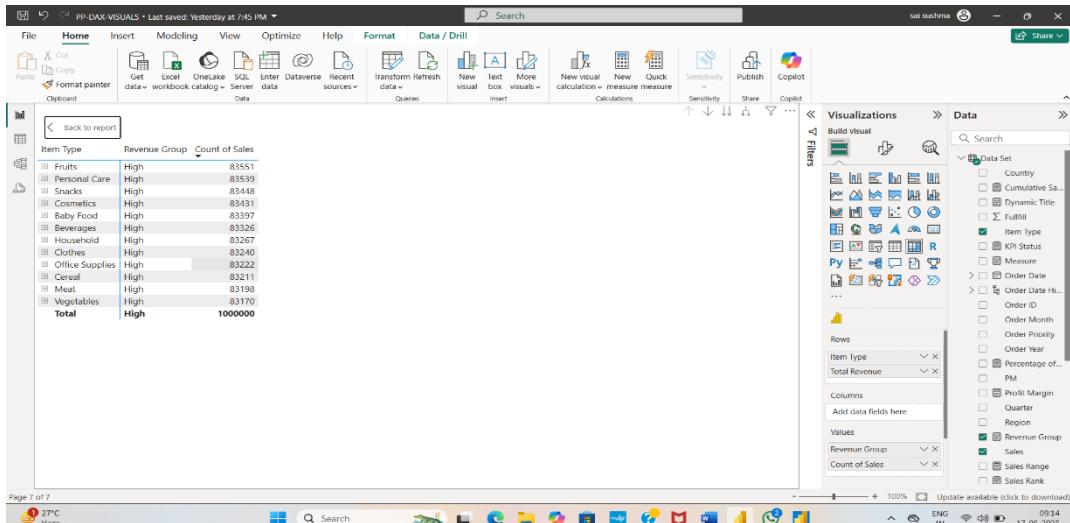
TRUE(),

Sales[Total Revenue] < 5000, "Low",

Sales[Total Revenue] < 10000, "Medium",

"High"

)



7. Cumulative Totals

Calculate running totals:

Cumulative Sales = CALCULATE(

SUM(Sales[Total Revenue]),

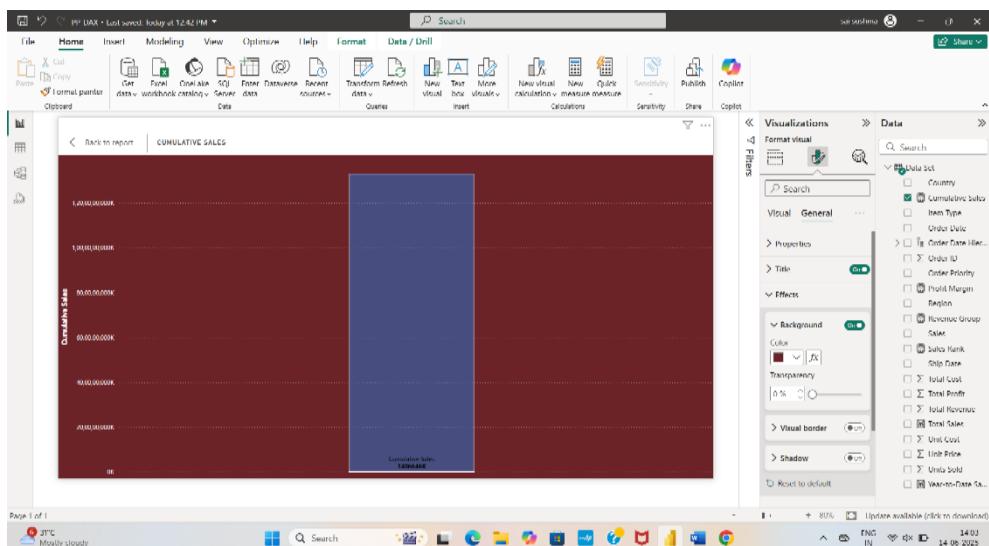
FILTER(

ALL(Sales[Order Date]),

Sales[Order Date] <= MAX(Sales[Order Date])

)

)

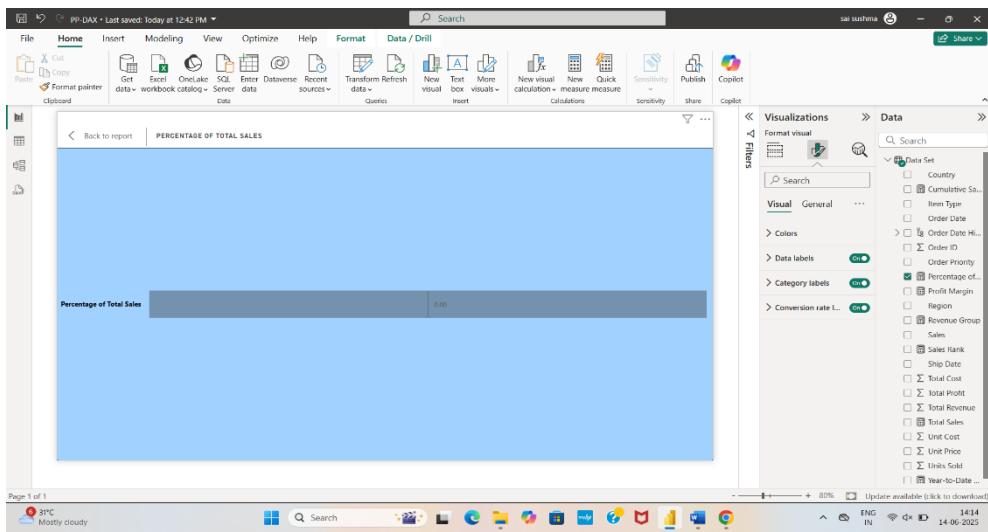


8. Percentage of Total

Compute values as a percentage of a column total:

Percentage of Total Sales = DIVIDE(SUM(Sales[Total Revenue]),

CALCULATE(SUM(Sales[Total Revenue]), ALL(Sales)))



9. Dynamic Measures

Switch measures based on slicers:

Dynamic Measure = SWITCH(

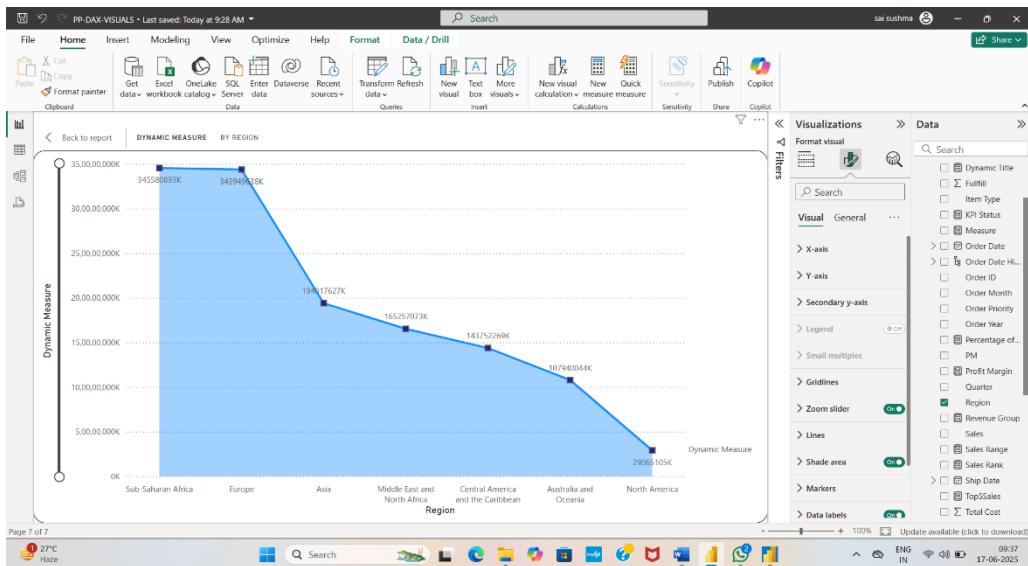
SELECTEDVALUE(SlicerTable[Measure Name]),

"Total Sales", SUM(Sales[Total Revenue]),

"Total Profit", SUM(Sales[Total Profit]),

BLANK()

)

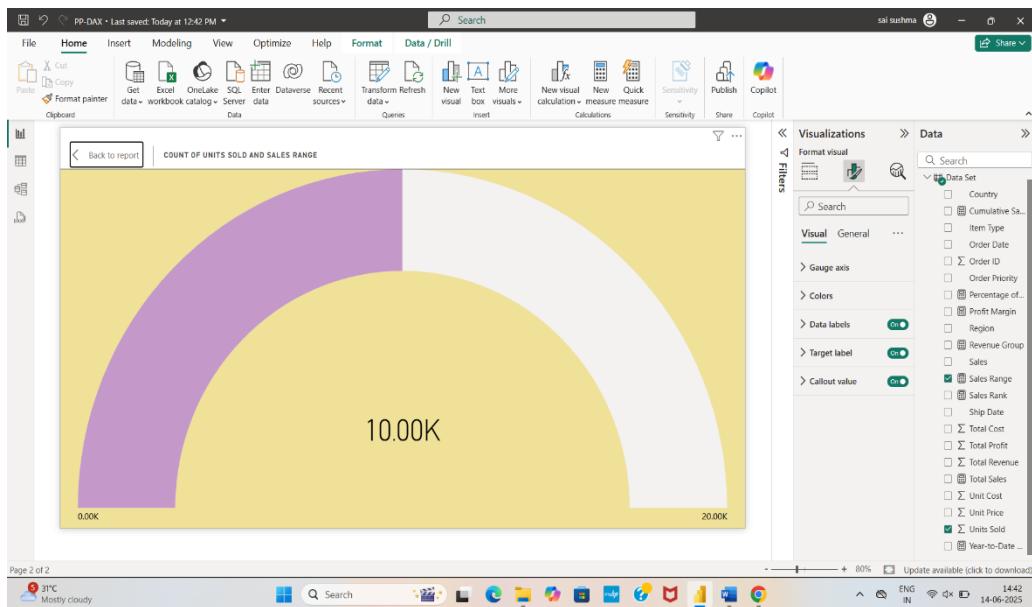


10. Data Buckets

Group continuous data into ranges:

Sales Range =

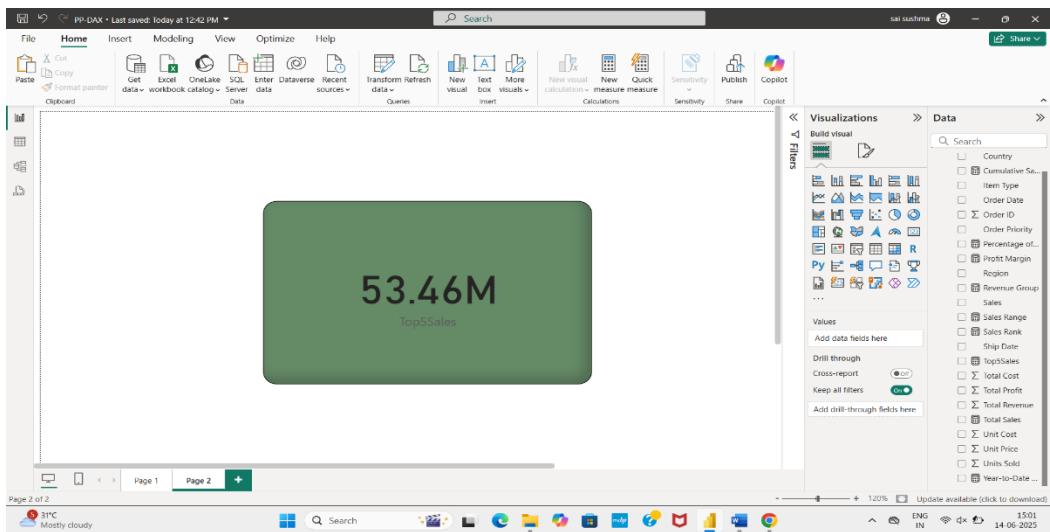
```
SWITCH(  
    TRUE(),  
    Sales[Units Sold] < 100, "Low",  
    Sales[Units Sold] < 500, "Medium",  
    "High"  
)
```



11. Top N Filtering

Filter insights into top records:

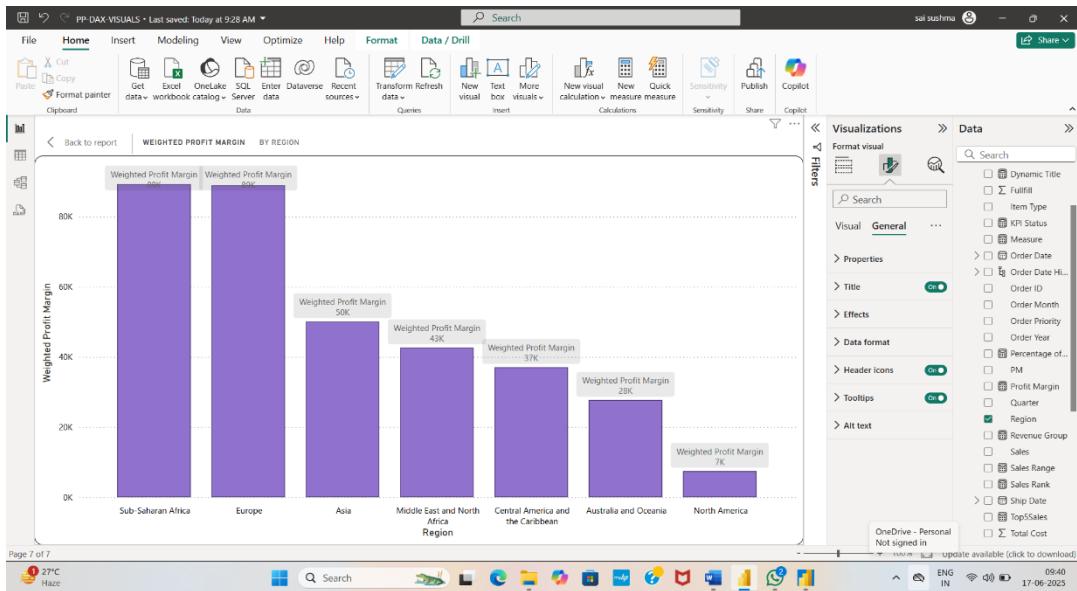
Top 5 Sales = TOPN(5, Sales, Sales[Total Revenue], DESC)



12. Custom Aggregations

Row-based calculations:

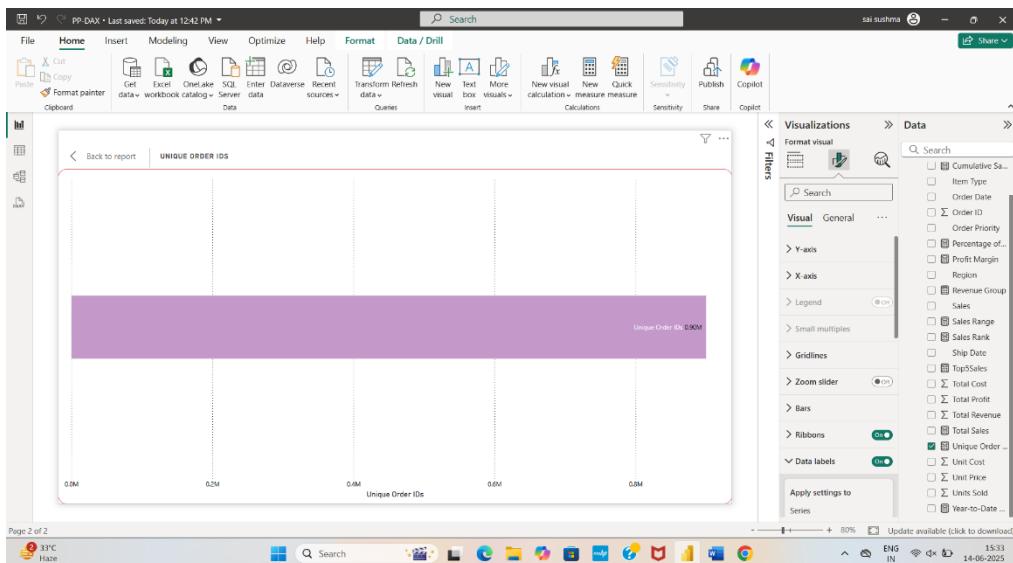
$$\text{Weighted Profit Margin} = \text{SUMX}(\text{Sales}, \text{Sales}[\text{Total Profit}] / \text{Sales}[\text{Total Revenue}])$$



13. Distinct Count

Calculate unique counts:

$$\text{Unique Order IDs} = \text{DISTINCTCOUNT}(\text{Sales}[Order ID])$$



14. Rolling Averages

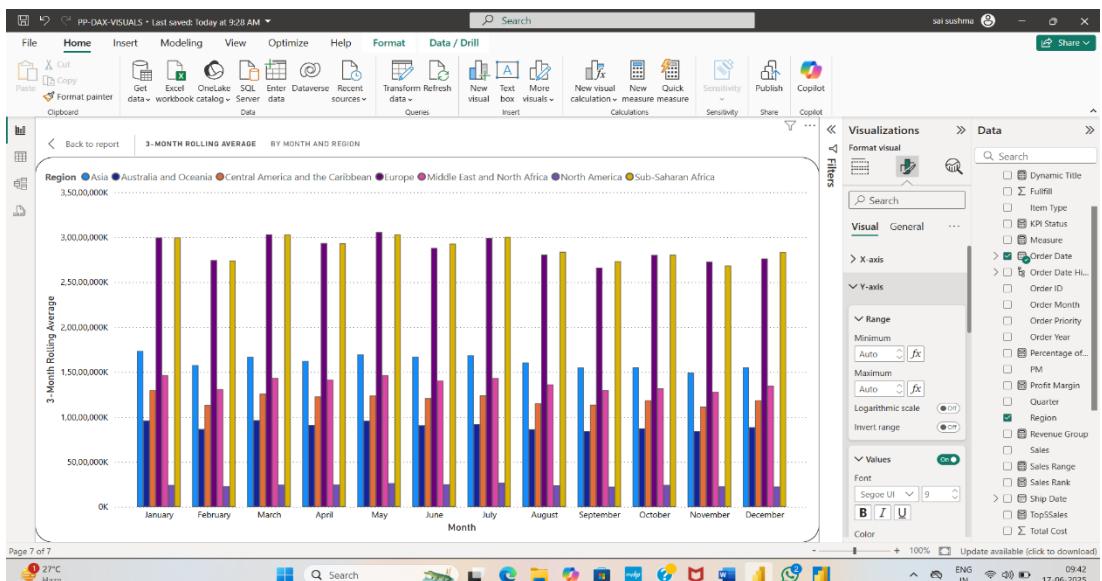
Implement moving averages:

3-Month Rolling Average = AVERAGEX(

DATESINPERIOD(Sales[Order Date], MAX(Sales[Order Date]), -3, MONTH),

SUM(Sales[Total Revenue])

)



15. Forecasting

Calculate future trends:

Trend Line =

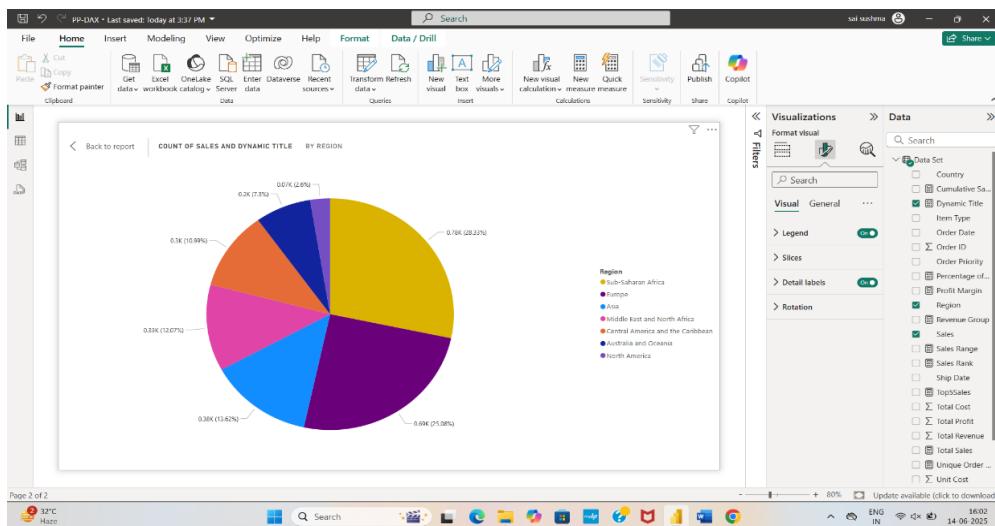
```
VAR XValues = SUMMARIZE(Sales, Sales[Order Date], "X", RANKX(ALL(Sales[Order Date]), Sales[Order Date]))
```

```
RETURN LINESTX(Sales[Total Revenue], XValues[X])
```

16. Dynamic Labels

Generate dynamic titles or labels:

```
Dynamic Title = "Revenue for " & SELECTEDVALUE(Sales[Region])
```



17. Row-Level Security (RLS)

Restrict access by roles:

```
RLS Filter = Sales[Region] = "West"
```

18. Relationship-Based Measures

Fetch data across related tables:

```
Related Data = RELATED(Regions[Region Name])
```

19. Nested Calculations

Combine multiple functions:

```
Complex Calculation = CALCULATE(
```

```
    SUM(Sales[Total Profit]),
```

```
    FILTER(
```

```
        ALL(Sales),
```

```

Sales[Region] = "North" && Sales[Order Priority] = "H"
)
)

```

20. Key Performance Indicators (KPIs)

Define progress toward targets:

KPI Status = SWITCH(

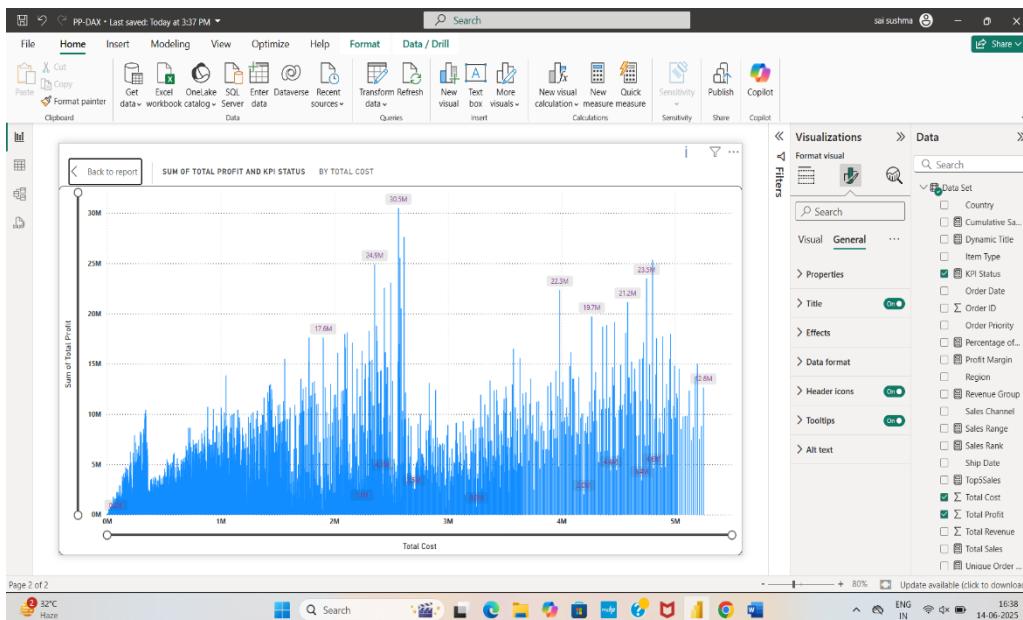
TRUE(),

Sales[Profit Margin] < 10, "Below Target",

Sales[Profit Margin] < 20, "On Target",

"Exceeds Target"

)



Visualization

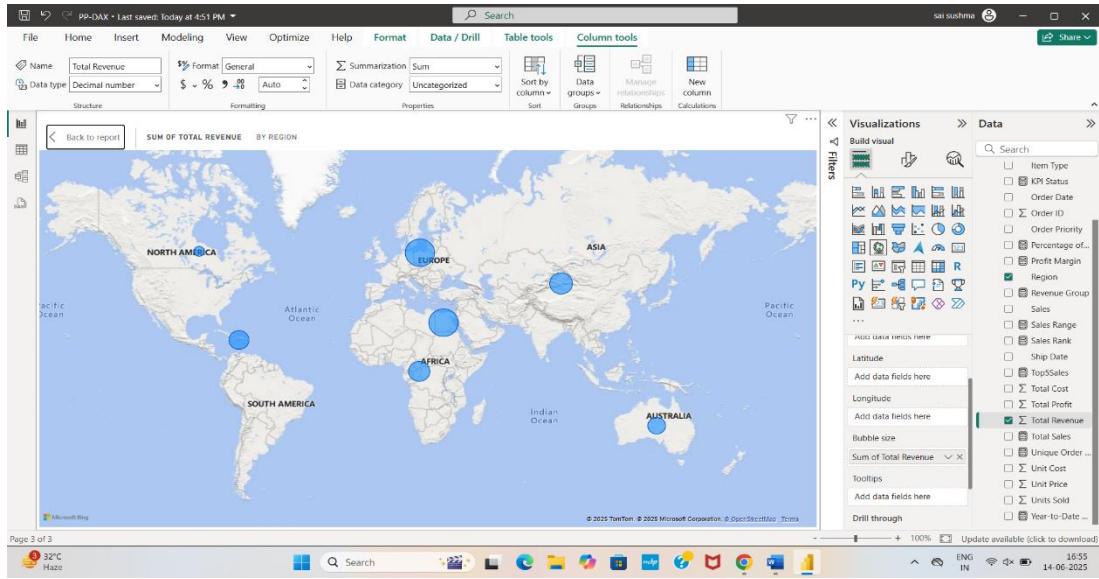
Effective visualizations allow stakeholders to quickly grasp insights.

20 Visualization Examples:

Here are **20 visualization examples** for your dataset, detailed step by step:

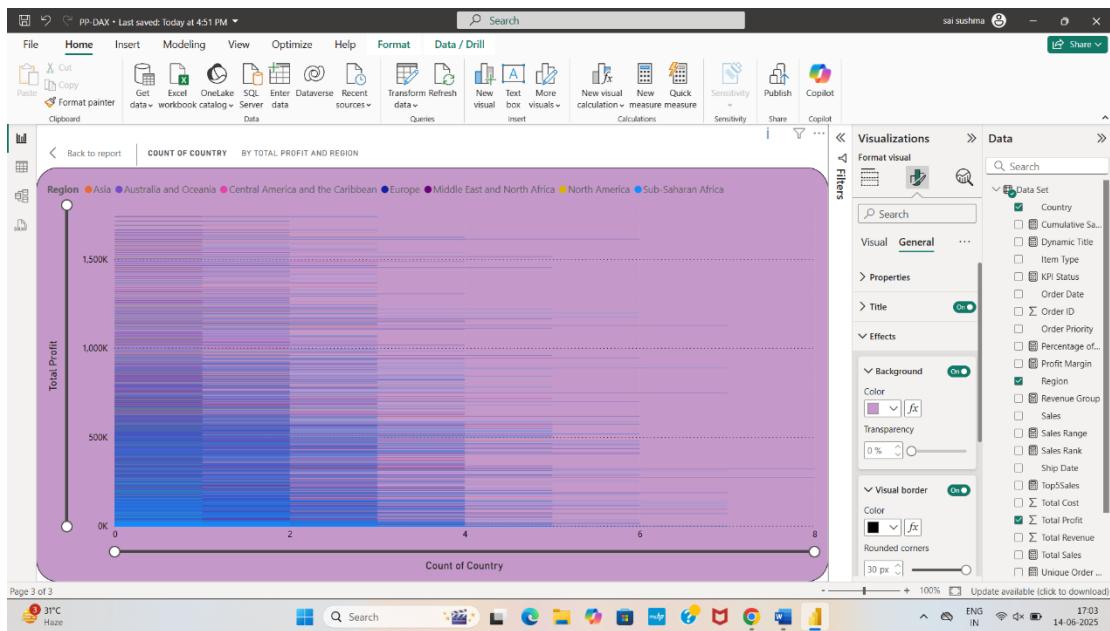
1. Map of Revenue by Region

- Add a **Map** visual.
- Drag Region to the **Location** field.
- Drag Total Revenue to the **Size** field.
- Customize bubble sizes to reflect revenue visually.



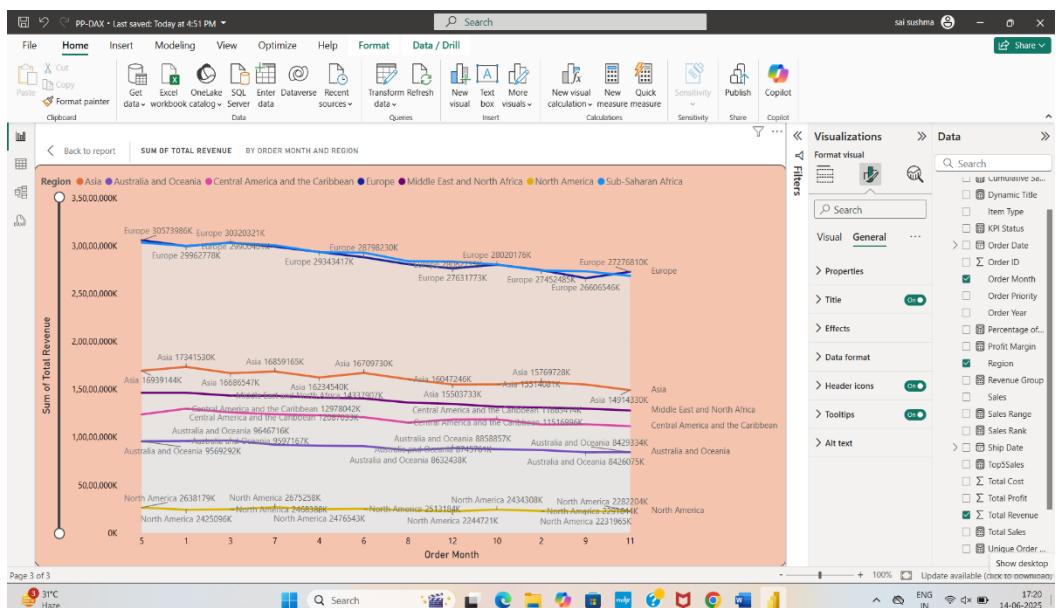
2. Bar Chart for Total Profit by Country

- Select a **Clustered Bar Chart**.
- Drag Country to the **Axis** field.
- Drag Total Profit to the **Values** field.
- Add Region to the **Legend** to group countries by regions.



3. Line Chart for Sales Trends

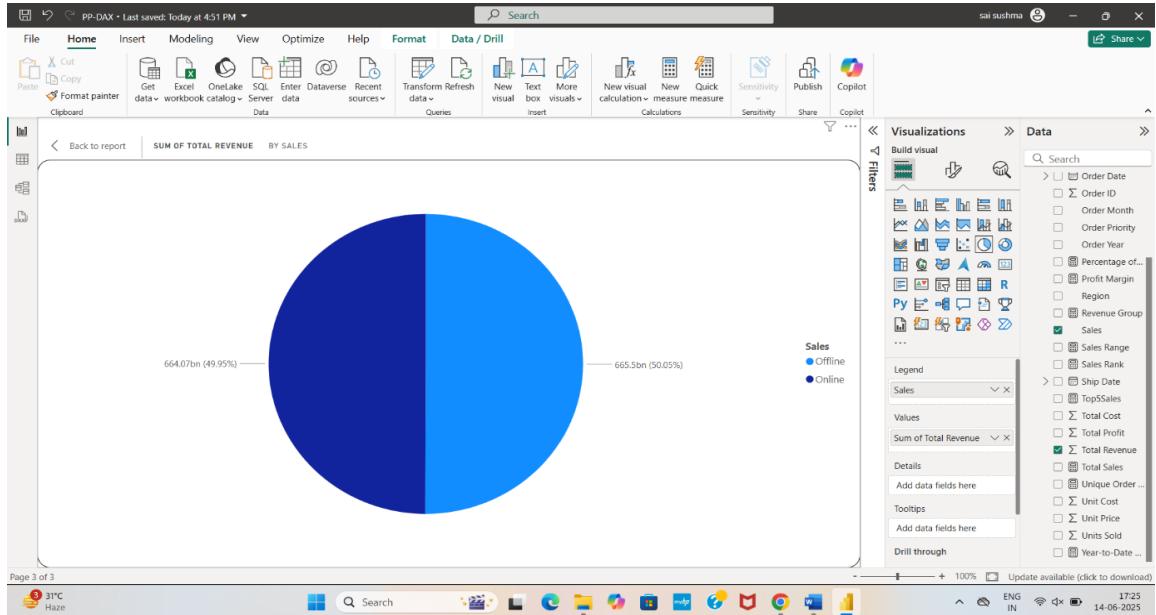
- Use a **Line Chart**.
- Drag Order Date to the **X-axis** (convert to Month/Year).
- Drag Total Revenue to the **Y-axis**.
- Add Region to the **Legend** for segmented trends.



4. Pie Chart for Sales Channels

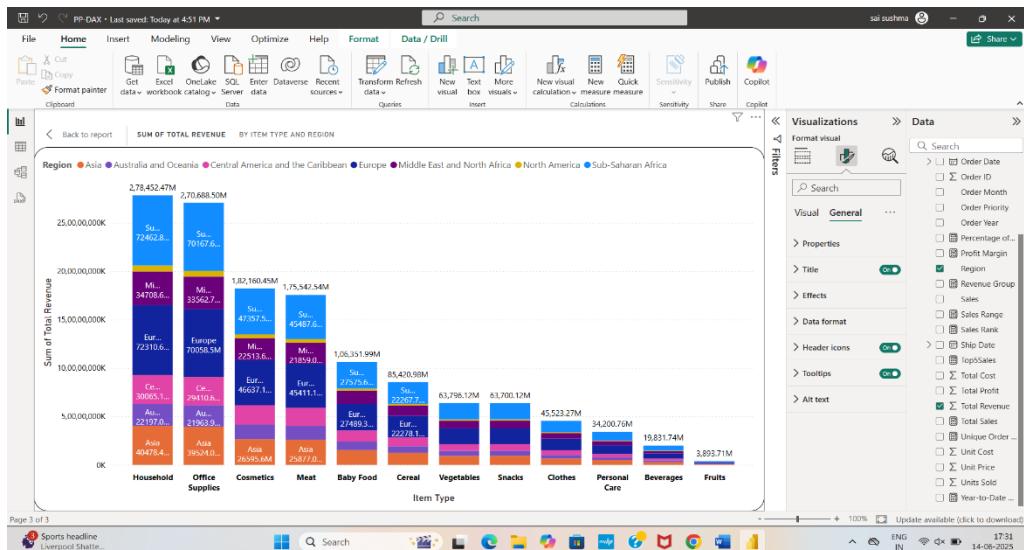
- Use a **Pie Chart**.

- Drag Sales Channel to the **Legend** field.
- Drag Total Revenue to the **Values** field.
- Enable data labels to show percentages.



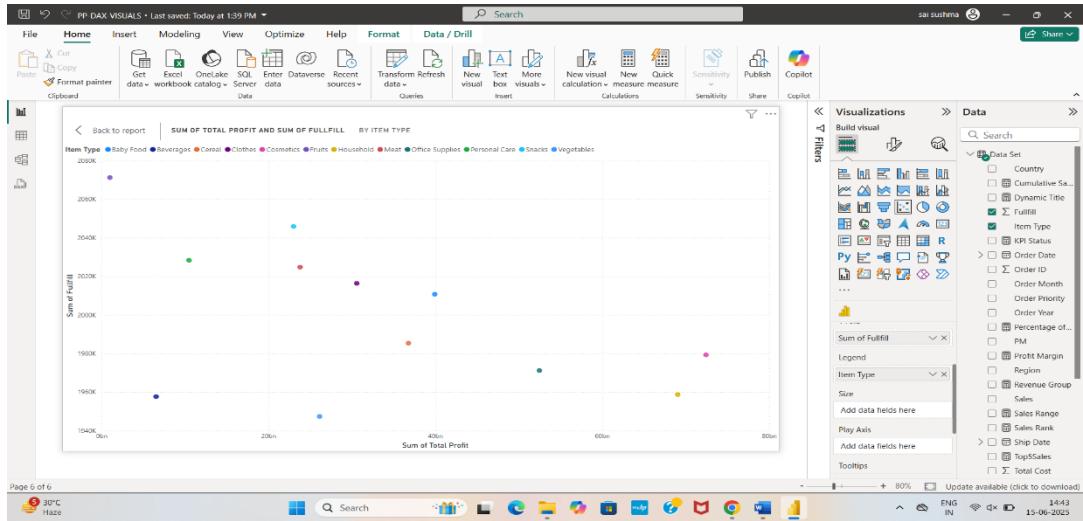
5. Column Chart for Item Type Revenue

- Use a **Stacked Column Chart**.
- Drag Item Type to the **Axis** field.
- Drag Total Revenue to the **Values** field.
- Add Region to the **Legend** to stack columns by region.



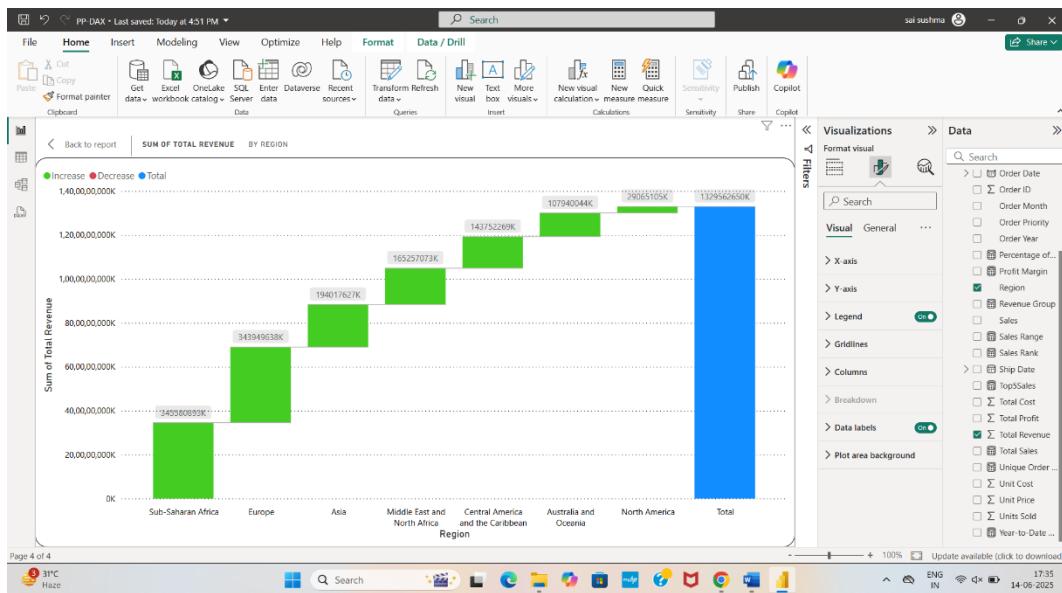
6. Scatter Plot for Profit vs. Fulfillment Time

- Select a **Scatter Plot**.
- Drag Total Profit to the **X-axis**.
- Drag Days to Fulfill (calculated as Ship Date - Order Date) to the **Y-axis**.
- Use Item Type as the **Legend** for color differentiation.



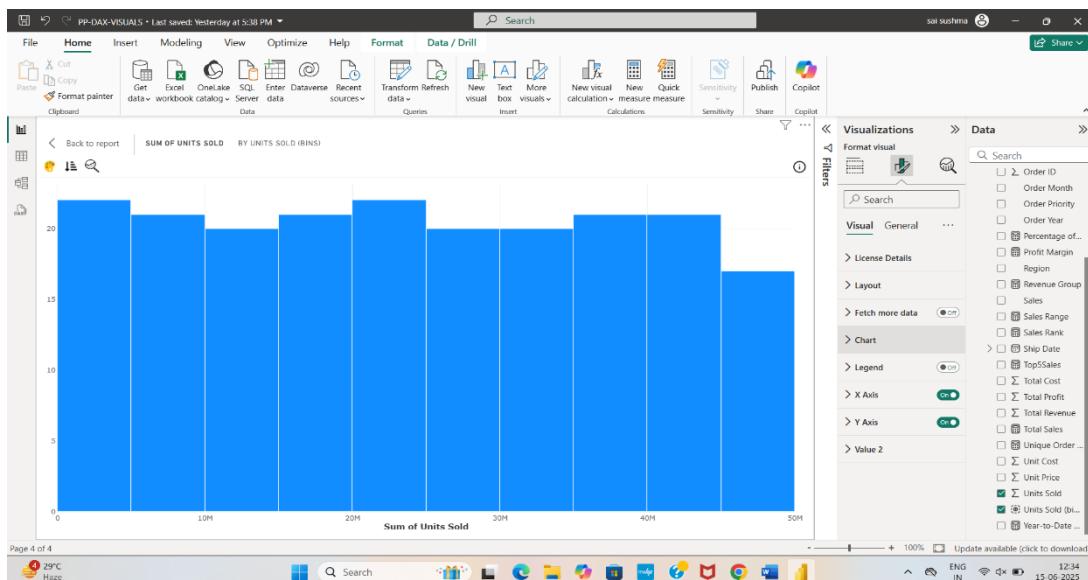
7. Waterfall Chart for Revenue Decomposition

- Use a **Waterfall Chart**.
- Drag Region to the **Category** field.
- Drag Total Revenue to the **Values** field.
- Show how revenue accumulates by regions.



8. Histogram for Units Sold Distribution

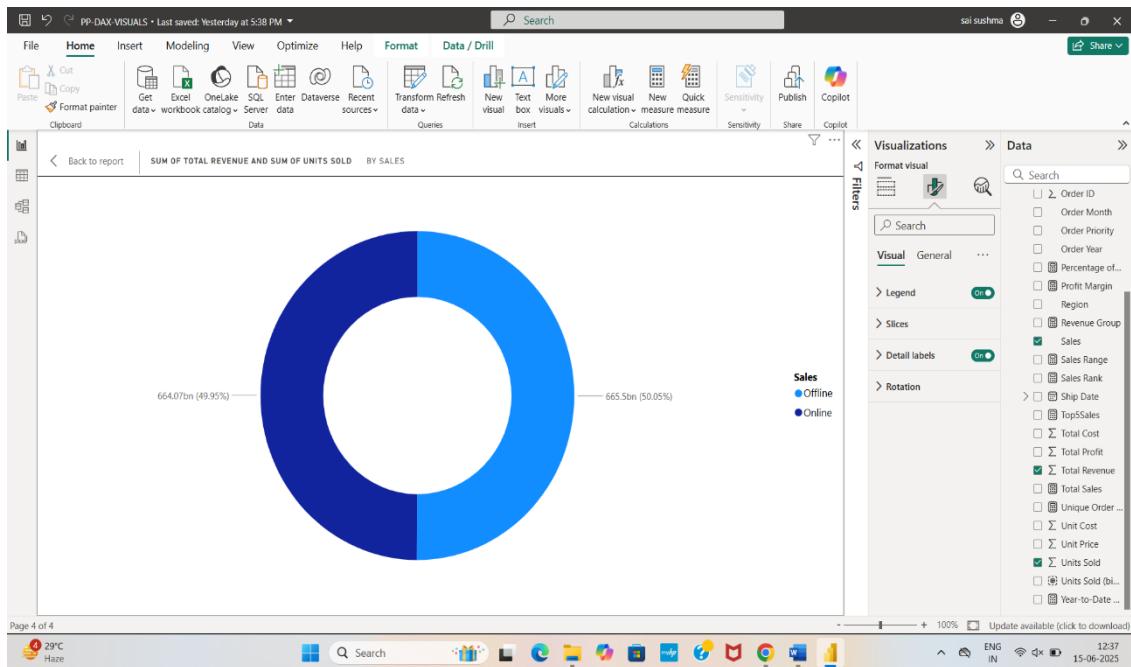
- Use a **Histogram**.
- Drag Units Sold to the **Values** field.
- Group the data into bins to show distribution.



9. Donut Chart for Sales Channels

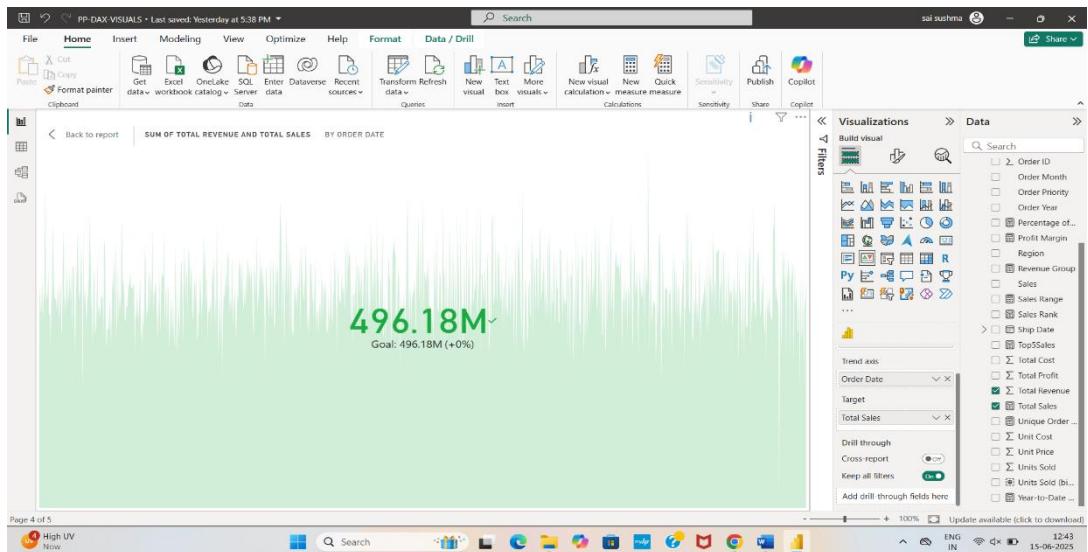
- Use a **Donut Chart**.
- Add Sales Channel to the **Legend**.
- Add Total Revenue to the **Values**.

- Add tooltips for additional insights like profit or units sold.



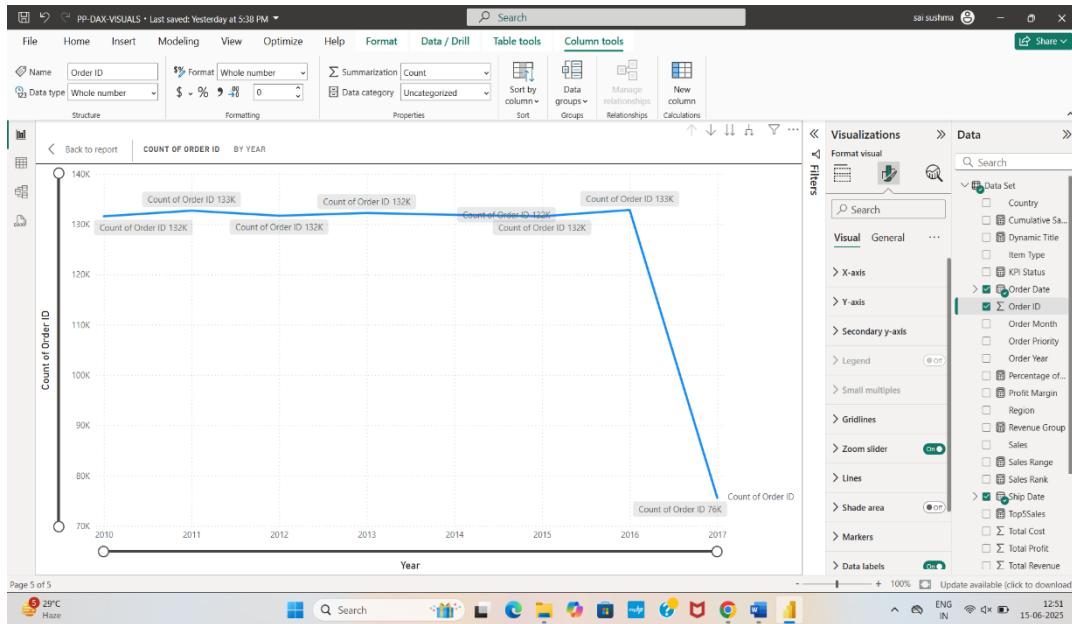
10. KPI Card for Total Revenue

- Use a **KPI Visual**.
- Drag Total Revenue to the **Indicator** field.
- Use Order Date to define a time trend.
- Add a target revenue goal for comparison.



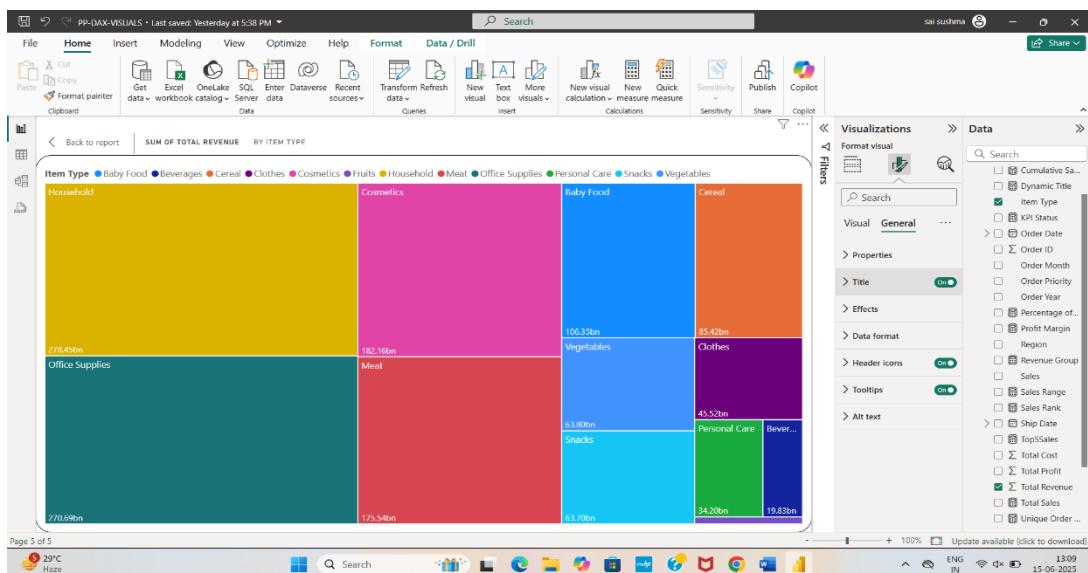
11. Timeline Chart for Orders vs. Shipments

- Use a **Line Chart**.
- Drag Order Date and Ship Date to the **X-axis**.
- Add Order ID to the **Values** field to track volume.



12. Tree Map for Revenue by Item Type

- Use a **Tree Map** visual.
- Add Item Type to the **Group** field.
- Drag Total Revenue to the **Values** field.
- Highlight major revenue contributors.



13. Heatmap for Revenue by Region and Item Type

- Use a **Matrix Visual**.
- Drag Region to the **Rows** field.
- Drag Item Type to the **Columns** field.
- Add Total Revenue to the **Values** field and apply a gradient color scale.

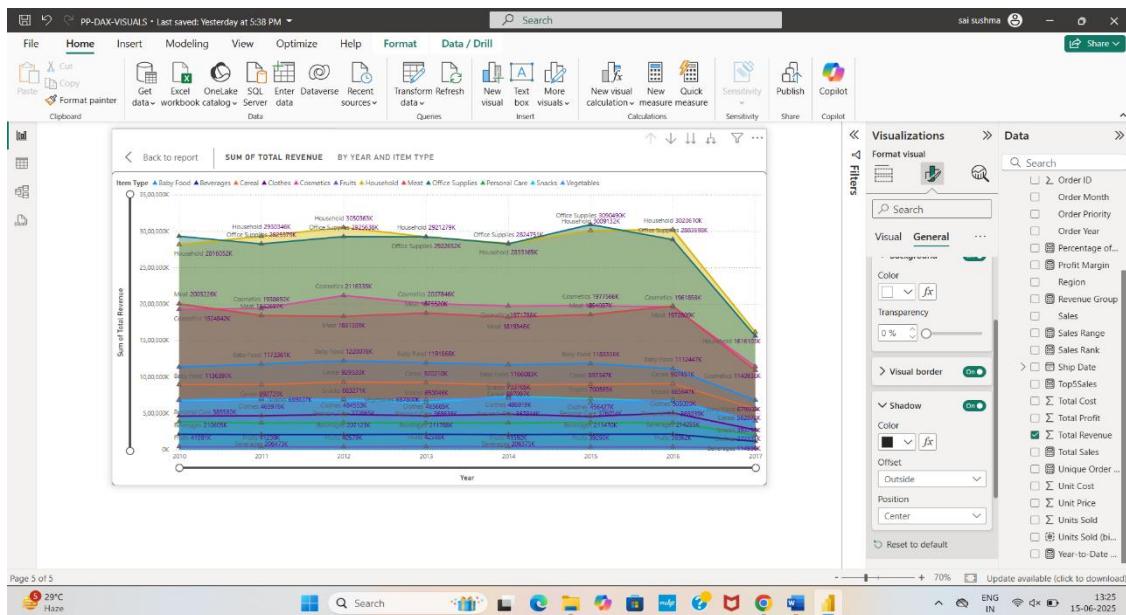
The screenshot shows the Power BI desktop interface with a matrix visual on the canvas. The matrix has 'Region' in the Rows field, 'Item Type' in the Columns field, and 'Sum of Total Revenue' in the Values field. The data is as follows:

Region	Household	Total
Asia	40,47,84,79,175.61	40,47,84,79,175.61
Australia and Oceania	22,19,70,49,824.57	22,19,70,49,824.57
Central America and the Caribbean	30,06,51,19,131.33	30,06,51,19,131.33
Europe	72,31,06,11,778.41	72,31,06,11,778.41
Middle East and North Africa	34,70,86,53,370.63	34,70,86,53,370.63
North America	6,22,96,93,132.40	6,22,96,93,132.40
Sub-Saharan Africa	72,46,28,59,054.62	72,46,28,59,054.62
Total	2,78,45,24,65,467.57	2,78,45,24,65,467.57

The Power BI ribbon is visible at the top, and the Data pane on the right lists various data items like Order ID, Order Month, etc., with 'Region' and 'Sum of Total Revenue' selected.

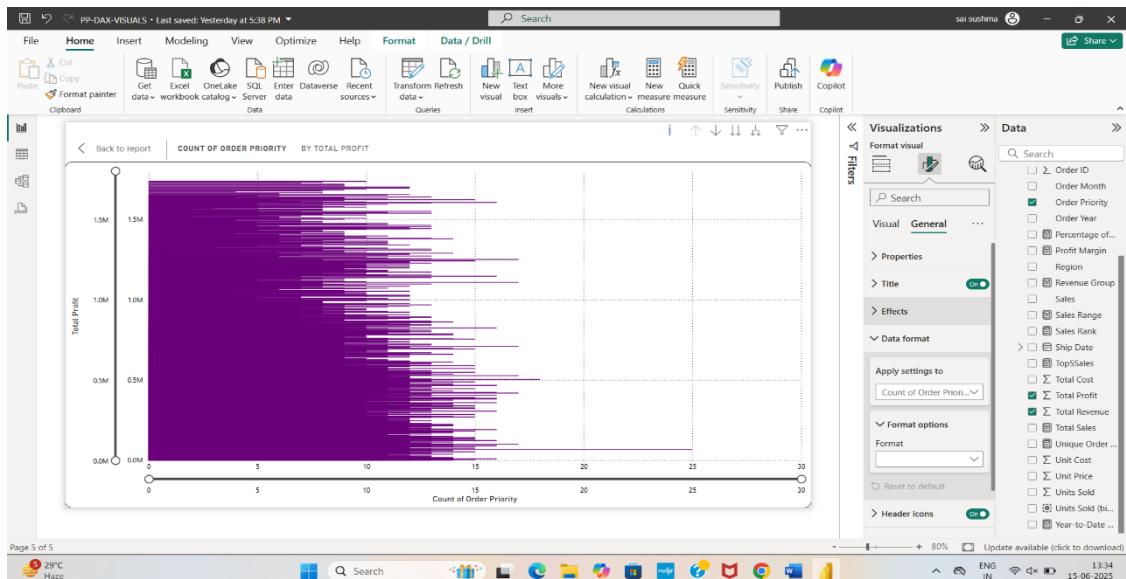
14. Stacked Area Chart for Revenue Growth

- Use an **Area Chart**.
- Drag Order Date (converted to Month/Year) to the **X-axis**.
- Drag Total Revenue to the **Y-axis**.
- Add Item Type to the **Legend**.



15. Bar Chart for Order Priority Analysis

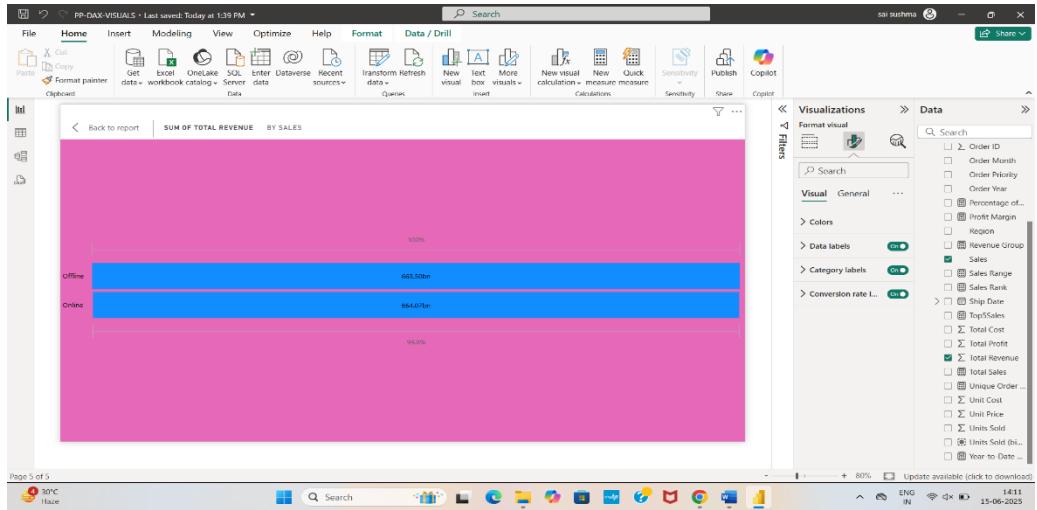
- Use a **Clustered Bar Chart**.
- Drag Order Priority to the **Axis** field.
- Drag Total Revenue and Total Profit to the **Values** fields.
- Compare revenue and profit across priority levels.



16. Revenue Funnel by Sales Channel

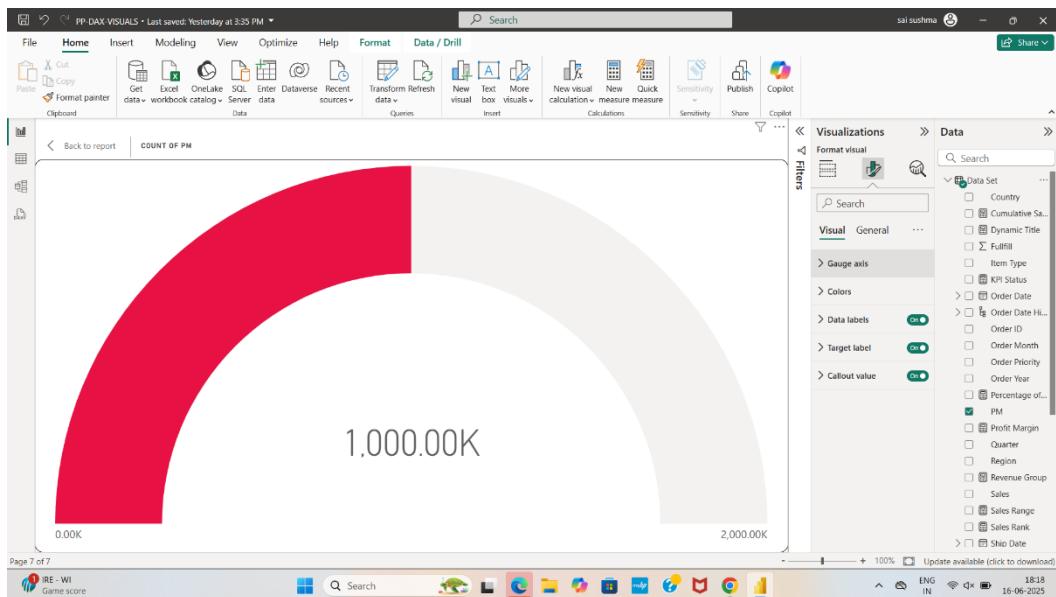
- Use a **Funnel Chart**.

- Add Sales Channel to the **Category** field.
- Drag Total Revenue to the **Values** field.



17. Profit Margin Analysis (Gauge Visual)

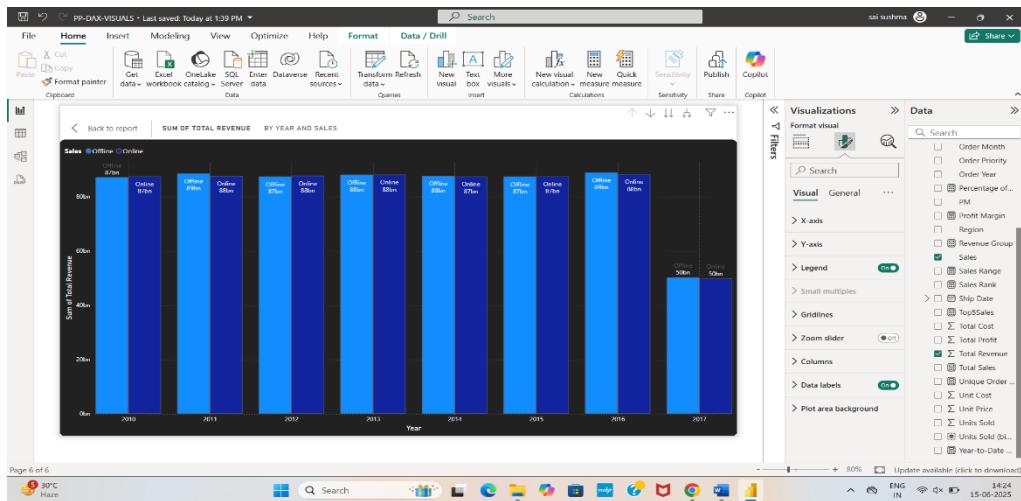
- Use a **Gauge Visual**.
- Add Profit Margin (calculated as (Total Profit / Total Revenue) * 100) to the **Value** field.
- Set ranges like 0–20% (red), 20–40% (yellow), and 40–100% (green).



18. Clustered Column Chart for Revenue by Month and Channel

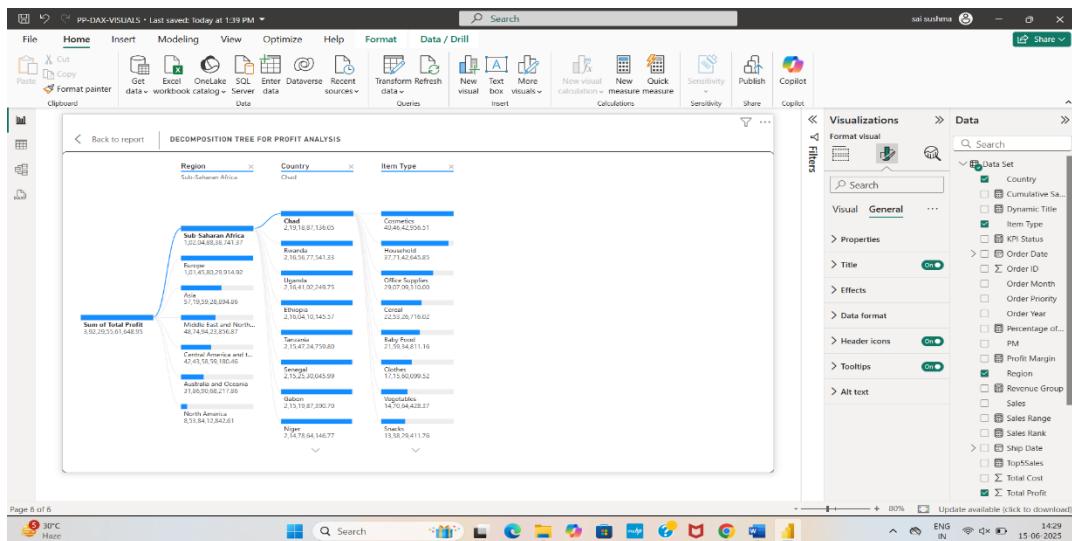
- Drag Order Date (Month/Year) to the **X-axis**.

- Add Total Revenue to the **Y-axis**.
- Add Sales Channel to the **Legend** to group by online/offline.



19. Decomposition Tree for Profit Analysis

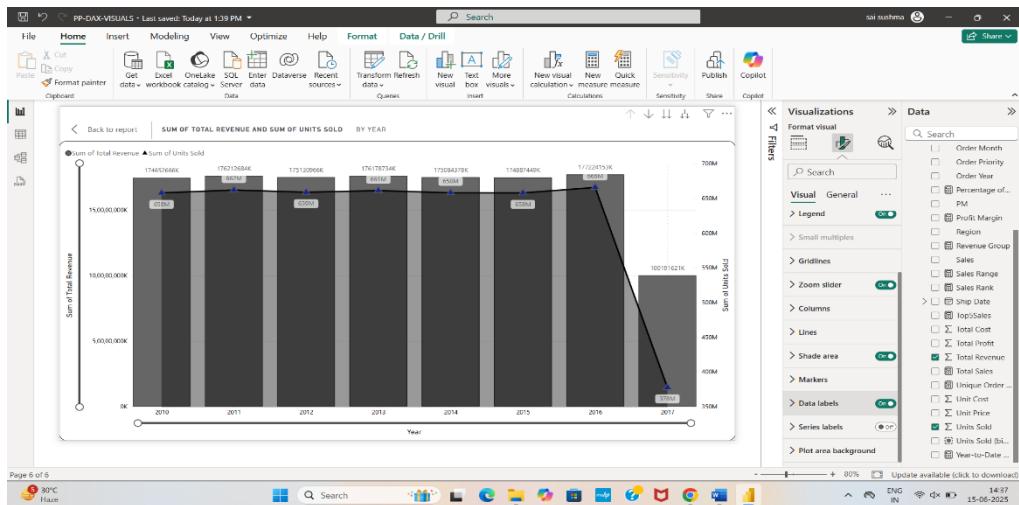
- Use a **Decomposition Tree** visual.
- Add Total Profit as the **Value** field.
- Add fields like Region, Country, and Item Type sequentially to explore contributions.



20. Line and Clustered Column Chart for Revenue and Units Sold

- Use a **Combo Chart**.
- Add Order Date (Month/Year) to the **X-axis**.
- Drag Total Revenue to the **Clustered Column** field.

- Drag Units Sold to the Line Values field.



Storytelling: Presenting Key Insights with a Narrative Framework

Power BI Storytelling: Turning Data into Decisions

In today's data-driven environment, visual analytics is not just about charts it's about telling a story that inspires action. This Power BI project explores core business drivers through the lens of **regional dynamics, product behavior, channel performance, and order urgency**, guiding leadership toward smarter, more strategic choices.

1. Regional Performance: Spotting Growth Hubs

Insightful Narrative:

A regional analysis uncovers **North America as a performance powerhouse**, consistently outpacing other regions in revenue and profit. This success aligns with strong digital infrastructure and a high share of premium sales. On the other hand, **Europe's slower online adoption presents an untapped opportunity**.

What the Data Shows:

- **Map and bar charts** illustrate region-wise sales distribution and profit margins.
- **North America** leads with over 40% of global revenue.
- **Europe lags in digital sales**, suggesting an area for marketing and operational focus.

Strategic Angle:

"Scale digital campaigns and optimize eCommerce platforms in Europe to replicate North America's winning model."

2. Product Category Trends: Prioritizing What Sells

Insightful Narrative:

By diving into category-wise performance, we discover that **electronics are the top contributors to revenue**, despite modest volume. This signals **high-margin potential**. Meanwhile, **apparel and seasonal items** gain momentum in specific quarters revealing tactical opportunities for timed promotions.

What the Data Shows:

- **Bar charts** reveal profit and revenue per product type.
- **Trend lines** display seasonal spikes in categories like apparel.

Strategic Angle:

"Maintain focus on electronics for profitability, while aligning marketing efforts with seasonal peaks in apparel and gift categories."

3. Sales Channel Comparisons: Online vs. Offline Intelligence

Insightful Narrative:

Sales channel analysis shows a **dominant shift toward online platforms**, now responsible for **over 60% of total revenue**. However, **offline sales deliver better margins**, likely due to lower returns and more premium product interactions.

What the Data Shows:

- **Pie and bar visuals** compare online and offline revenues, profits, and unit sales.
- **Offline** yields higher per-unit profitability.

Strategic Angle:

"Continue investing in digital growth, but enrich offline experiences like exclusive launches or loyalty events to leverage their margin advantage."

4. Order Priority Analysis: Balancing Urgency with Profit

Insightful Narrative:

Orders marked as **high-priority** have a clear revenue advantage, contributing significantly to the top line. However, they come at a logistical cost, often demanding faster delivery, which affects operational efficiency.

What the Data Shows:

- **Stacked bar and scatter charts** correlate priority levels with revenue, profit, and fulfillment times.

- **High-priority orders = higher revenue but longer and costlier fulfillment.**

Strategic Angle:

"Improve logistics and resource planning for high-priority orders to sustain speed without compromising profit."

Data-Driven Recommendations: From Insight to Action

- **Scale Digital Excellence:** Replicate high-performing strategies from North America in lagging regions.
 - **Maximize Profit Leaders:** Prioritize high-margin categories like electronics, and time promotions for seasonal goods.
 - **Channel Strategy Optimization:** Balance online volume with offline margin opportunities.
 - **Order Fulfillment Efficiency:** Streamline urgent order handling to boost ROI on high-priority shipments.
-

Why This Story Matters

This storytelling approach transforms complex dashboards into a **clear, actionable business narrative**. It empowers stakeholders not only to explore the data but to understand the **“why” behind the numbers** ensuring every decision is backed by insights, not intuition.

Dashboard Preparation

Steps to Build Dashboards:

- **Create Visuals:** Add visuals step by step, beginning with KPIs.
- **Set Filters and Slicers:** Allow users to filter by region, year, and sales channel.
- **Design Layout:** Use a clean and organized layout to group related insights.
- **Interactive Elements:** Add drill-through and tooltip functionality for deeper analysis.

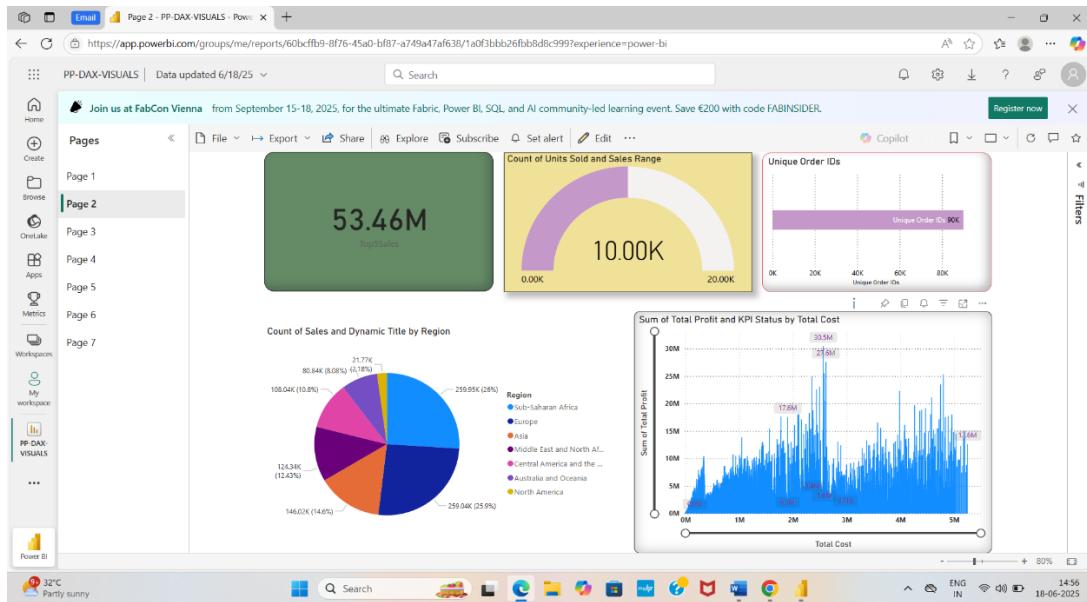
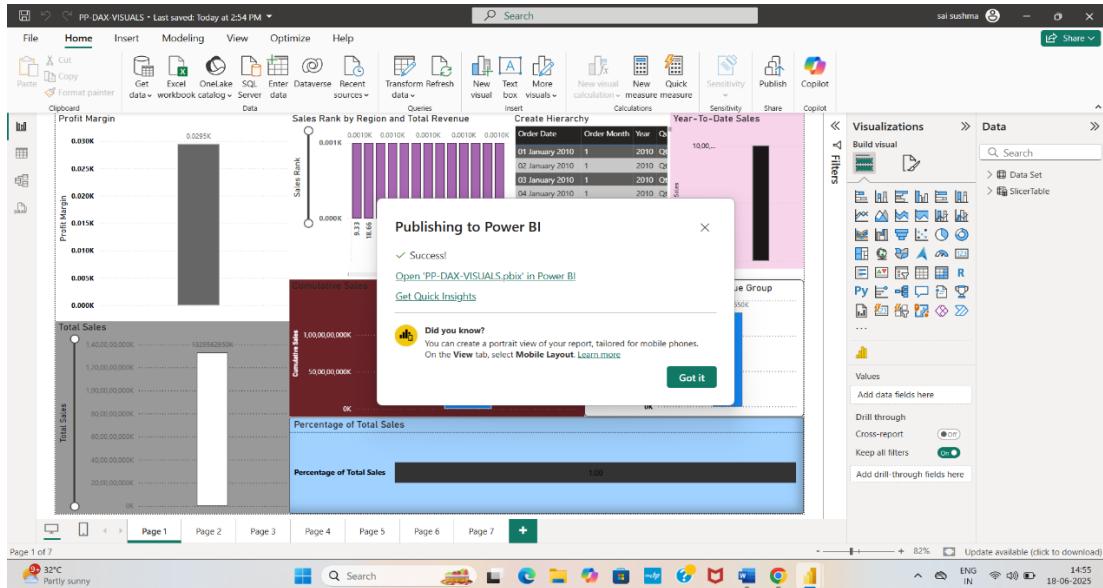
By doing all the cleaning, preparation, modelling, visualizations and transformations using the given dataset we are creating all the required visuals and DAX reports using the PowerBI. Where it can also help us to understand the process of doing it step-by-step and achieving the goal.



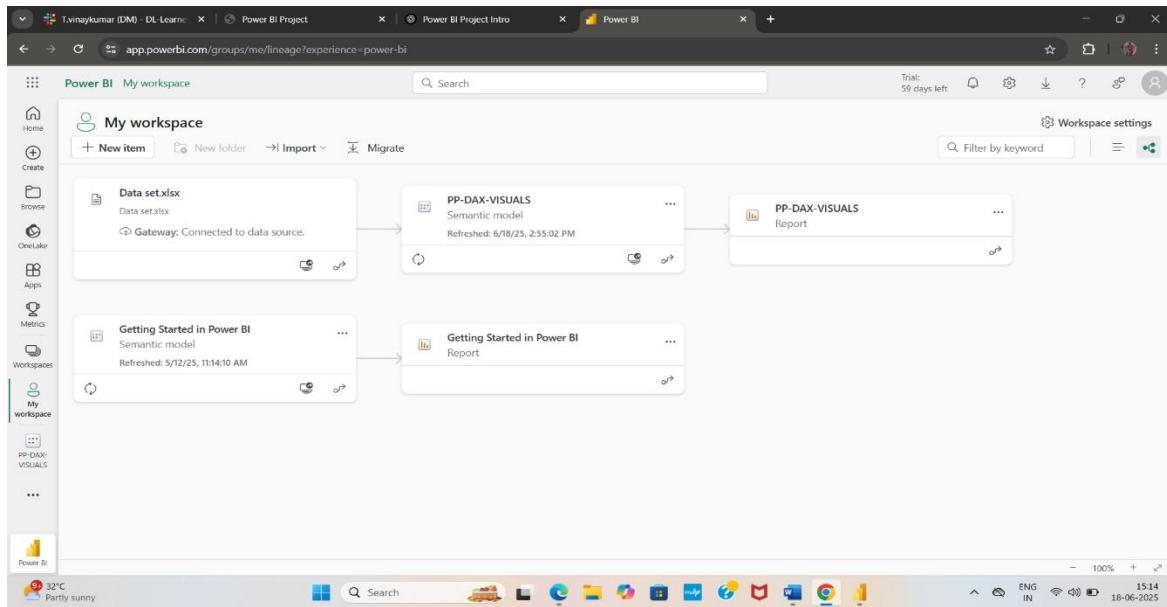
Deployment to Power BI Service

Steps:

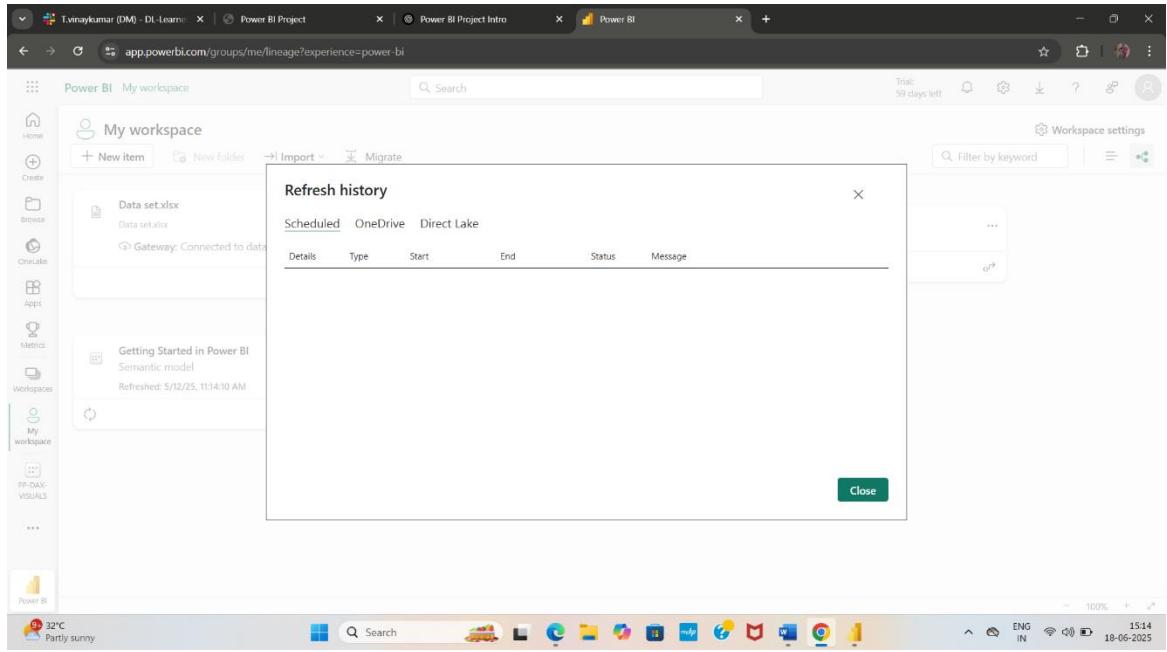
- Publish the Dashboard:



- **Configure Workspace Permissions:**



- **Schedule Data Refresh Intervals:**



- **Share Dashboards:**

The screenshot shows a Power BI dashboard titled "PP-DAX-VISUALS". The dashboard includes several visualizations: a bar chart for Profit Margin, a treemap for Sales Rank by Region and Total Revenue, and a bar chart for Year-To-Date Sales. A modal window titled "Send link" is open, asking for a recipient's name or email address and a message. It also includes buttons for "Copy link", "Mail", "Teams", and "PowerPoint". The dashboard is set against a background of a Windows desktop environment.

- **Embed Dashboards:**

The screenshot shows the same Power BI dashboard as the previous one, but with a different modal window. This window is titled "Securely embed this report in a website or portal". It contains checkboxes for "Enable action bar" (checked), "Enable Copilot" (unchecked), and "Link to embed this content" (with a URL provided). Below this is an "HTML to paste on a website" section with an iframe code. A note at the bottom states: "Changing the width or height from what is specified in the iframe code above may result in certain features not working as expected." There is also a "Close" button. The dashboard and desktop environment remain the same.

Monitoring and Updates:

Regular monitoring and updates are essential to maintain dashboard accuracy, performance, and relevance for informed decision-making. Monitoring ensures data accuracy, system performance, and user engagement, while updates help incorporate feedback, refresh data, and add new features. Together, they ensure the dashboard remains a reliable and valuable business tool.

Monitoring

Set Alerts:

The screenshot shows a Power BI report titled "PP-DAX-VISUALS" with a "Trial: 59 days left" banner. A central modal window titled "One-time setup for alerts" is open, explaining the process of creating Microsoft Fabric free trial capacity. It includes a "Close" button and a link to "Creating Microsoft Fabric free trial capacity". To the right, a sidebar titled "Alerts" is visible with sections for "Create your first alert", "Save yourself time and spot issues or opportunities in your data sooner using alerts to monitor it for you 24x7.", and "The alerts can notify you of changes, trends, and a variety of other conditions." A green "Add alert" button is at the bottom.

Performance Monitoring:

The screenshot displays a Power BI dashboard with multiple visualizations. On the left, a navigation pane lists pages: Page 1 (selected), Page 2, Page 3, Page 4, Page 5, Page 6, and Page 7. The main area contains several charts: 1) A line chart showing the "Count of Order ID by Year" from 2010 to 2015, with a tooltip for 2015 showing values for Baby Food, Beverages, Cereal, Clothes, Household, Cosmetics, and Meat. 2) A treemap chart titled "Sum of Total Revenue by Item Type" showing revenue by item type like Baby Food, Beverages, Cereal, Clothes, Household, Cosmetics, Meat, Vegetables, Snacks, Personal Care, Office Supplies, and Fruits. 3) A bar chart titled "Sum of Total Revenue by Year and Item Type" comparing revenue across years and item types. 4) A scatter plot titled "Total Profit" showing profit distribution. 5) A stacked bar chart titled "Sum of Total Revenue by Sales" showing revenue breakdown between Offline and Online sales. A sidebar titled "Filters" is on the right, and a "Copilot" button is at the top right.

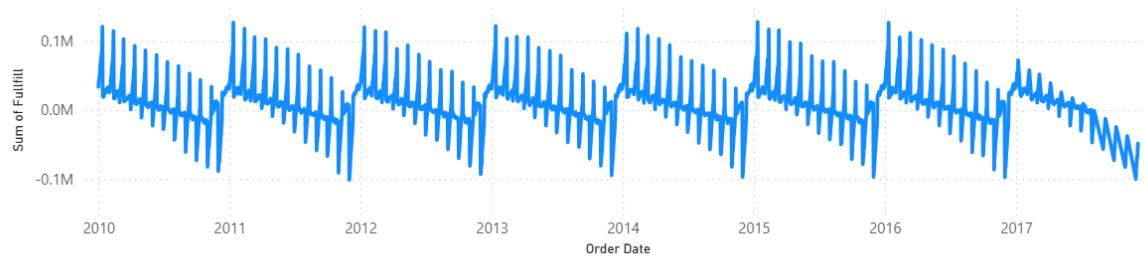
Updates

Regular Data Refreshes:

24M

Sum of Fullfill

Sum of Fullfill by Order Date



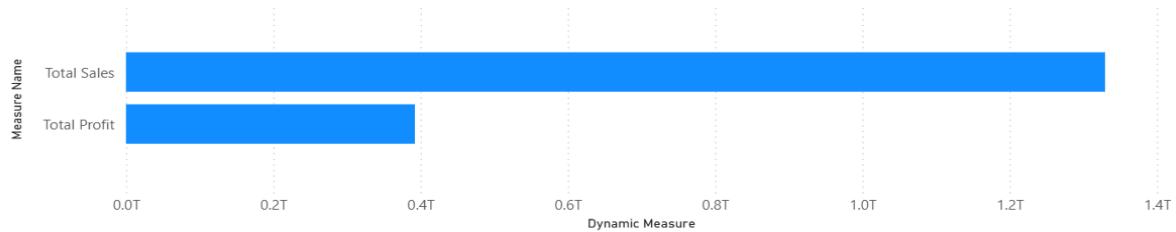
Exceeds Target

KPI Status

53.46M

Top5Sales

Dynamic Measure by Measure Name



Conclusion

This Power BI project showcases the complete journey from data preparation to insightful storytelling and dashboard deployment. By leveraging powerful visualizations and analysis, it delivers actionable insights into key business areas like regional performance, product trends, sales channels, and order priorities. The project enables smarter decision-making, fosters a data-driven culture, and sets a strong foundation for continuous business growth through ongoing monitoring and updates.

Furthermore, it emphasizes the importance of data accuracy, user engagement, and visual storytelling in communicating complex information clearly. With scalable dashboards, timely refreshes, and real-time alerts, stakeholders can respond proactively to market changes. Overall, the project not only enhances operational visibility but also supports long-term strategic planning.