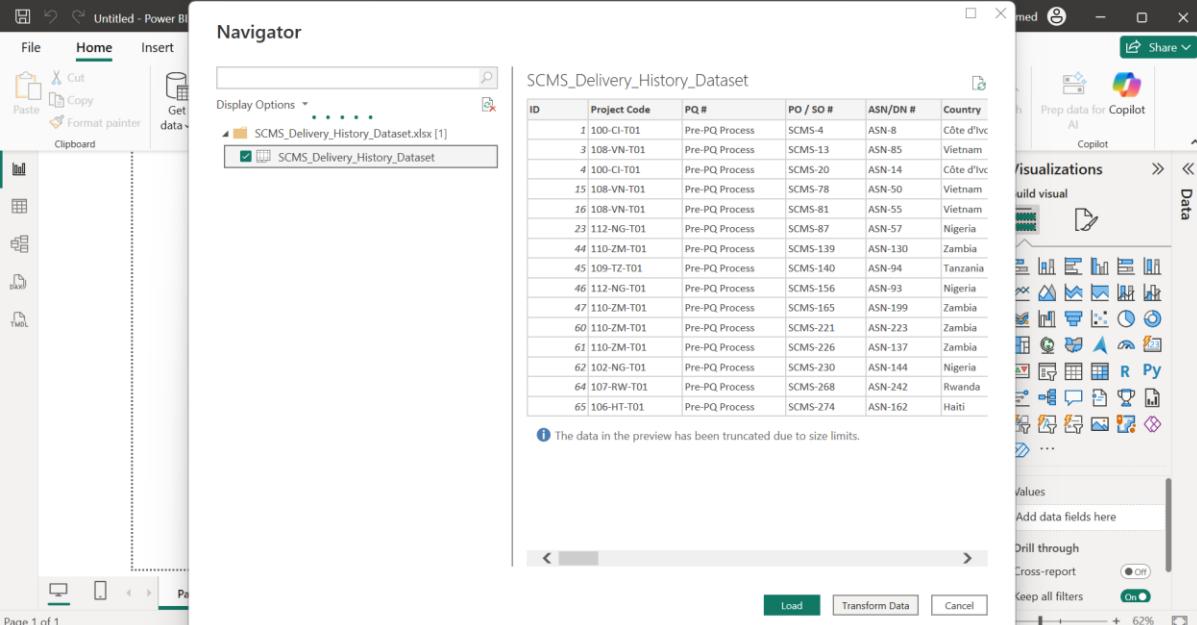


SECTION 1 — PROCESS EVIDENCE

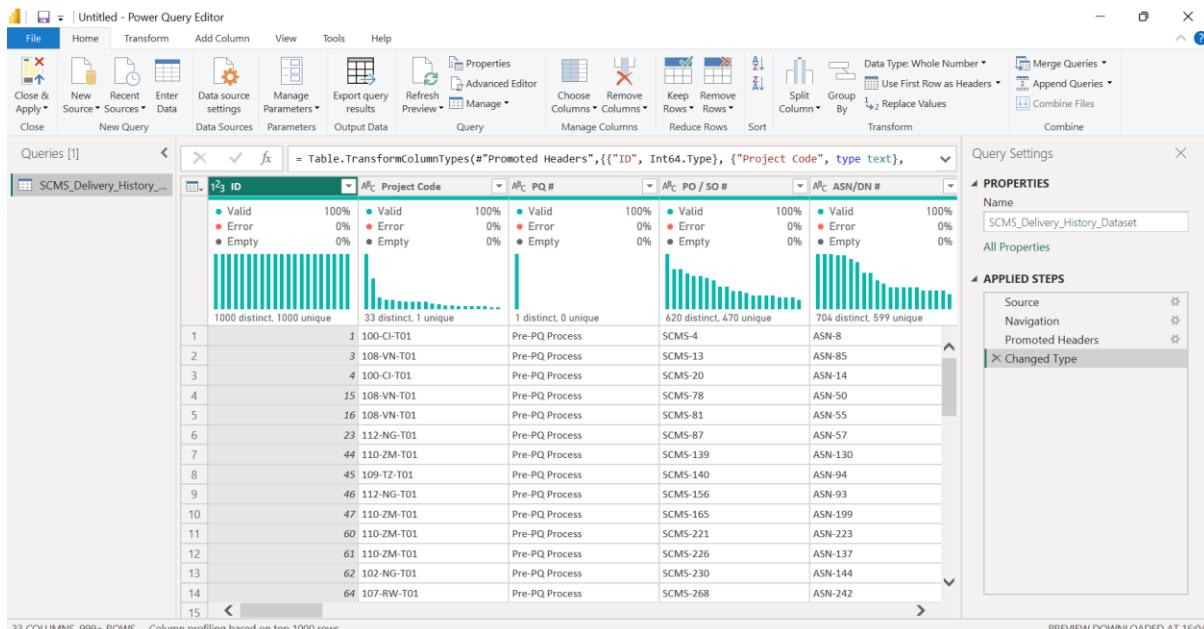
DATASET SOURCING



The screenshot shows the Power BI Desktop interface. In the center, the 'Navigator' pane displays a list of datasets: 'SCMS_Delivery_History_Dataset.xlsx [1]' and 'SCMS_Delivery_History_Dataset'. To the right, the main workspace shows a preview of the 'SCMS_Delivery_History_Dataset' table. The table has columns: ID, Project Code, PQ #, PO / SO #, ASN/DN #, and Country. The preview shows approximately 65 rows of data. A note at the bottom of the preview area states: 'The data in the preview has been truncated due to size limits.' At the bottom of the screen, there are buttons for 'Load', 'Transform Data', and 'Cancel'.

I imported the real-world supply chain shipment dataset into Power BI Desktop and verified that the primary fact table contained more than 7,000 rows.

POWER QUERY — DATA PREPARATION



The screenshot shows the Power Query Editor interface. The 'Queries' list on the left contains 'SCMS_Delivery_History'. The main area shows a table with columns: 'ID', 'Project Code', 'PQ #', 'PO / SO #', and 'ASN/DN #'. Each column has a 'Data Type' dropdown set to 'Whole Number'. Below the table, a 'Column Profiling' section shows histograms for each column. The 'ID' column has 1000 distinct values. The 'Project Code' column has 33 distinct values. The 'PQ #' column has 1 distinct value. The 'PO / SO #' column has 620 distinct values. The 'ASN/DN #' column has 704 distinct values. On the right side, the 'Properties' pane shows the query name as 'SCMS_Delivery_History_Dataset'. The 'Applied Steps' pane lists the steps taken: 'Source', 'Navigation', 'Promoted Headers', and 'Changed Type'. The 'Changed Type' step is currently selected.

I opened Power Query Editor to begin cleaning and transforming the raw dataset for analytical use.

Untitled - Power Query Editor

File Home Transform Add Column View Tools Help

Queries [1]

Fact_Delivery

= Table.TransformColumnTypes(#"Promoted Headers", {{"ID", Int64.Type}, {"Project Code", type text}, {"PQL#", type text}, {"PO / SO #", type text}, {"ASN/DN #", type text}})

33 COLUMNS, 999+ ROWS Column profiling based on top 1000 rows PREVIEW DOWNLOADED AT 16:04

Properties

Name: Fact_Delivery

Applied Steps

- Source
- Navigation
- Promoted Headers
- Changed Type**

I renamed the raw table to Fact_Delivery to follow professional naming conventions for a star schema model.

Untitled - Power Query Editor

File Home Transform Add Column View Tools Help

Queries [1]

Fact_Delivery

= Table.RemoveColumns(#"Changed Type", {"PQ #", "PO / SO #", "ASN/DN #", "Managed By", "First Line"})

28 COLUMNS, 999+ ROWS Column profiling based on top 1000 rows PREVIEW DOWNLOADED AT 16:04

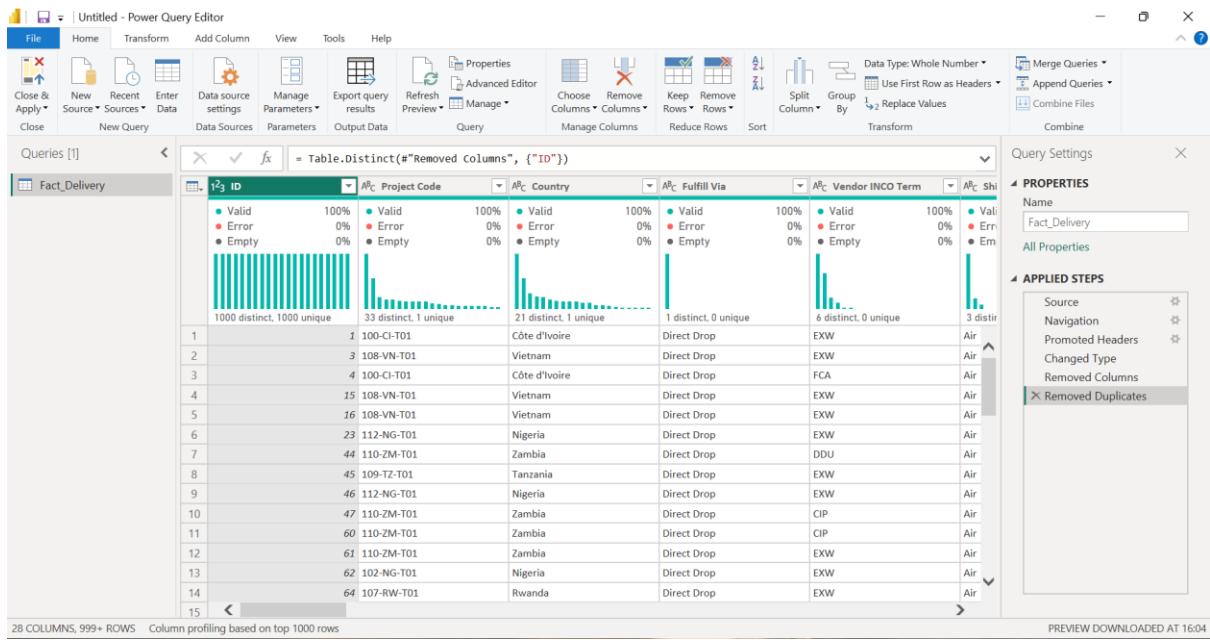
Properties

Name: Fact_Delivery

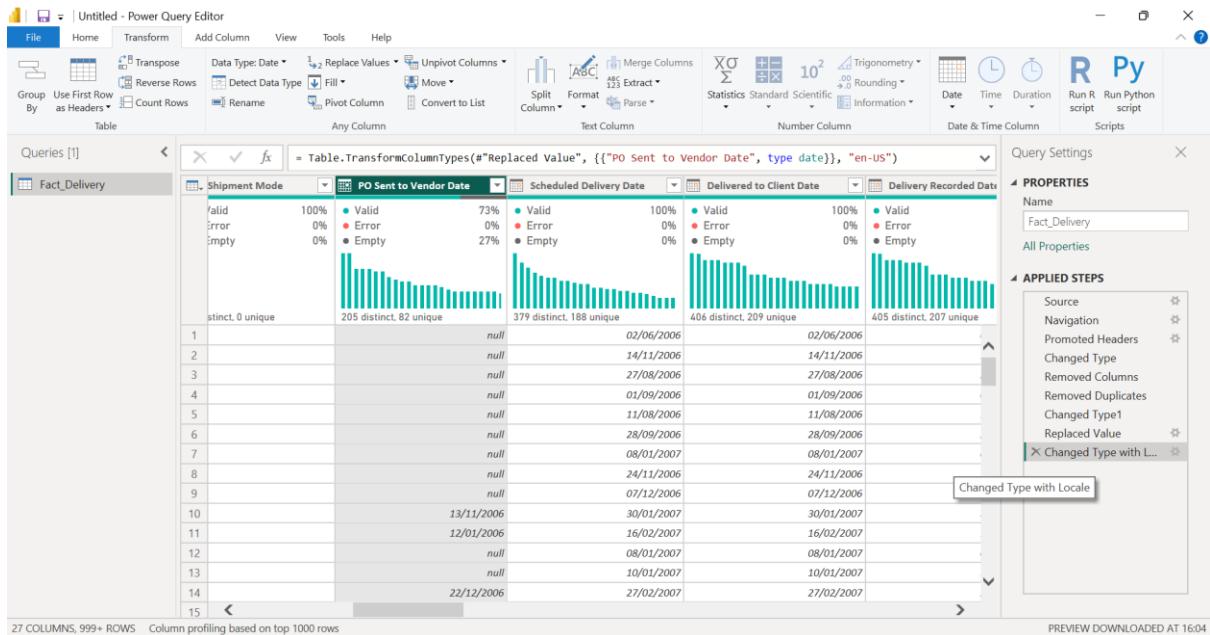
Applied Steps

- Source
- Navigation
- Promoted Headers
- Changed Type
- Removed Columns**

I removed irrelevant and unused columns to reduce model size and improve performance.



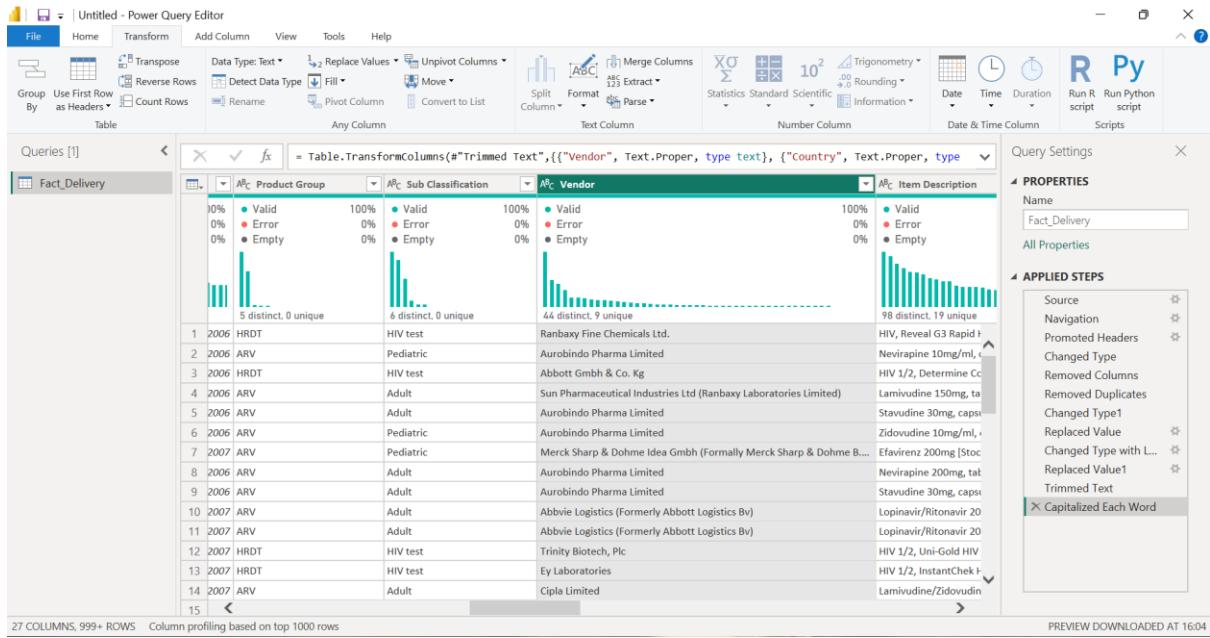
I removed duplicate records to ensure data accuracy and prevent double counting in KPI calculations.



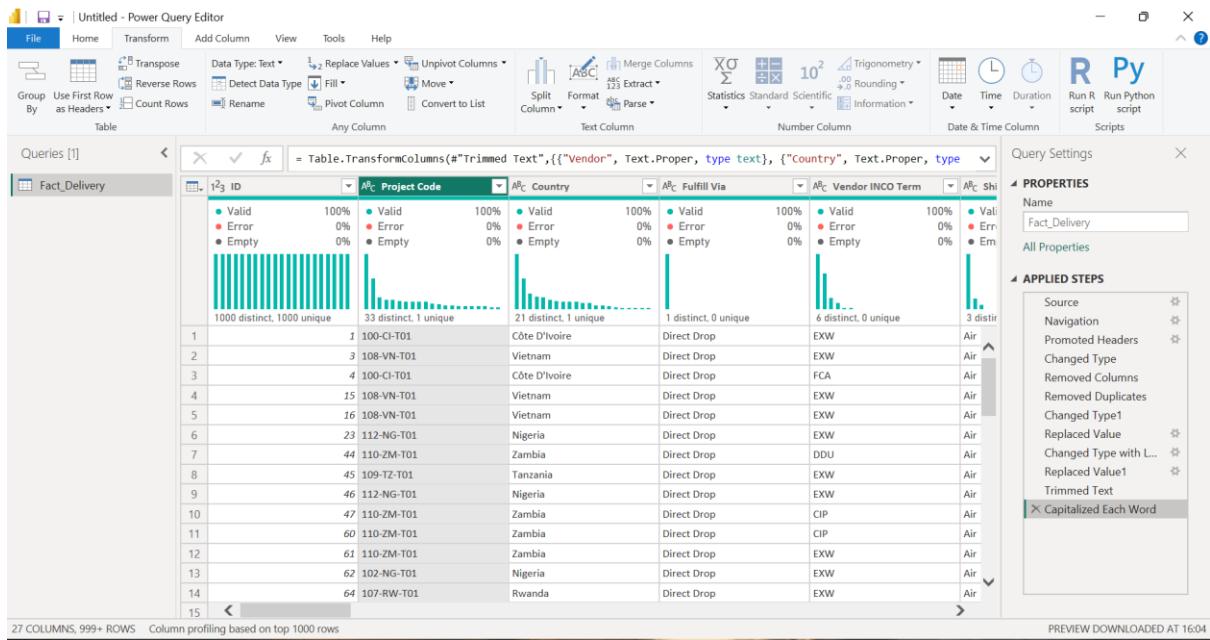
I corrected data types for dates, text, and numeric fields to enable proper time intelligence and aggregations.

I handled missing values by replacing or removing nulls to maintain data quality.

I trimmed leading and trailing spaces to standardize categorical fields.



I standardized text formatting using proper case to ensure consistent category labels.



I identified a composite column that required splitting for better dimensional modelling.

The screenshot shows the Power Query Editor interface with the following details:

- File, Home, Transform, Add Column, View, Tools, Help** menu bar.
- Toolbars:** Group By, Use First Row as Headers, Transpose, Reverse Rows, Count Rows, Detect Data Type, Pivot Column, Rename, Replace Values, Unpivot Columns, Move, Split Column, Format, Parse, Merge Columns, Statistics, Standard, Scientific, Trigonometry, Date, Time, Duration, Run R script, Run Python script, Scripts.
- Queries [1]** section: Fact_Delivery.
- Data Preview:** A table with columns: ID, Project ID, Country Code, Project Type, and Country. The preview shows data rows from 1 to 15. The 'Country' column contains values like 'Côte D'Ivoire', 'Vietnam', 'Nigeria', etc.
- Query Settings:** Properties for Fact_Delivery, including Name and All Properties.
- Applied Steps:** A list of steps applied to the table, including:
 - Source: Fact_Delivery
 - Navigation
 - Promoted Headers
 - Changed Type
 - Removed Columns
 - Removed Duplicates
 - ChangedType1
 - Replaced Value
 - Changed Type with L...
 - ReplacedValue1
 - Trimmed Text
 - Capitalized Each Word
 - Split Column by Deli...
 - Changed Type2
 - Renamed Columns

I split the column into separate attributes to improve filtering and analysis.

The screenshot shows the Microsoft Power Query Editor interface. The ribbon at the top includes File, Home, Transform, Add Column, View, Tools, and Help. The Home tab is selected. The ribbon also features several icons for data transformation: Conditional Column, Merge Columns, Statistics, Standard, Scientific, Date, Time, Duration, and a group for From Text, From Number, and From Date & Time.

The left sidebar displays 'Queries [1]' and the current query is 'Fact_Delivery'. The main area shows a table with the following columns:

- ig Site
- Avg Weight (Kilograms)
- Avg Freight Cost (USD)
- Line Item Insurance (USD)
- Avg Total Value Check

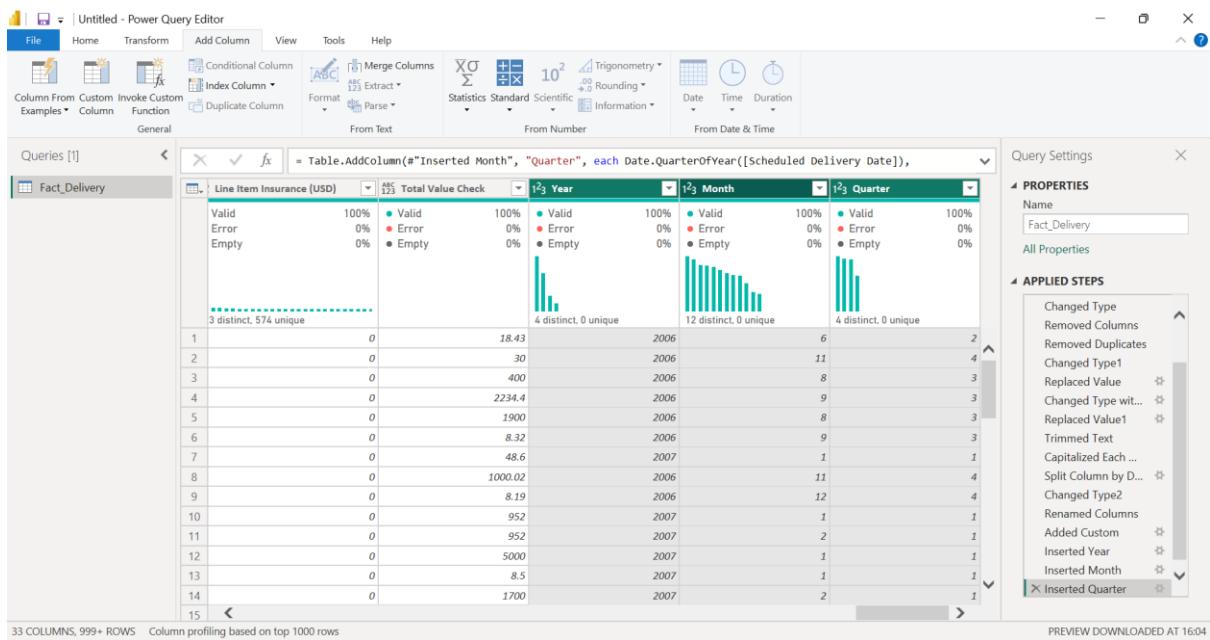
The table contains 15 rows of data. The last row is highlighted in blue. The preview pane on the right shows the results of the 'Total Value Check' step, indicating 693 distinct values and 574 unique values.

The 'Query Settings' pane on the right lists the following steps:

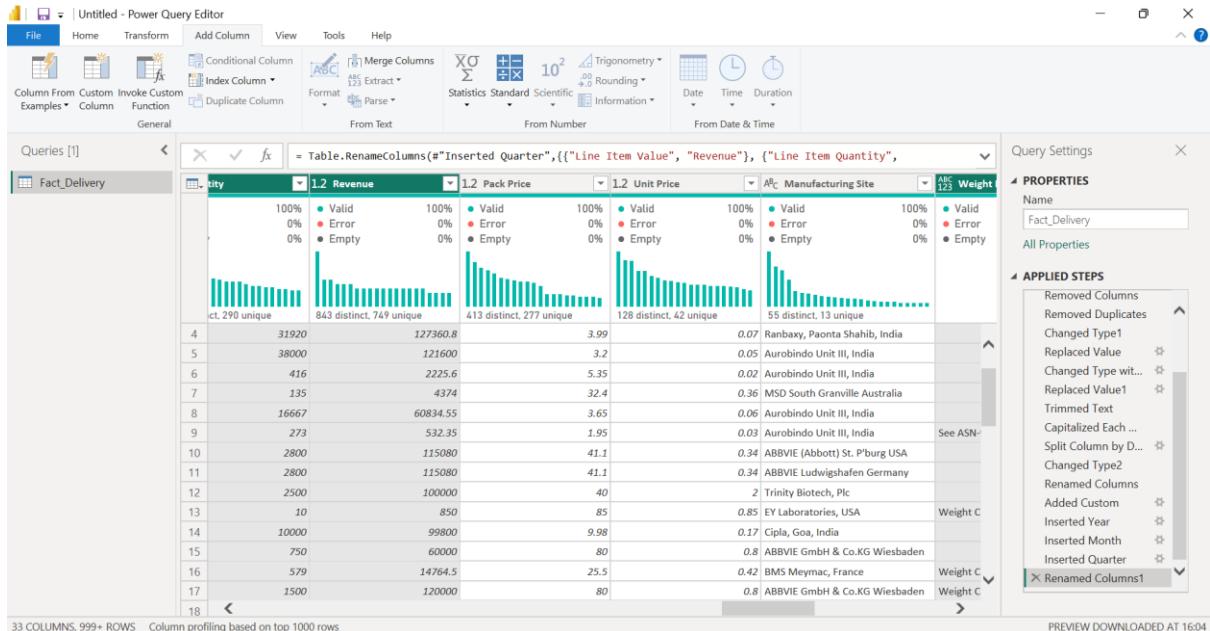
- PROPERTIES**: Name = Fact_Delivery, All Properties
- APPLIED STEPS**:
 - Source
 - Navigation
 - Promoted Headers
 - Changed Type
 - Removed Columns
 - Removed Duplicates
 - Changed Type1
 - Replaced Value
 - Changed Type wit...
 - Replaced Value1
 - Trimmed Text
 - Capitalized Each ...
 - Split Column by D...
 - Changed Type2
 - Renamed Columns
 - Added Custom

At the bottom, it says '30 COLUMNS, 999+ ROWS' and 'Column profiling based on top 1000 rows'. The status bar at the bottom right says 'PREVIEW DOWNLOADED AT 16:04'.

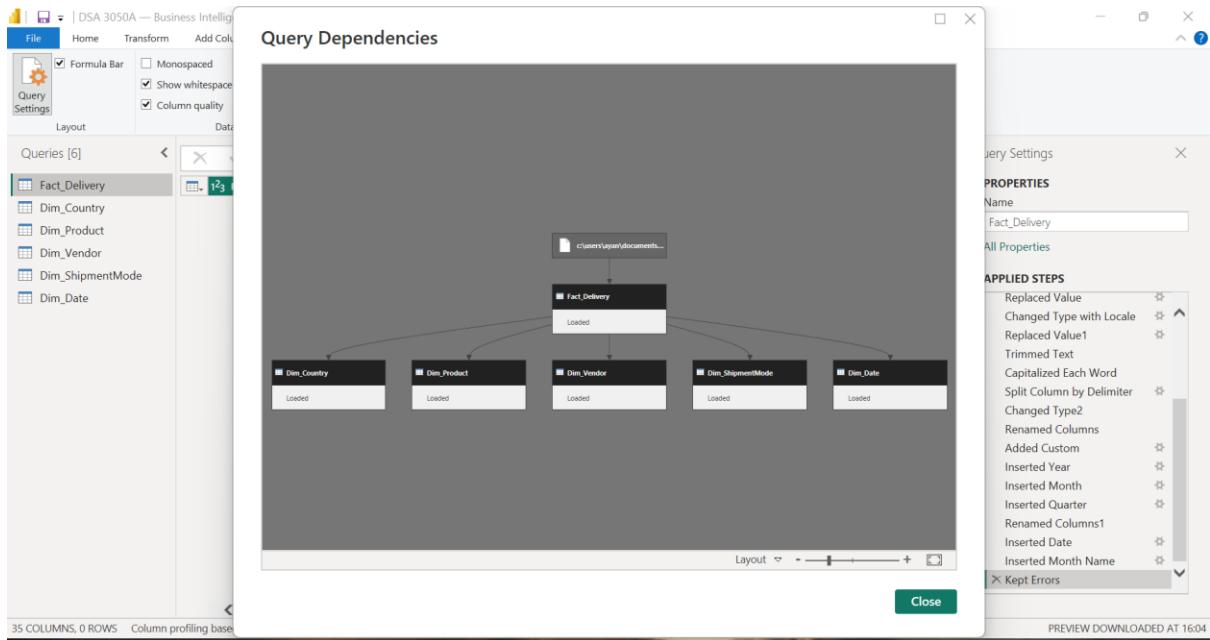
I created a calculated column to validate shipment value and support KPI calculations.



I extracted Year, Month, and Quarter from the date field to enable time-based trend analysis.



I renamed columns using business-friendly names for better report readability.

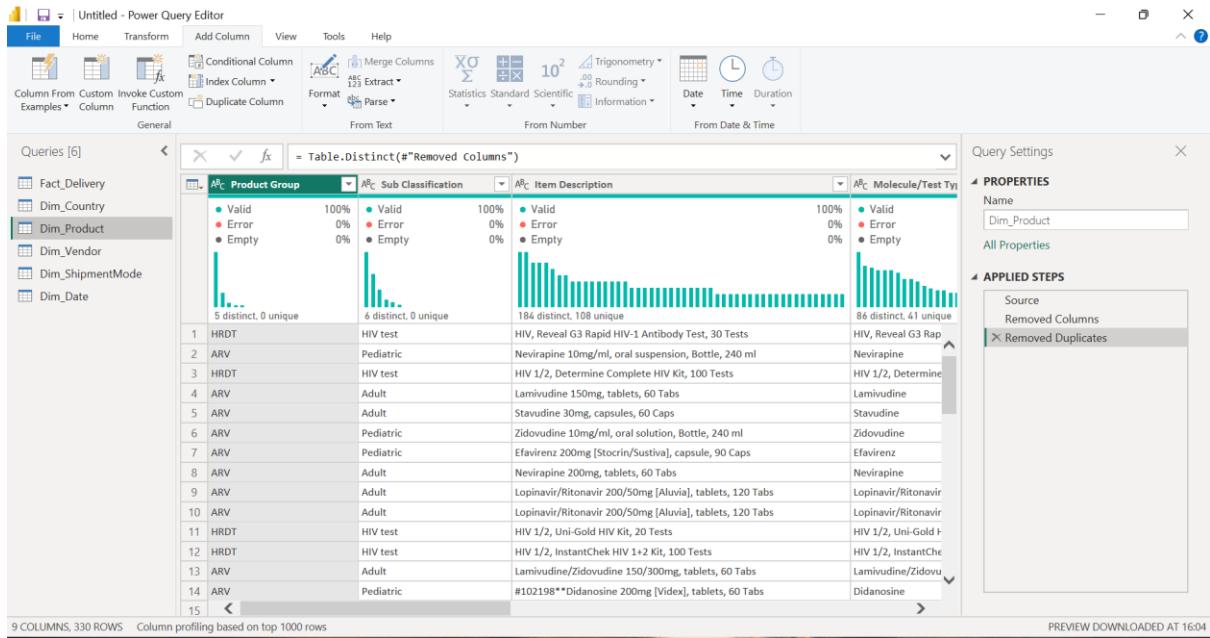


I reviewed the query dependency diagram to confirm a structured and efficient data transformation flow.

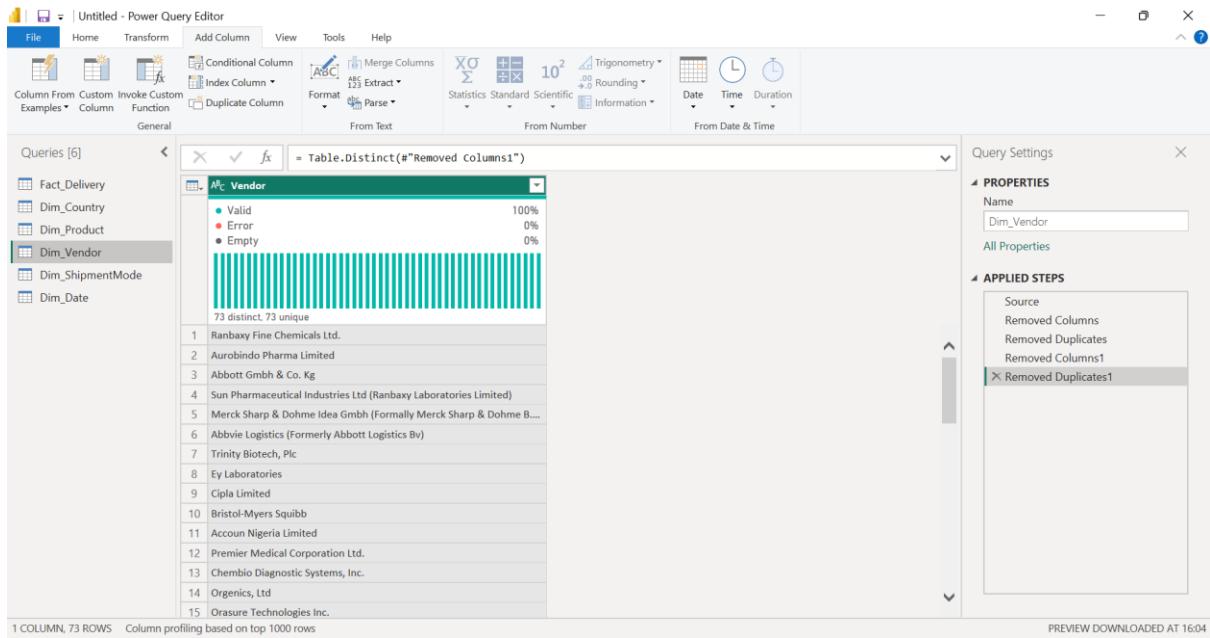
DIMENSION TABLE CREATION

The screenshot shows the 'Power Query Editor' window with the title 'Untitled - Power Query Editor'. The top menu includes 'File', 'Home', 'Transform', 'Add Column', 'View', 'Tools', and 'Help'. The 'Transform' tab is selected. The ribbon below the menu has sections for 'General', 'Text', 'Number', 'Date & Time', and 'Information'. On the left, a 'Queries [6]' list shows 'Fact_Delivery' and other dimension tables. The main area displays a table named 'Dim_Country' with 15 rows of data. The table has three columns: 'Country' (containing country names), 'Valid' (percentage of valid data), and 'Error' (percentage of error data). The 'Valid' column shows 100% for all rows. The 'Error' column shows 0% for all rows. The 'Information' ribbon shows various data types: Date, Time, Duration, and From Date & Time. The right side of the window has a 'Query Settings' pane with 'Properties' and 'Applied Steps'. The 'Applied Steps' pane lists 'Source', 'Removed Columns', 'Removed Duplicates', and 'Removed Columns1'. The 'Removed Columns1' step is highlighted. At the bottom, a note says '1 COLUMN, 43 ROWS Column profiling based on top 1000 rows' and 'PREVIEW DOWNLOADED AT 16:04'.

I created a Dim_Country table by removing duplicates to support geographic analysis.



I created a Dim_Product table to enable product-level filtering and categorization.



I created a Dim_Vendor table to allow vendor performance analysis within the model.

The screenshot shows the Power Query Editor interface with the following details:

- File** tab selected.
- Transform** ribbon tab selected.
- Queries [6]** pane on the left lists: Fact_Delivery, Dim_Country, Dim_Product, Dim_Vendor, Dim_ShipmentMode (selected), and Dim_Date.
- Applied Steps** pane on the right shows steps: Source, Removed Columns, Removed Duplicates, and Removed Columns1 (highlighted).
- Preview** pane displays the Dim_ShipmentMode table with 5 columns and 5 rows. The columns are labeled: Shipment Mode, Valid, Error, and Empty. The rows are: 1 Air, 2 N/A, 3 Truck, 4 Air Charter, and 5 Ocean.
- Query Settings** pane on the right shows the table is named "Dim_ShipmentMode".
- Bottom status bar**: 1 COLUMN, 5 ROWS, Column profiling based on top 1000 rows, PREVIEW DOWNLOADED AT 16:04.

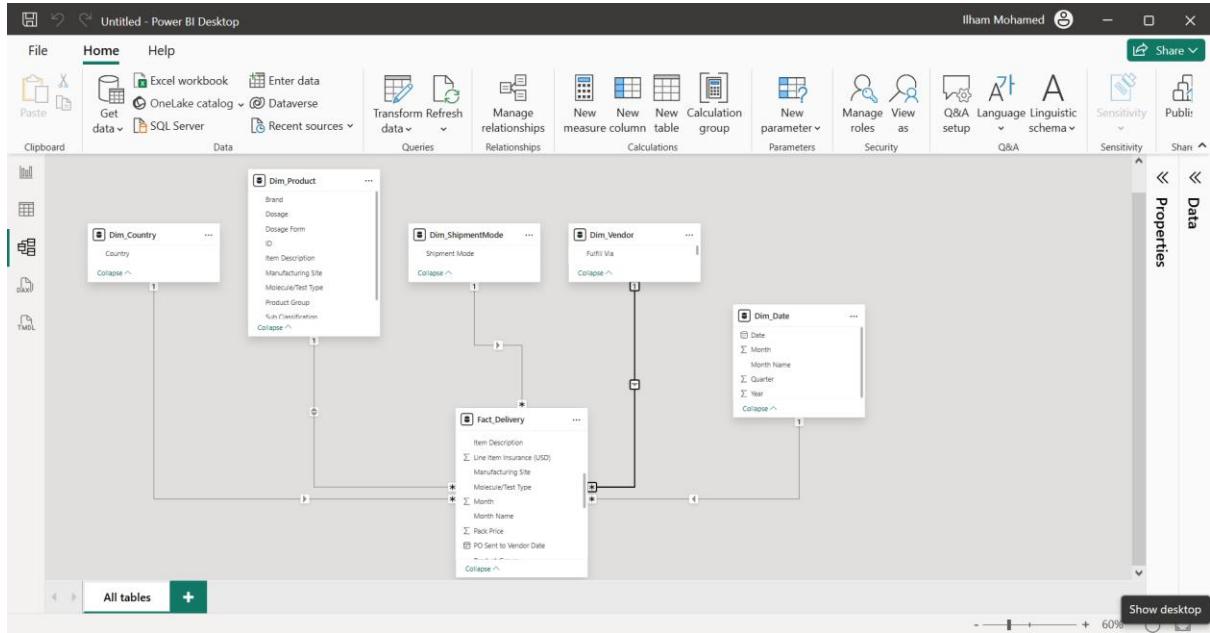
I created a Dim_ShipmentMode table to analyze logistics performance by transport mode.

The screenshot shows the Power Query Editor interface with the following details:

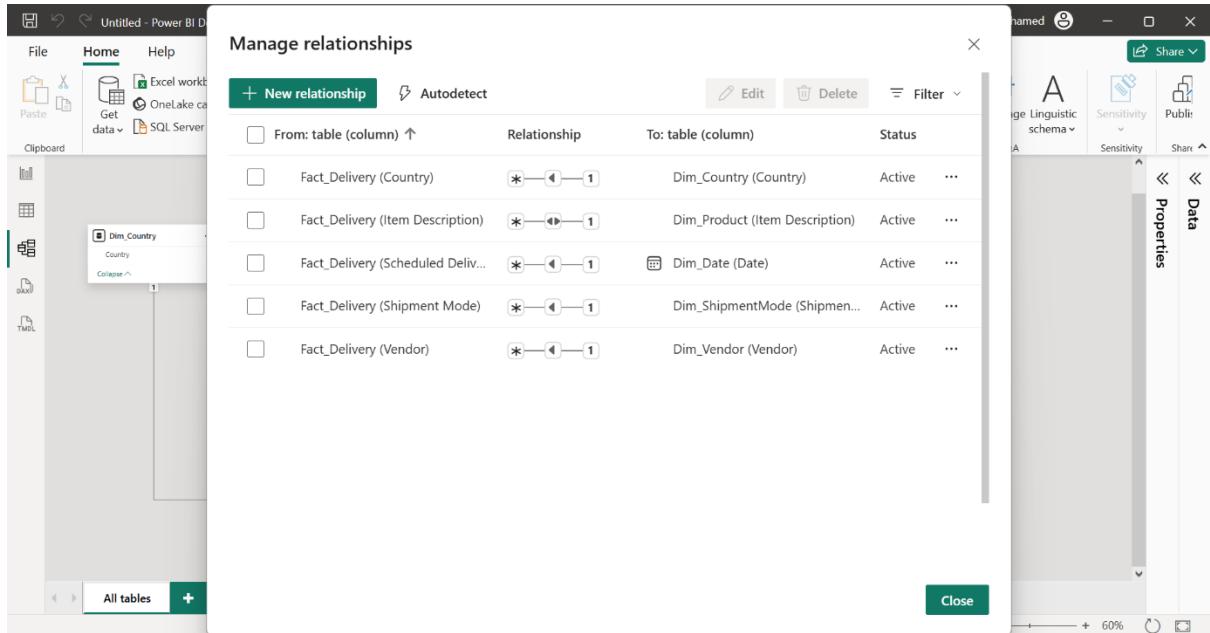
- File** tab selected.
- Transform** ribbon tab selected.
- Queries [6]** pane on the left lists: Fact_Delivery, Dim_Country, Dim_Product, Dim_Vendor, Dim_ShipmentMode, and Dim_Date (selected).
- Applied Steps** pane on the right shows steps: Source and Removed Columns.
- Preview** pane displays the Dim_Date table with 5 columns and 15 rows. The columns are labeled: Year, Month, Quarter, Date, and Month Name. The rows show data from 2006 to 2007, with specific dates like 02/06/2006, 14/11/2006, etc.
- Query Settings** pane on the right shows the table is named "Dim_Date".
- Bottom status bar**: 5 COLUMNS, 999+ ROWS, Column profiling based on top 1000 rows, PREVIEW DOWNLOADED AT 16:04.

I created a Dim_Date table to support time intelligence and proper chronological sorting.

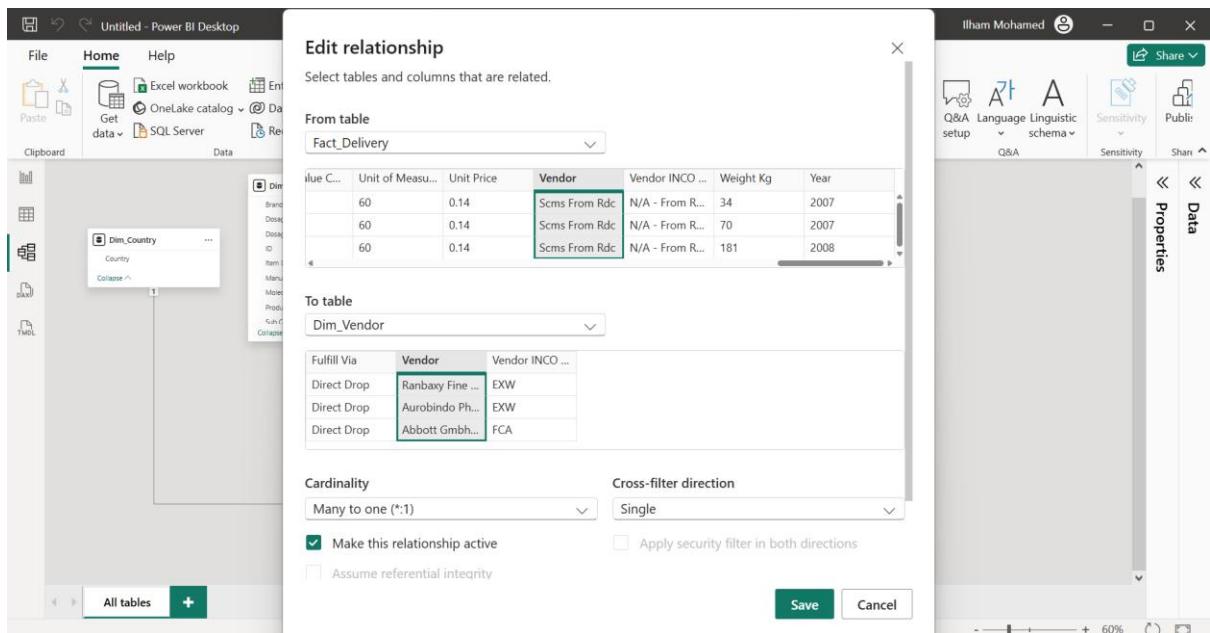
DATA MODELLING



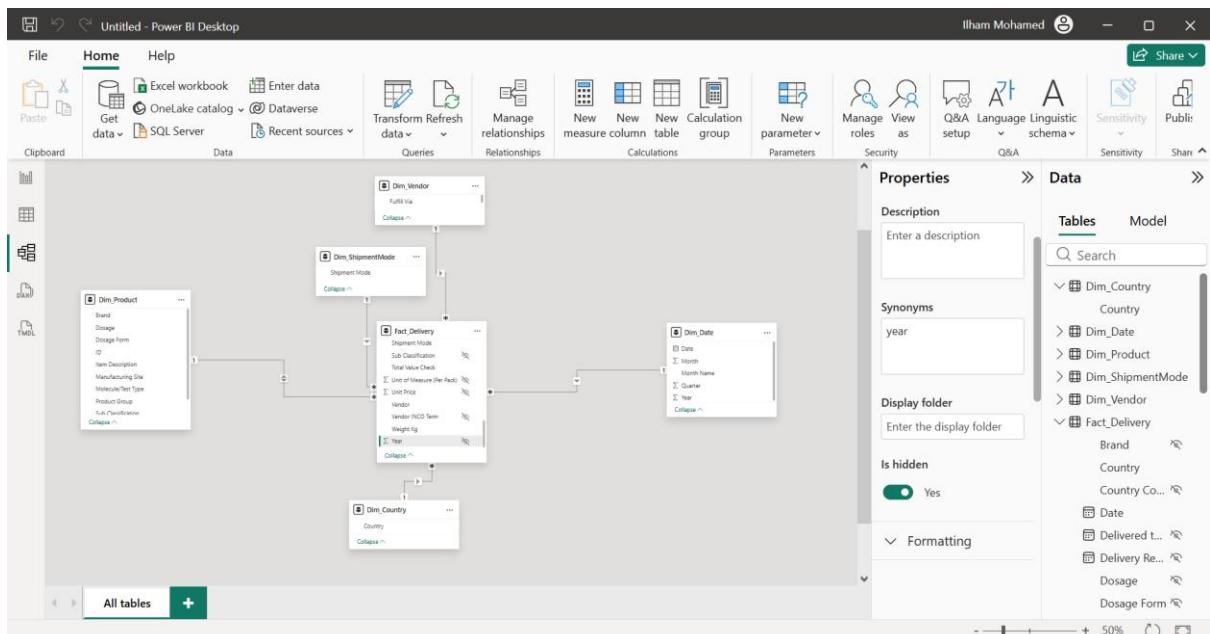
I designed a star schema with Fact_Delivery at the center and connected dimension tables using one-to-many relationships.



I configured relationships with correct cardinality and single-direction filtering to ensure accurate aggregation.

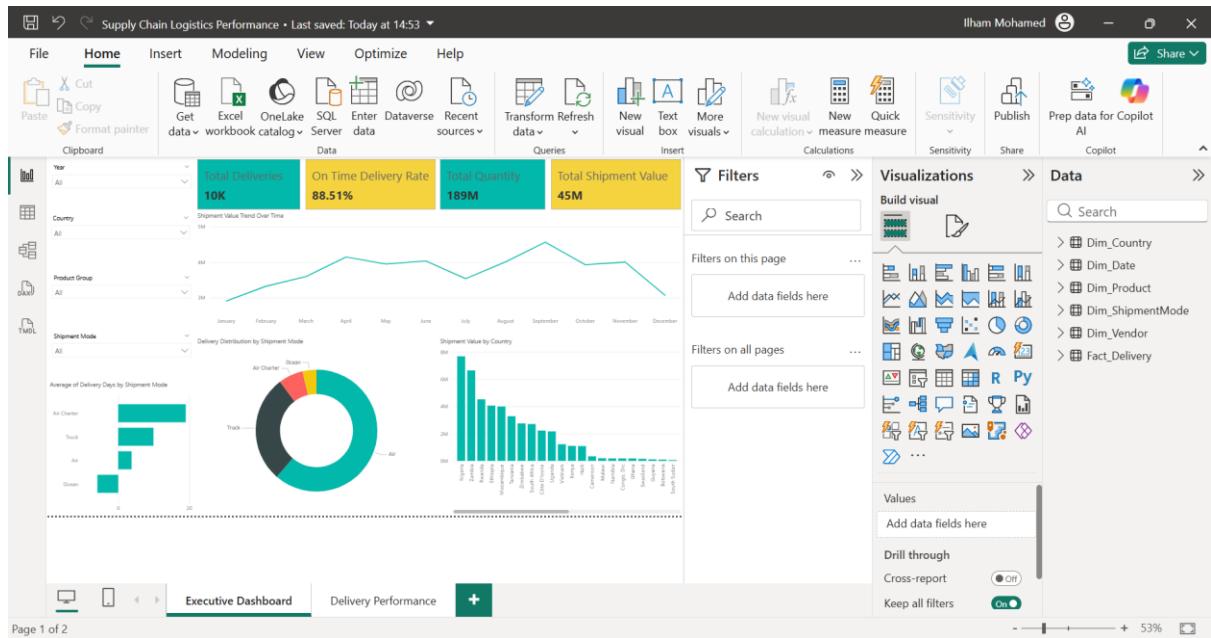


I validated the vendor relationship to confirm proper key matching and filter propagation.



I organized the model by hiding technical fields and arranging tables logically for usability.

DASHBOARD DEVELOPMENT

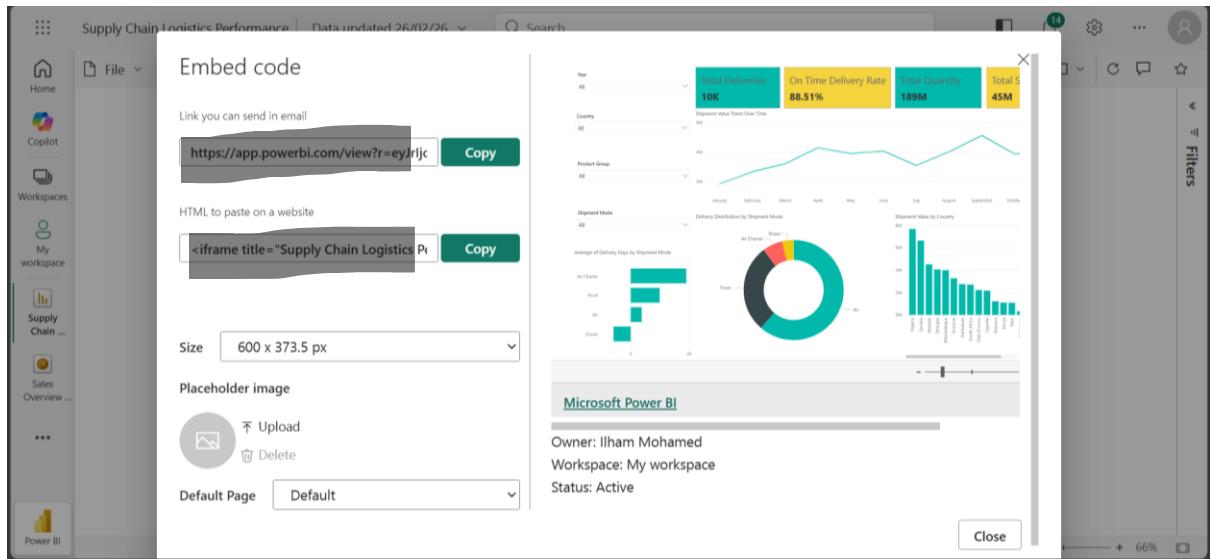


I developed an interactive executive dashboard including KPI cards, trend analysis, comparative country performance, shipment mode distribution, delivery efficiency metrics, and slicers with cross-filtering.

DASHBOARD INCLUDES:

- The dashboard includes KPI cards for **Total Deliveries**, **On-Time Delivery Rate**, **Total Quantity**, and **Total Shipment Value** to provide a high-level operational overview.
- A line chart showing **Shipment Value Trend by Month** is used to identify time-based performance patterns.
- A bar chart displaying **Shipment Value by Country** enables comparison of logistics performance across regions.
- A donut chart showing **Shipment Mode Distribution** illustrates the proportion of deliveries by transport mode.
- A bar chart of **Average Delivery Days by Shipment Mode** is used to evaluate delivery efficiency and identify delays.
- Slicers for **Year**, **Country**, **Product Group**, and **Shipment Mode** allow dynamic filtering of all visuals.
- All visuals are interconnected, enabling selections in one chart to filter the others for deeper analysis.

PUBLISHING & DEPLOYMENT



Link:<https://app.powerbi.com/view?r=eyJrIjoiMTNIYWRiMzYtYmQzM000MTAyLTg0ZjYtMmVkM2ZmOGM3MzlmIiwidCI6IjE2ZDgzZWU2LTI1NGEtNDY5ZC1hNmNjLTU0ZTJjYTIzMTNINyIsImMiOjh9>

I published the report to Power BI Service to deploy the solution.

I generated a public dashboard link and verified that the report is accessible online.

GITHUB LINK

https://github.com/Illham-sy/Supply_Chain_Logistics_Performance_152