**Measures creation using DAX**

After the data had been correctly modeled, the performance metrics were created using DAX. The following shows and explains the DAX used to calculate each metrics:

* **Total Revenue**

**TotalRevenue = SUMX(FactSales, FactSales[Quantity] \* RELATED(DimProducts[ProductPrice]))**

This formula computes total revenue by iterating through each row in the FactSales table. It multiplies the quantity sold (FactSales[Quantity]) with the price of the corresponding product (DimProducts[ProductPrice]) and sums up all the results.

* **Revenue Month-on-Month**

**TotalRevenue MoM% =**

**VAR \_\_PREV\_MONTH = CALCULATE([TotalRevenue], DATEADD(‘DimDate’[Date], -1, MONTH))**

**RETURN DIVIDE([TotalRevenue] - \_\_PREV\_MONTH, \_\_PREV\_MONTH)**

This calculation determines the month-over-month change in revenue. It first computes the previous month’s total revenue using the DATEADD function and then compares it to the current month's revenue, expressing the difference as a percentage.

* **Total Revenue Year-to-Date**

**TotalTarget YTD = TOTALYTD([TotalTarget], ‘DimDate’[Date])**

The year-to-date total target is computed using the TOTALYTD function. It accumulates values from the beginning of the year to the current date, based on the DimDate table's Date column.

* **Total Revenue Previous Year-to-Date**

**TotalRevenue Previous YTD = CALCULATE([TotalRevenue YTD], DATEADD(DimDate[Date], -1, YEAR))**

This metric calculates the year-to-date revenue for the same period in the previous year by shifting the date context backward by one year using the DATEADD function.

* **Total Revenue for the Same Period Last Year**

**TotalRevenue SPLY = CALCULATE([TotalRevenue], SAMEPERIODLASTYEAR(DimDate[Date]))**

Revenue for the same period in the previous year is derived by evaluating [TotalRevenue] in the context of equivalent dates in the prior year, using the SAMEPERIODLASTYEAR function.

* **Total Target Revenue**

**TotalTarget = SUMX(Targets, Targets[TargetQty] \* RELATED(DimProducts[ProductPrice]))**

This formula calculates total target revenue by multiplying each product's target quantity (Targets[TargetQty]) by its price (DimProducts[ProductPrice]) and summing up the results.

* **Total Target Year-to-Date**

**TotalTarget YTD = TOTALYTD([TotalTarget], ‘DimDate’[Date])**

The TOTALYTD function is used to aggregate total target revenue from the start of the year up to the current date, based on the DimDate[Date] column.

* **Revenue Achieved vs Revenue Target**

**Total Revenue vs Target = DIVIDE([TotalRevenue], [TotalTarget]) – 1**

This metric calculates the percentage difference between achieved revenue and the target by dividing [TotalRevenue] by [TotalTarget] and subtracting 1.

* **Volume Achieved vs Volume Target**

**Volume vs Target Volume = DIVIDE(SUM(FactSales[Quantity]), SUM(Targets[TargetQty])) - 1**

The variance between the actual and target sales volumes is calculated by dividing the total quantity sold (FactSales[Quantity]) by the total target quantity (Targets[TargetQty]), then subtracting 1 to express the result as a percentage.

* **Revenue Year-to-Date vs Target Year-to-Date**

**Revenue YTD vs Target YTD = DIVIDE([TotalRevenue YTD], [TotalTarget YTD]) – 1**

This metric evaluates the year-to-date revenue compared to the target as a percentage difference by dividing [TotalRevenue YTD] by [TotalTarget YTD] and subtracting 1.

**Data Analysis and Visualization**

The project focuses on analyzing data to derive actionable insights through precise performance tracking. Visualizations are designed to highlight critical metrics effectively, ensuring stakeholders can interpret trends and deviations at a glance. The formulas ensure consistency in calculations while the insights evolve dynamically with the data.