# Superstore Financials Report*

*(codes highlighted in yellow)


## I. Introduction

**Report Overview**: This report provides an in-depth analysis of the financial performance of a fictional store, called Superstore. It includes key metrics like Total Revenue, Profit, Units Sold and Discounts across 5 different countries (Mexico, France, USA, Germany and Canada) and years (2014 and 2013). The main objective of the report is to show the KPIs and their performance, mainly during the year 2014, and using its 2013 KPIs to show a comparison in performance.

The analysis is visualized through the use of pie charts, bar charts, KPI cards and Tool Tips that improve the visualization and understanding of the results.

The report is designed for sales managers, business analysts, and executives to monitor financial performance and make data-driven decisions.

**Dataset Import and Data Transformation:** The report utilizes a file in csv (comma separated values) format, which we load from Excel into Power BI. Next, a few transformations are made in specific columns, with the use of Power Query, to facilitate the understanding and create relationships between them.

Amongst the transformations, fist, we modify column names and data types. Regarding these transformations, we begin with the data type of the columns in the 'Financials' table, with the following code:

```
= Table.TransformColumnTypes(financials_Table,{{"Segment", type text}, {"Country", type text}, {"Product", type text}, {"Discount Band", type text}, {"Units Sold", type number}, {"Manufacturing Price", Int64.Type}, {"Sale Price", Int64.Type}, {"Gross Sales", type number}, {"Discounts", type number}, {" Sales", type number}, {"COGS", type number}, {"Profit", type number}, {"Date", type date}, {"Month Number", Int64.Type}, {"Month Name", type text}, {"Year", Int64.Type}})
```

With this code, which is quite straight-forward, we make sure that each of the columns included are formatted in the correct data type.

Next, we make sure all the rows in the columns are kept, with the code:

```
= Table.SelectRows(#"Changed Type", each true)
```

Following this, we make sure that the next columns and rows are the data type we require to proceed with our analysis:

```
= Table.TransformColumnTypes(#"Filtered Rows",{{"Discount Band", type text}, {"Units Sold", Int64.Type}, {"Manufacturing Price", Int64.Type}, {"Sale Price", Int64.Type}})
```

Finally, we rename the column 'Sales' to 'Net Sales':

```
= Table.RenameColumns(#"Changed Type1",{{" Sales", "Net Sales"}})
```

## II. Data Modeling

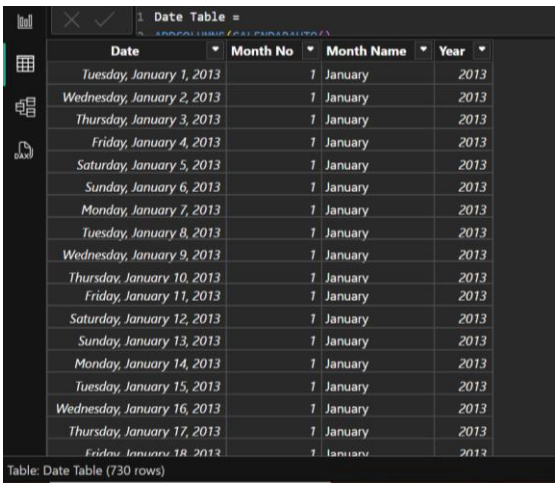
The model consists of 3 main tables: Financials of Superstore; Date Table and Z_Analysis (for DAX measures). Some DAX measures are also included in the other tables.

Financials of Superstore Table: this is the original table contained in the csv file. We performed the transformations described in the previous section on this table.

Date Table: we create this table using the code:

```
Date Table =

ADDCOLUMNS(CALENDARAUTO(),

"Month No", MONTH([Date]),

"Month Name", FORMAT([Date], "MMMM"),

"Year", YEAR([Date]))
```

We provide a view of the table as displayed in the report (in 'Table View'):




We generate a relation from 1 to N amongst Date Table and Financials of Superstore.

Z_Analysis Table: This table contains DAX measures created for visualizations. These measures include 'Discount Offered'; 'Discount Offered LY' (LY=Last Year); 'Narrative Tooltip Pie Charts' (to use with Tooltip); 'Orders' (Total sum of orders in the year 2014); 'Orders LY'; 'Profit' (Sum of profits during 2014); 'Profit LY'; 'Profit Margin' (Profit shown in %); 'Profit Margin LY'; 'Total Revenue' (Sum of total sales income); 'Total Revenue LY'; 'Total Units Sold' (Sum of total units sold by the store); 'LeastProfitableCountry' (country with the least profit made); 'MostProfitableCountry' (country with most profit); 'LeastSalesCountry' (country with the least sales); 'MostSalesCountry' (country with the most sales); 'LeastSoldProduct' (product type with least sales); 'MostSoldProduct' (product type with most sales); 'Top5Products' (top 5 most sold products); 'Report Conclusion Text' (text used for conclusions).

**Dax Measures:** We display the measures created for this report, by order of appearance in the report tables.

First, we create a measure to show the total discount offered:

```
Discount offered = SUM('Financials of Superstore'[Discounts])
```

Next, the total of discount offered the previous year (2013)

```
Discount Offered LY = CALCULATE([Discount offered], DATEADD('Date Table'[Date],-1,YEAR))
```

The following measure was created to display the country that had the least profits during 2014:

```
LeastProfitableCountry =
VAR ProfitByCountry = SUMMARIZE(
    'Financials of Superstore',
    'Financials of Superstore'[Country],
    "TotalProfit", SUM('Financials of Superstore'[Profit]))
VAR BottomCountry =
  TOPN(1, ProfitByCountry, [TotalProfit], ASC )
```

```
VAR LeastProfitable =
    SELECTCOLUMNS(BottomCountry, "Country", 'Financials of Superstore'[Country])
VAR ProfitAmount =
    CALCULATE(
        SUM('Financials of Superstore'[Profit]),
        'Financials of Superstore'[Country] = MINX(LeastProfitable, [Country]))
RETURN
    "The least profitable country is " & MINX(LeastProfitable, [Country]) &
    " with profit of " & FORMAT(ProfitAmount, "Currency")
```

The following measure displays the country with the least number of sales:

```
LeastSalesCountry =
VAR SalesByCountry = SUMMARIZE(
        'Financials of Superstore',
        'Financials of Superstore'[Country],
        "TotalSales", SUM('Financials of Superstore'[Net Sales]))
VAR BottomCountry =  TOPN( 1,
        SalesByCountry,
        [TotalSales],
        ASC )
VAR LeastSales = SELECTCOLUMNS(BottomCountry, "Country", 'Financials of
Superstore'[Country])
```

```
VAR SalesAmount =
    CALCULATE( SUM('Financials of Superstore'[Net Sales]),
        'Financials of Superstore'[Country] = MINX(LeastSales, [Country]))
RETURN
    "The country with the least sales is " & MINX(LeastSales, [Country]) &
    " with sales of " & FORMAT(SalesAmount, "Currency");
```

The next DAX measure describes the least sold product:

```
LeastSoldProduct =
VAR SalesByProduct = SUMMARIZE(
        'Financials of Superstore',
        'Financials of Superstore'[Product],
        "TotalUnitsSold", SUM('Financials of Superstore'[Units Sold]))
VAR BottomProduct =
    TOPN( 1, SalesByProduct,
        [TotalUnitsSold],
        ASC)
VAR LeastSold =
    SELECTCOLUMNS(BottomProduct, "Product", 'Financials of Superstore'[Product])
VAR SalesAmount =
```

```
    CALCULATE(
        SUM('Financials of Superstore'[Net Sales]),
        'Financials of Superstore'[Product] = MINX(LeastSold, [Product]))
RETURN
    "The least sold product is " & MINX(LeastSold, [Product]) &
    " with sales of " & FORMAT(SalesAmount, "Currency")
```

We create the next measure to display the country with the highest profits:

```
MostProfitableCountry =
VAR ProfitByCountry = SUMMARIZE(
        'Financials of Superstore',
        'Financials of Superstore'[Country],
        "TotalProfit", SUM('Financials of Superstore'[Profit]))
VAR TopCountry =
    TOPN(1, ProfitByCountry, [TotalProfit], DESC)
VAR MostProfitable =
    SELECTCOLUMNS(TopCountry, "Country", 'Financials of Superstore'[Country])
VAR ProfitAmount =
    CALCULATE(
        SUM('Financials of Superstore'[Profit]),
        'Financials of Superstore'[Country] = MINX(MostProfitable, [Country]))
RETURN
```

```
    "The most profitable country is " & MINX(MostProfitable, [Country]) &
    " with profit of " & FORMAT(ProfitAmount, "Currency")
```

The following measure shows us the country with the most sales:

```
MostSalesCountry =
VAR SalesByCountry =
    SUMMARIZE(
        'Financials of Superstore',
        'Financials of Superstore'[Country],
        "TotalSales", SUM('Financials of Superstore'[Net Sales]))
VAR TopCountry =
    TOPN(1, SalesByCountry,  [TotalSales], DESC)
VAR MostSales =
    SELECTCOLUMNS(TopCountry, "Country", 'Financials of Superstore'[Country])
VAR SalesAmount =
    CALCULATE(
        SUM('Financials of Superstore'[Net Sales]),
        'Financials of Superstore'[Country] = MINX(MostSales, [Country]) )
RETURN
    "The country with the most sales is " & MINX(MostSales, [Country]) &
    " with sales of " & FORMAT(SalesAmount, "Currency")
```

The most sold product is displayed with the next measure:

```
MostSoldProduct =

VAR SalesByProduct =
    SUMMARIZE(
        'Financials of Superstore',
        'Financials of Superstore'[Product],
        "TotalUnitsSold", SUM('Financials of Superstore'[Units Sold]) )
VAR TopProduct =
    TOPN(1, SalesByProduct, [TotalUnitsSold], DESC )
VAR MostSold =
    SELECTCOLUMNS(TopProduct, "Product", 'Financials of Superstore'[Product])
VAR SalesAmount =
    CALCULATE(SUM('Financials of Superstore'[Net Sales]),
        'Financials of Superstore'[Product] = MINX(MostSold, [Product]))
RETURN
    "The most sold product is " & MINX(MostSold, [Product]) &
    " with sales of " & FORMAT(SalesAmount, "Currency")
```

We also created a narrative (measure) to be used in the ToolTip of our Pie Charts:

```
Narrative Tooltip Pie charts =

VAR Text1 = "You have selected "
VAR Text2 = ", which has a profit of "
```

```
VAR TotalRevenue = FORMAT([Total Revenue], "$ #,###")

VAR TotalProfit = FORMAT([Profit], "$ #,###")

RETURN

Text1 & SELECTEDVALUE('Financials of Superstore'[Country]) & Text2 & TotalProfit & " and total revenue of " & TotalRevenue
```

Next, we provide the measures utilized in our KPI's:

**Orders** = SUM('Financials of Superstore'[Units Sold])

**Orders LY** = CALCULATE([Orders], DATEADD('Date Table'[Date],-1,YEAR))

**Profit** = SUM('Financials of Superstore'[Profit])

**Profit margin** = DIVIDE([Profit], [Total Revenue])

**Profit Margin LY** = CALCULATE([Profit margin], DATEADD('Date Table'[Date],-1,YEAR))

**Profits LY** = CALCULATE([Profit], DATEADD('Date Table'[Date],-1,YEAR))

**Top5Products** =

```
IF (RANKX(ALL('Financials of Superstore'[Product]), [Total Units Sold], , DESC) <= 5, [Total Units Sold])
```

**Total Revenue** = SUM('Financials of Superstore'[Net Sales])

**Total Revenue LY** = CALCULATE([Total Revenue], DATEADD('Date Table'[Date],-1,YEAR))

**Total Units Sold** = SUM('Financials of Superstore'[Units Sold])

The last measure is a report conclusion narrative, where we show the product with the highest sales, the one with the lowest sales; the countries with the highest and lowest profit, and the countries with the highest and lowest sales.

**Report Conclusion Text** =

[MostSoldProduct] & UNICHAR(10) & UNICHAR(10) &

[MostSalesCountry] & UNICHAR(10) & UNICHAR(10) &

[MostProfitableCountry] & UNICHAR(10) & UNICHAR(10) &

[LeastSoldProduct] & UNICHAR(10) & UNICHAR(10) &

[LeastSalesCountry] & UNICHAR(10) & UNICHAR(10) &

[LeastProfitableCountry]

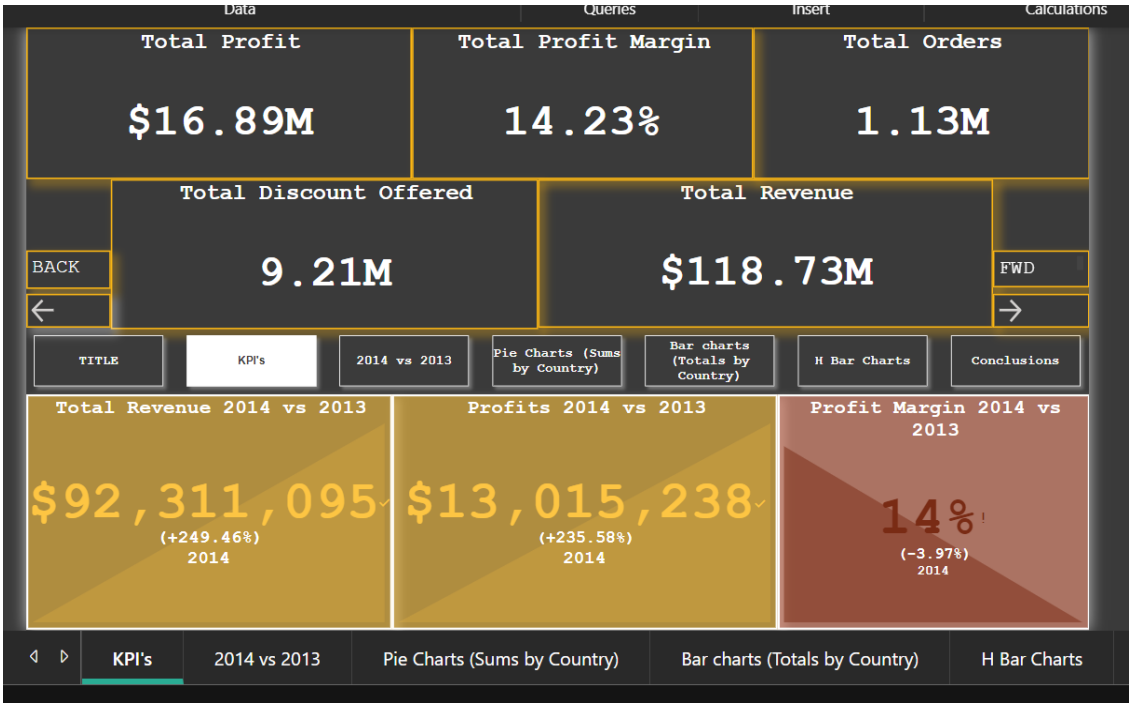
## III. Charts and Visualizations and KPI's

We begin by displaying a screenshot of the report page called "KPI's", where the main indicators of the company's performance are shown. The cards displaying the main metrics are: "**Total Profit**" ($17M); "**Total Profit Margin**" (14.23%); "**Total Orders**" (1.13M); "**Total Discount Offered**"

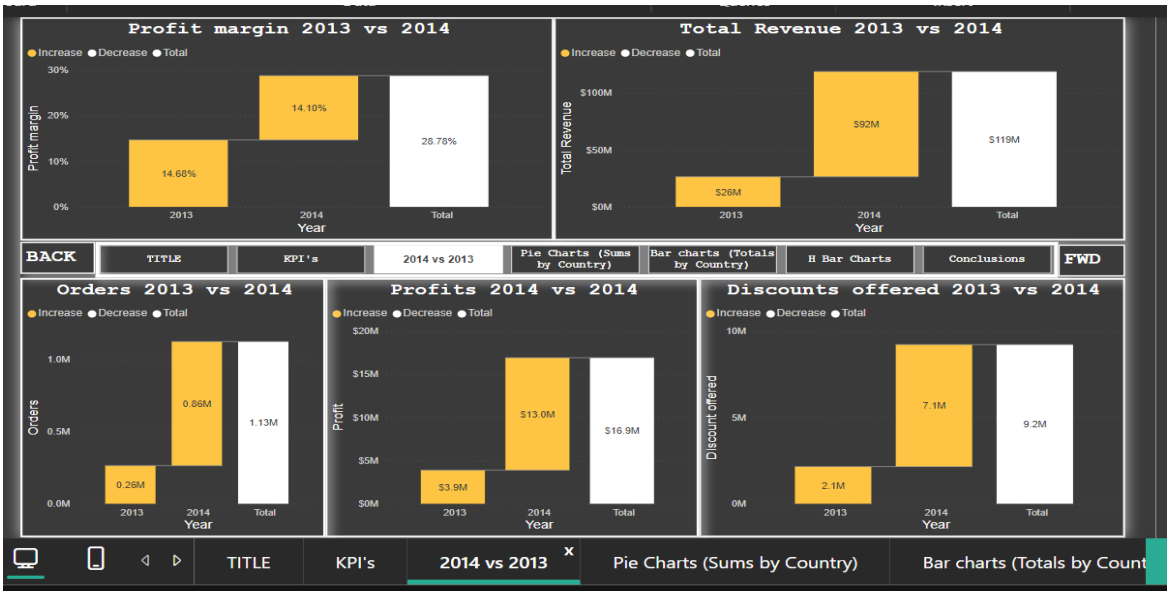
($9.21M); "**Total Revenue**" ($119M). Also, we created 3 visual cards comparing "**Total Revenue 2014 vs 2013**"; "**Profits 2013 vs 2014**" and "**Profit Margin 2014 vs 2013**". The 'profit margin' shows a decrease from 14.70% in 2013 to 14.10% in 2014.

These metrics are located at the bottom of the "KPI's" report page.

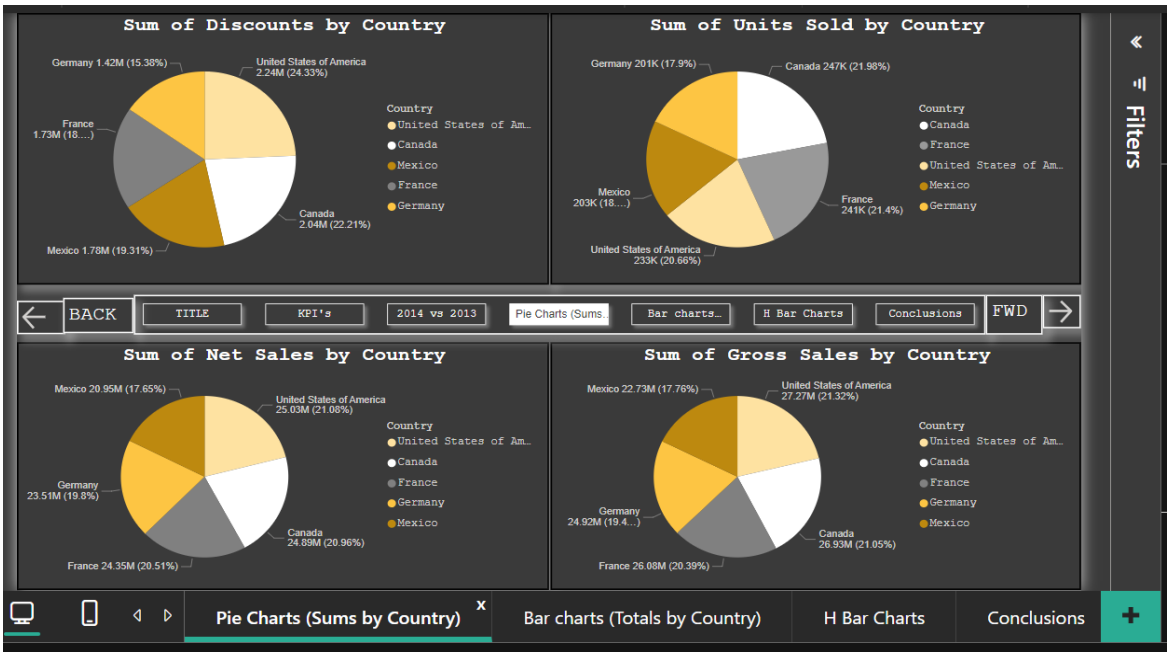
Navigation buttons were also added to improve report reading and understanding.




The next report page "2014 vs 2013" displays charts that show the differences between 2013 and 2014 in "Total Revenue", "Profit Margin", "Profits", "Orders" (total quantities), and "Discounts Offered". We provided 'waterfall' charts to improve visualization of KPI's shown in the previous report.



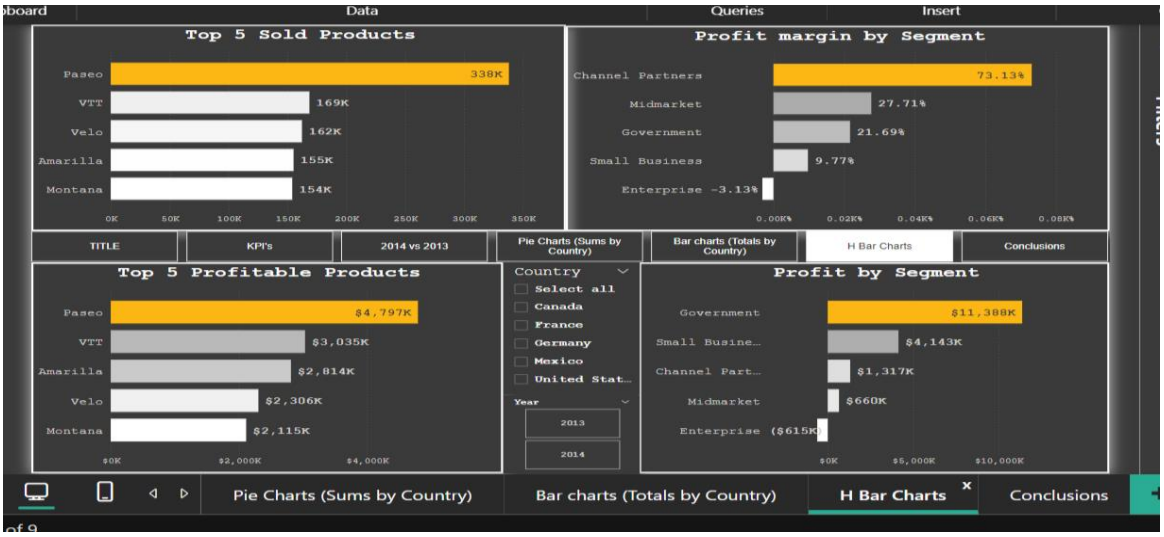

In the following page, called Pie Charts, we utilize this type of chart to display what each country analyzed contributed to “Discounts”, “Units Sold”, “Net Sales” and “Gross Sales”.




In these charts we can easily see the participation (in % and sum) of each country in every measure and indicators created for this purpose.

We also created a page called “ToolTip Pie Charts” to be used in this page, expanding the details of each country contribution to the totals. The Tool tip is described in the section called ToolTip.


H (Horizontal) Bar charts:




This report page displays, using horizontal bar charts, the “top 5 sold products”, “the top 5 profitable products”, the “profit by segment” and the “profit margin by segment”. The numbers

are straight-forward and easy to read. As a noticeable detail, the segment called “Enterprise” was the only one that showed negative profit (-$614K) and profit margin (-3.13%).

## IV. ToolTips:

In this section, we describe succinctly the tooltips created or this report. In the report page named “Pie Charts” we apply a tooltip created with a DAX measure, by using the following code:

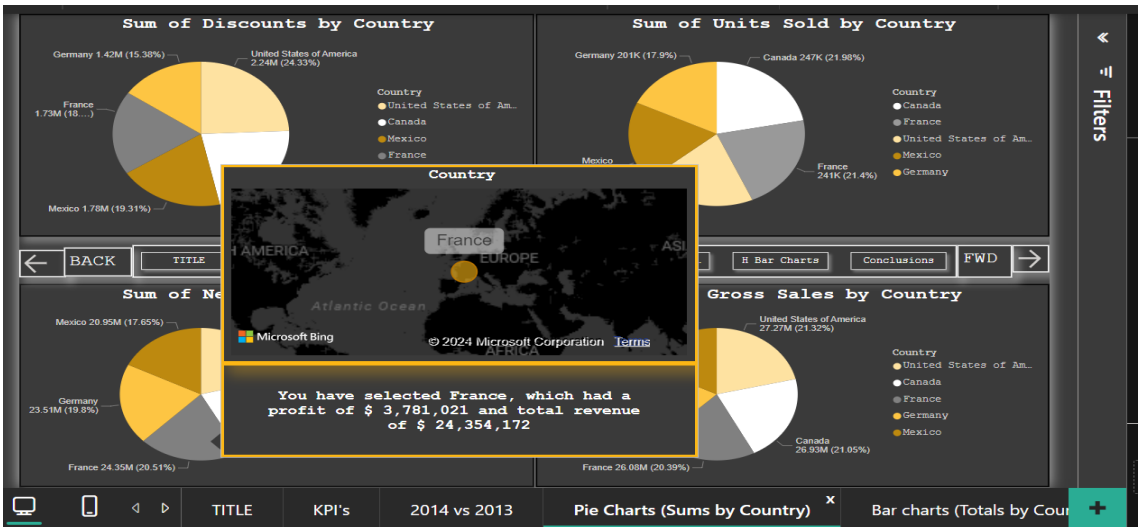
```
Narrative Tooltip Pie charts =

VAR Text1 = "You have selected "

VAR Text2 = ", which has a profit of "

VAR TotalRevenue = FORMAT([Total Revenue], "$ #,###")

VAR TotalProfit = FORMAT([Profit], "$ #,###")

RETURN

Text1 & SELECTEDVALUE('Financials of Superstore'[Country]) & Text2 & TotalProfit & " and total revenue of " & TotalRevenue
```

With this measure we make sure that the report page displays a text that reads:

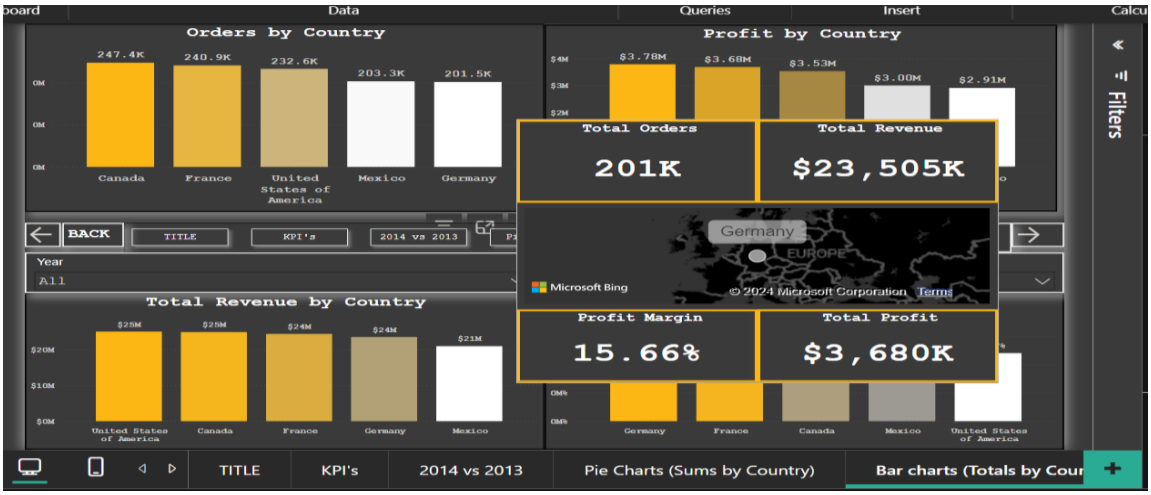
“You have selected [Country Name], which had a profit of [Profit value in currency], and a total revenue of [Total Revenue value in currency]”. We also added some cards to display KPI’s using measures created previously (Net Sales, Gross Sales, Units Sold and Discounts Offered).

A map visualization was added to show the country being referenced.

A screenshot of the report page is provided next:



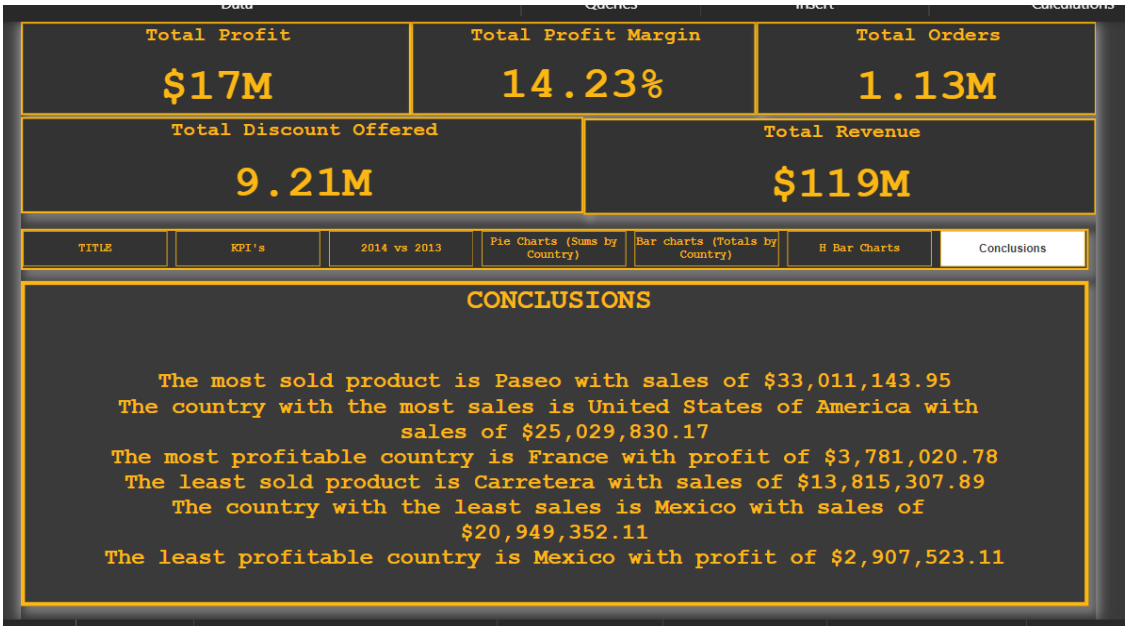

A second tooltip was generated to display important data and measures in the Bar Charts page. In this tooltip, we include visual cards with some important measures, such as “Total Profit”, “Total Orders”, “Total Revenue” and “Profit Margin”. Also, a map visualization is added to display the country we are making reference to.




## V. Conclusions:

In the last report page, we display a number of visual cards with what we considered to be the most important KPI's. A Report Conclusion Text is created using a DAX measure that shows the "Most Sold Product"; the "Most Sales Country" (country with the highest sales); the "Most Profitable Country" (country with highest profits); and the opposites, these are, the "Least Sold Product"; the "Least Sales Country" and "Least Profitable Country".

```
Report Conclusion Text =
    [MostSoldProduct] & UNICHAR(10) & UNICHAR(10) &
    [MostSalesCountry] & UNICHAR(10) & UNICHAR(10) &
    [MostProfitableCountry] & UNICHAR(10) & UNICHAR(10) &
    [LeastSoldProduct] & UNICHAR(10) & UNICHAR(10) &
    [LeastSalesCountry] & UNICHAR(10) & UNICHAR(10) &
    [LeastProfitableCountry]
```




As the conclusion text states, the product with the highest sales is Paseo, with sales of $33M; the country with the most sales is the US, with sales of $25M; the most profitable country being

France, with profits of $3.78M. On the other extreme, the product with the least sales is Carretera, reaching $13.81M; the country with the least number of sales is Mexico, with sales of $20.95M; and also, Mexico was the country with the least profits, reaching around $2.9M.