Visualization Magic

Getting down and dirty with Scatter Chart

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About Us

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Presenter for several SQL Saturdays

5 X 140.6 Ironman Finisher | 21 X 70.3

12 Gran Fondo / 100 Mile Bike Race

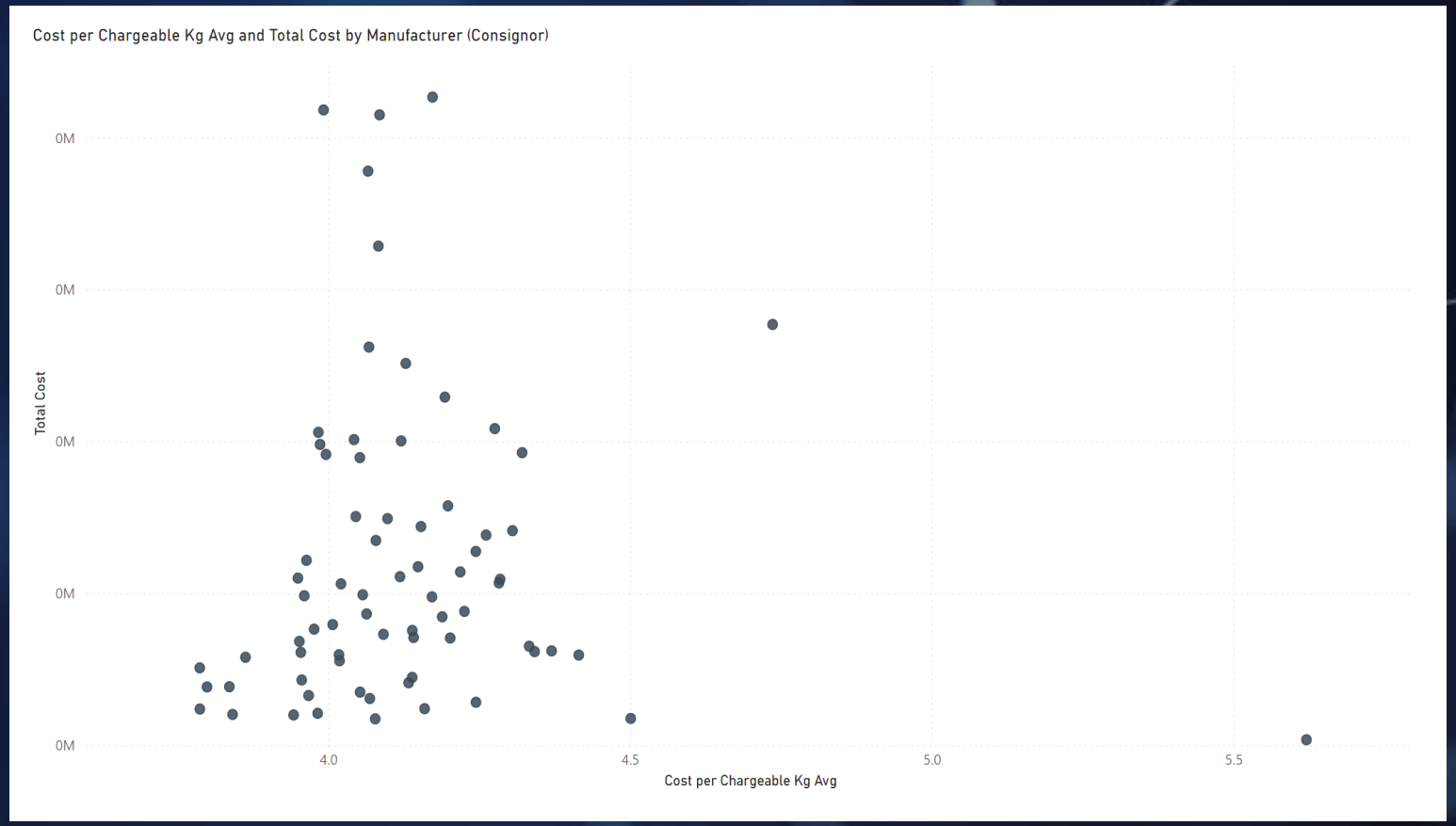
MMI

Agenda

1. Create the Scatter Chart Visual
2. Apply Parameters & Reference Lines
3. Format the colors
4. Create custom colors
5. Continue to format the colors
6. Add a tree map
7. Redo the colors for Countries

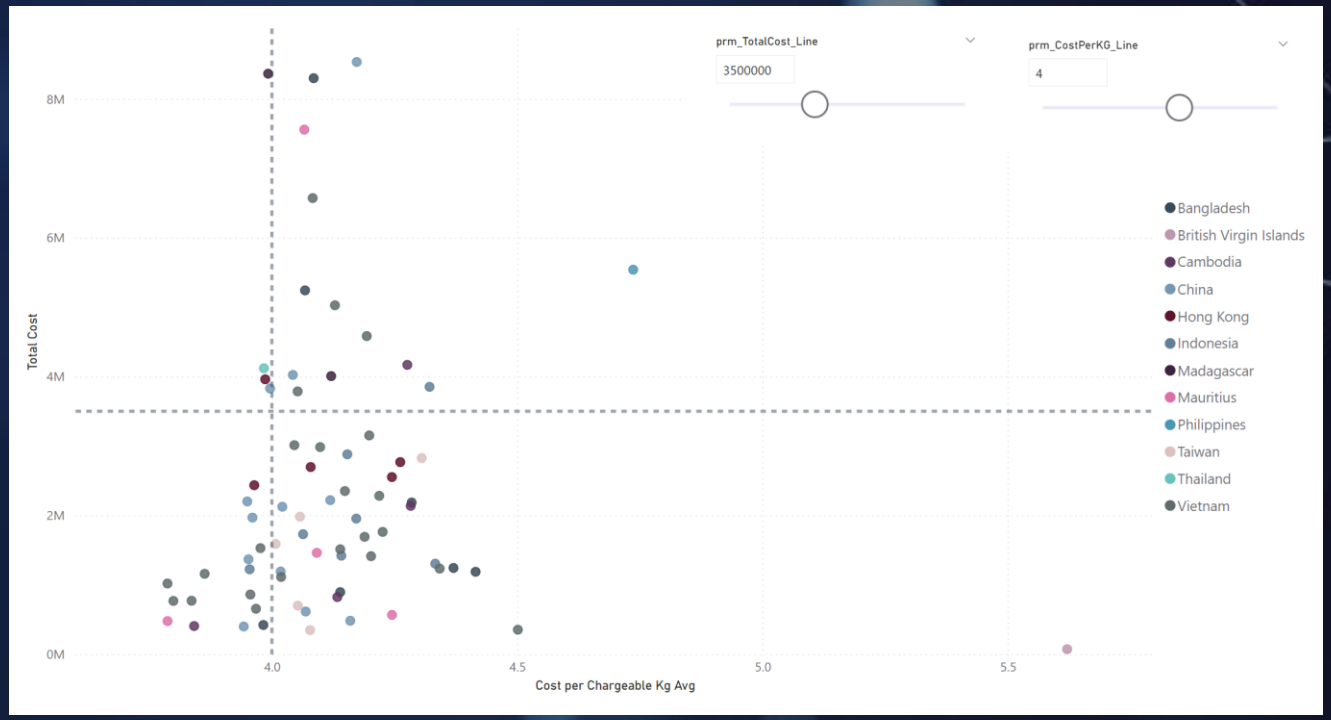
Part 1: Create the Scatter Chart Visual

1. We have a data model with Manufacturer, Country, Products, and Shipping Costs.
2. We want to know how much we are paying for shipping by Manufacturer.
3. We will create a couple of Measures for the Calculations to get us started to calculate the shipping.



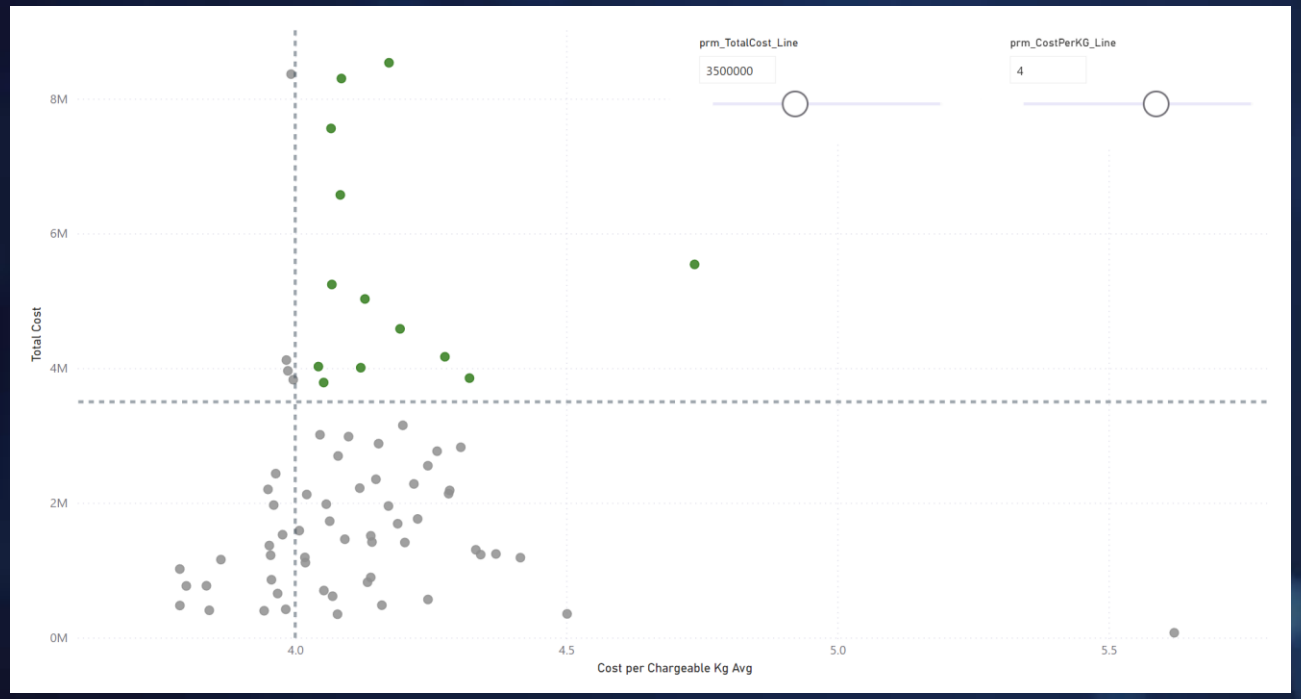
Part 2: Apply Parameters & Reference Lines

1. Let's create two reference lines
2. Let's create a Numeric parameter for the Y-axis (TotalCost)
3. Connect Y-axis to parameter (for Total Cost)
4. Let's create a Numeric parameter for the X-axis (Cost per Chargeable Kg)
5. Connect X-axis to parameter (for Cost per Chargeable Kg)
6. Add 'Consignor Country' in the Legend
7. Clean up Titles and Legend position (Center right)



Part 3: Format the colors

1. First lets remove the Legend since we cannot do custom formatting in a Legend
2. We want to focus on the outliers which is the highest cost per Kg (top right Quad) through a measure
   a) We want to see values >= the Y numeric Parameter
   b) We want to see values >= the x numeric Parameter
3. We will change the color for the outliers and change the other 3 quadrants to grey




```
CF Scatter Quadrant =
IF(
    [Total Cost] >= [prm_TotalCost_Line Value]
    &&
    [Cost per Chargeable Kg Avg] >= [prm_CostPerKG_Line Value],
    "Green", // "rgb(144, 144, 144)"
    "rgb(144, 144, 144)"
)
```

Part 4: Create custom colors

1. Create a Measure to hold the countries Colors

```
CF Scatter Quadrant =
IF(
    [Total Cost] >= [prm_TotalCost_Line Value]
    &&
    [Cost per Chargeable Kg Avg] >= [prm_CostPerKG_Line Value],
    [Country Colors], // "rgb(144, 144, 144)"
    "rgb(144, 144, 144)"
)
```

```
Country Colors =
VAR Country = TRIM( SELECTEDVALUE( dimManufacturer[Consignor Country] ) )
VAR Transparency = 1
VAR Color =
SWITCH(
    Country,
    "Bangladesh", "rgba(7, 194, 177, "&Transparency&")",
    "British Virgin Islands", "rgba(0, 65, 57, "&Transparency&")",
    "Cambodia", "rgba(150, 177, 173, "&Transparency&")",
    "China", "rgba(147, 200, 255, "&Transparency&")",
    "Hong Kong", "rgba(87, 146, 225, "&Transparency&")",
    "Indonesia", "rgba(84, 84, 121, "&Transparency&")",
    "Madagascar", "rgba(54, 101, 163, "&Transparency&")",
    "Mauritius", "rgba(133, 98, 195, "&Transparency&")",
    "Philippines", "rgba(53, 153, 184, "&Transparency&")",
    "Taiwan", "rgba(223, 191, 191, "&Transparency&")",
    "Thailand", "rgba(74, 197, 187, "&Transparency&")",
    "Vietnam", "rgba(95, 107, 109, "&Transparency&")"

)

Return
Color
```

prm_TotalCost_Line
3500000
prm_CostPerKG_Line
4
8M
6M
4M
2M
0M
Total Cost
4.0
4.5
5.0
5.5
Cost per Chargeable Kg Avg

Part 5: Continue to format the colors

1. Lets fix the rest of the markers in the other 3 quadrants by duplicating Country Colors
2. Changing the Transparency to 0.2
3. Updating our CF Scatter Quadrant measure

```
CF Scatter Quadrant =
IF(
    [Total Cost] >= [prm_TotalCost_Line Value]
    &&
    [Cost per Chargeable Kg Avg] >= [prm_CostPerKG_Line Value],
    [Country Colors], // "rgb(144, 144, 144)"
    [Country Colors T20]
)
```

Part 6: Add a tree map

1. Add a simple tree map visual inside the Scatter Chart Visual to show the country colors.

Part 7: Redo the colors for Countries

1. Export your theme to a Json file
2. Import the Json file to Power BI
3. Update the DAX so that it points to the new table imported

Thank you

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