World Happiness Power BI Report (2015-23)

About Dataset

The World Happiness Report is a comprehensive annual survey that ranks countries based on their perceived levels of happiness. This dataset provides valuable insights into the factors that contribute to well-being and can be used to inform policy decisions and social initiatives.

Key Features of the Dataset:

- **Happiness Scores:** Ranks countries based on their overall happiness levels.
- **Contributing Factors:** Includes data on six key factors that influence happiness: economic production, social support, life expectancy, freedom, absence of corruption, and generosity.
- **Historical Data:** Provides data from multiple years, allowing for analysis of trends and changes over time.

Contributing Factors Description:

GDP per Capita: This measures the average income per person in a country. It reflects the economic prosperity and material well-being of a population.

Social Support: This measures the extent to which people have social connections and can rely on others for help and support.

Life Expectancy: This measures the average lifespan of people in a country. It reflects the overall health and quality of life.

Freedom: This measures the perceived level of personal freedom and political liberties in a country.

Absence of Corruption: This measures the perceived level of corruption in government and institutions.

Generosity: This measures the level of giving and volunteering in a country, reflecting social cohesion and trust.

By exploring this dataset and analyzing the relationships between different variables, one can gain valuable insights into the factors that contribute to human happiness and well-being.

Dataset links:

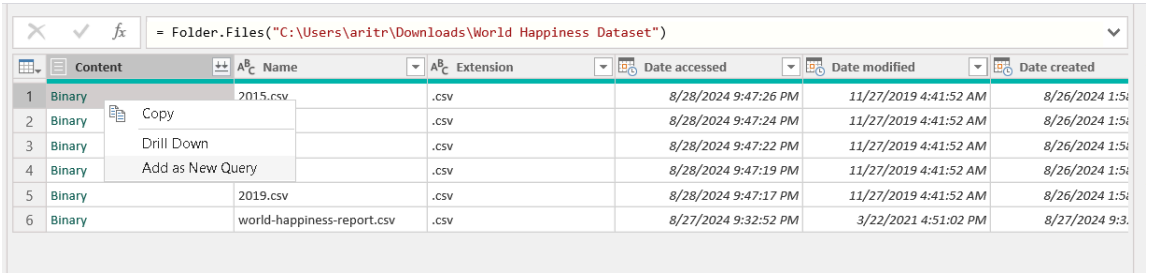
- 2015-19: https://www.kaggle.com/datasets/unsdsn/world-happiness
- 2020: https://www.kaggle.com/datasets/londeen/world-happiness-report-2020
- 2021: https://www.kaggle.com/datasets/ajaypalsinghlo/world-happiness-report-2021
- 2022: https://www.kaggle.com/datasets/ajaypalsinghlo/world-happiness-report-2022
- 2023: https://www.kaggle.com/datasets/ajaypalsinghlo/world-happiness-report-2023

Data Transformation

The first task was to load all the datasets in Power Query and get a view of the data. The goal was to transform each dataset individually and normalize them to combine into one single query to be used for dashboard building

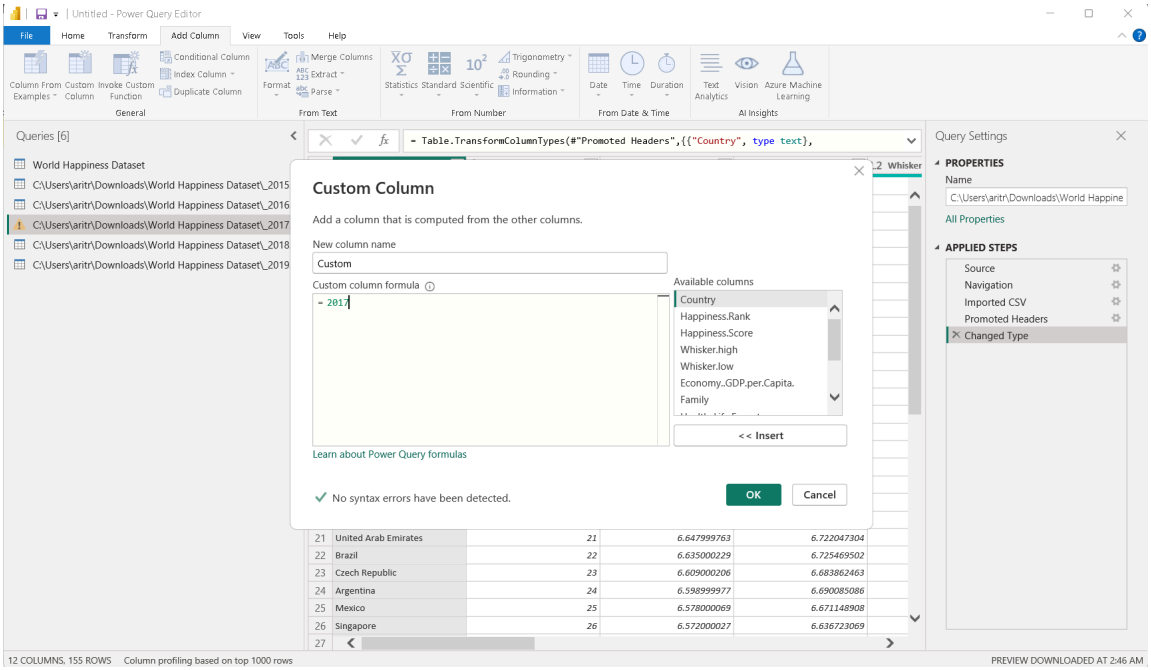
- **Added the whole folder**

- **Added each csv file as a new query**

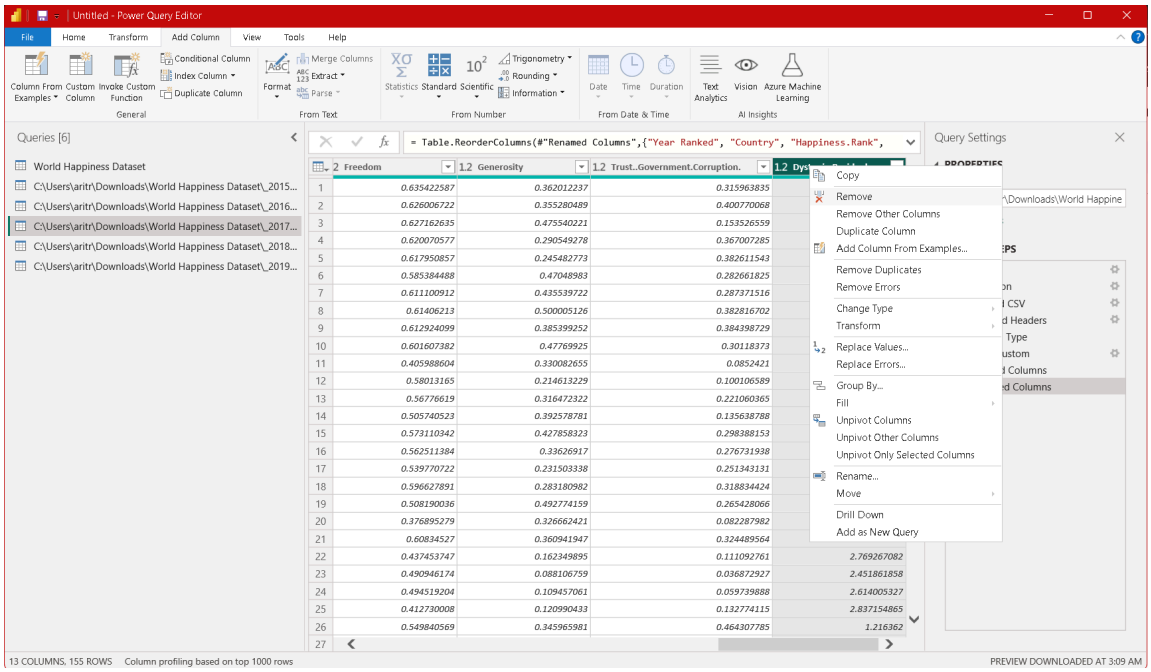


- **Added a custom year column for each dataset**

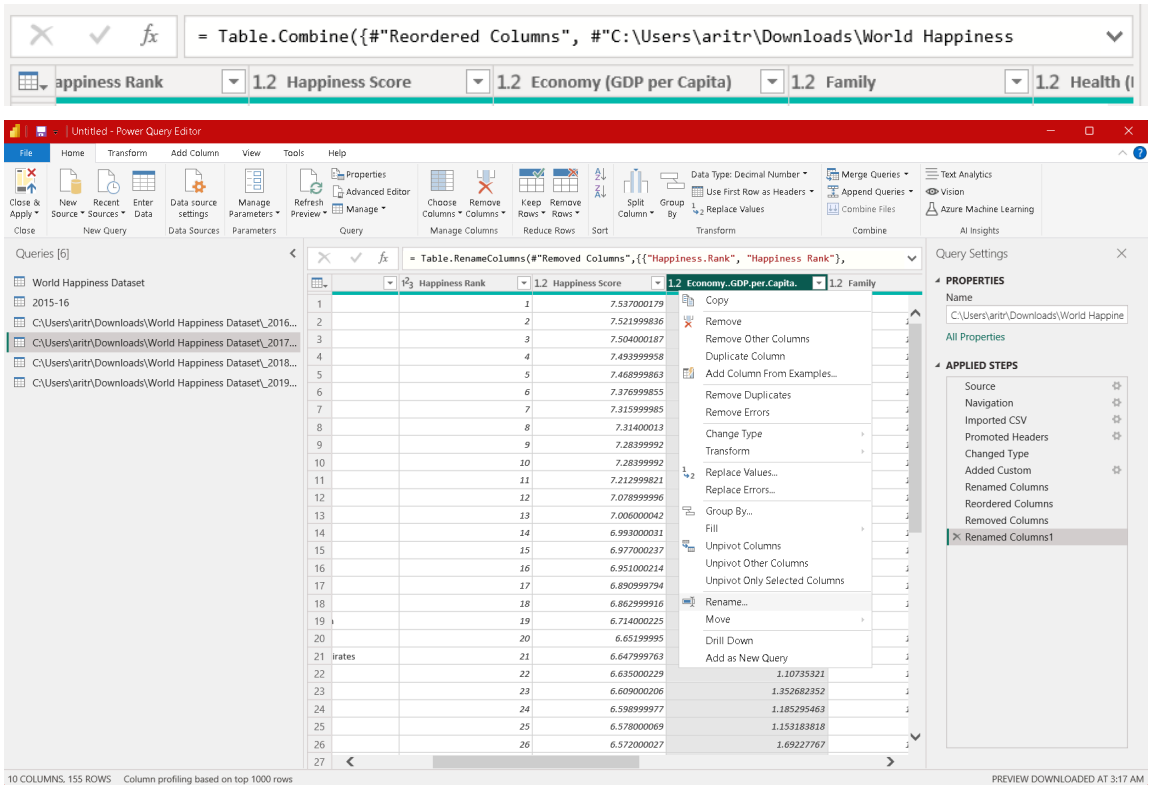
  Doing this will ensure all the datasets have an Ranking Year column to differentiate between the ranking year for the countries



- **Removed Unnecessary column from each dataset**

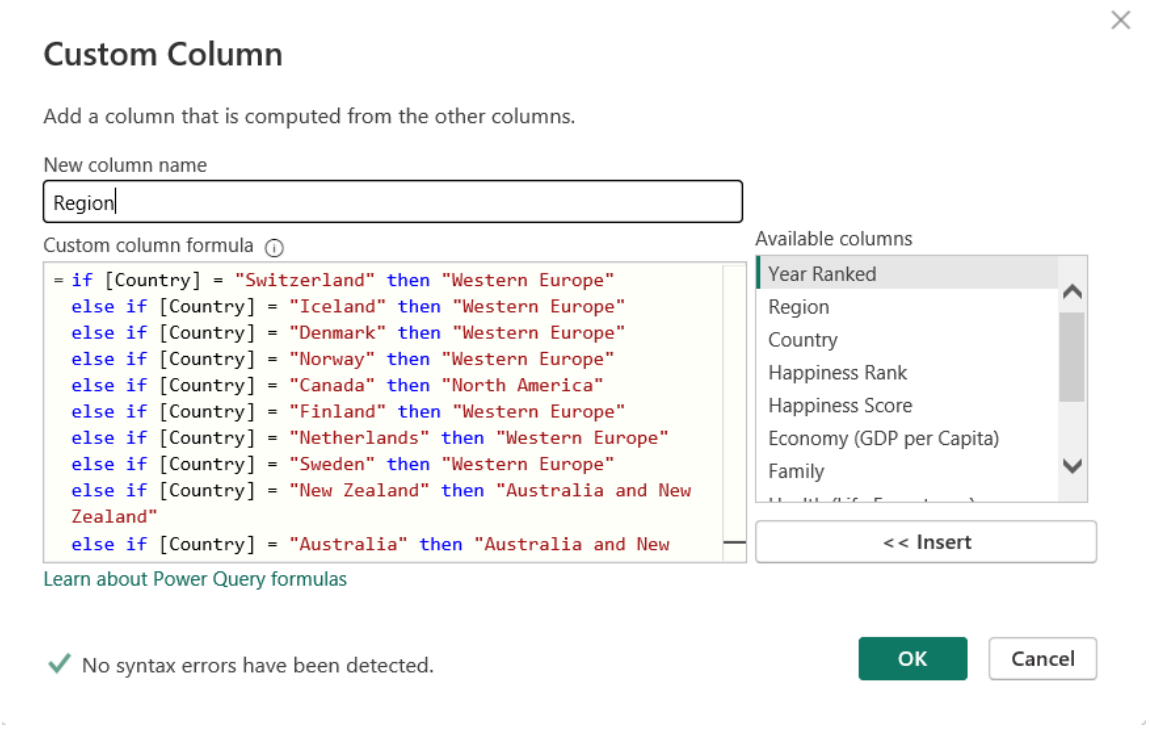


- **Renamed column names to normalize column names of all the dataset**



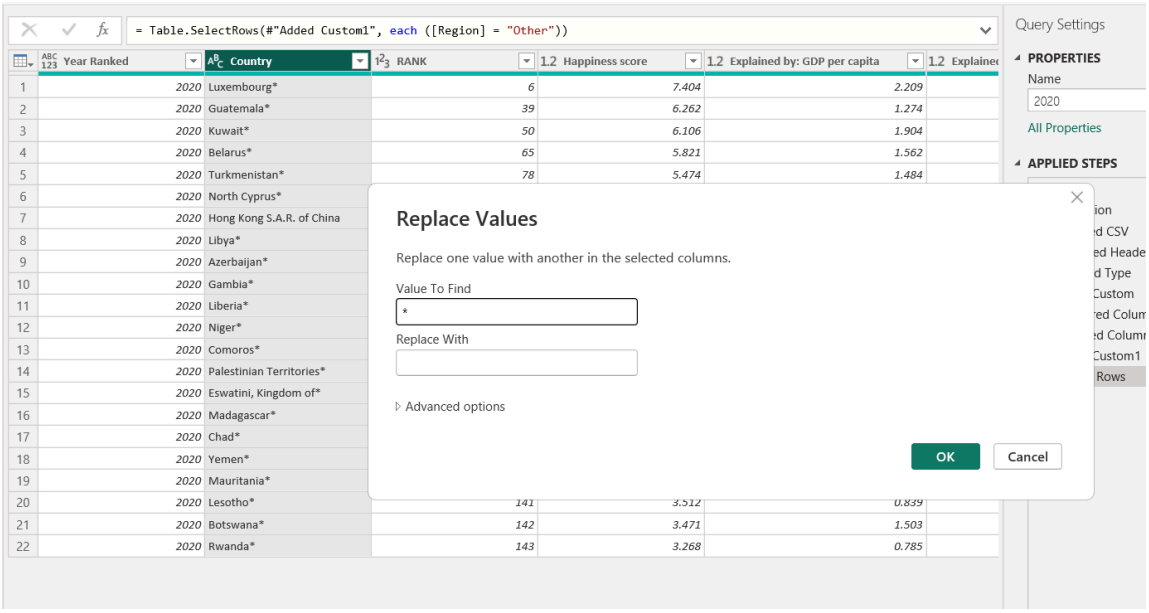
- **Added custom Region column with hardcoded values from some datasets**

Some datasets had related regions for each country while others did not. Since region could be an important feature to utilize for the dashboard, it was decided to add a custom Region column to the ones that did not have it. Based on the information from the datasets containing the region column, hardcoded custom columns were added.



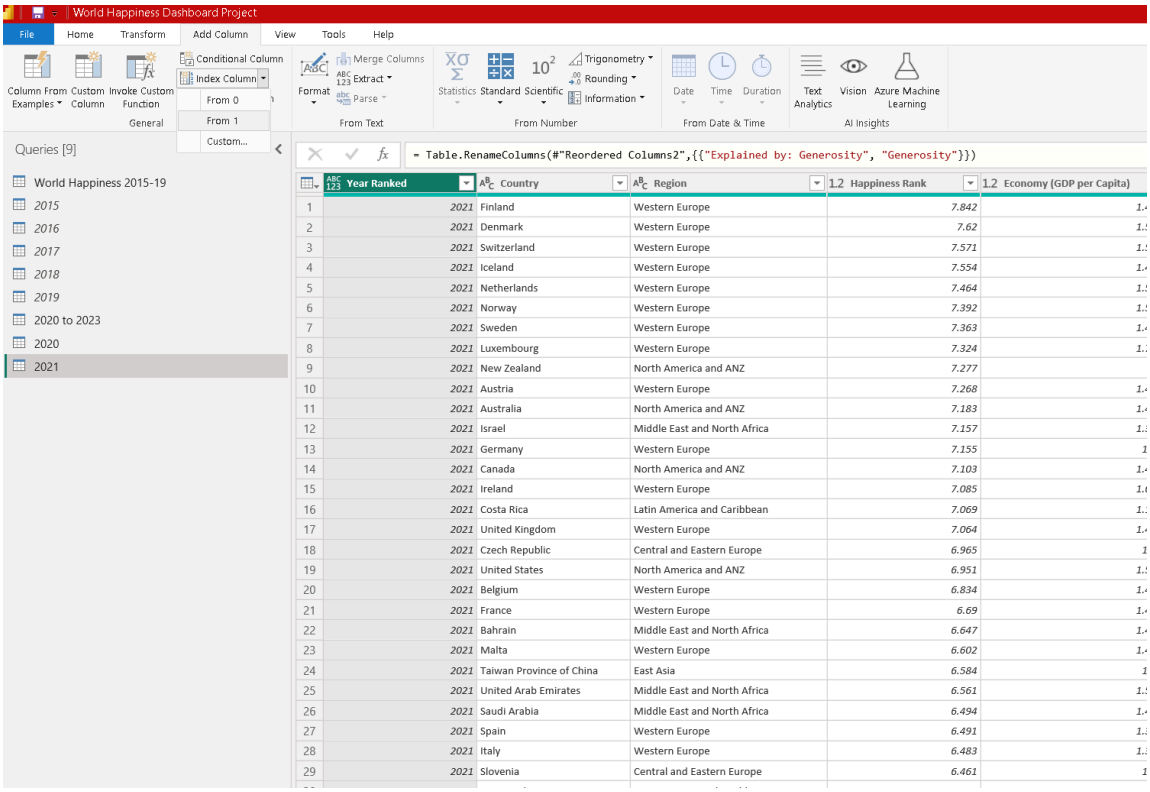
- First only data from 2015-2019 were to be used for the project but later it was decided to add subsequent happiness data from 2020 till 2023

- Remove extra Astrix from some columns



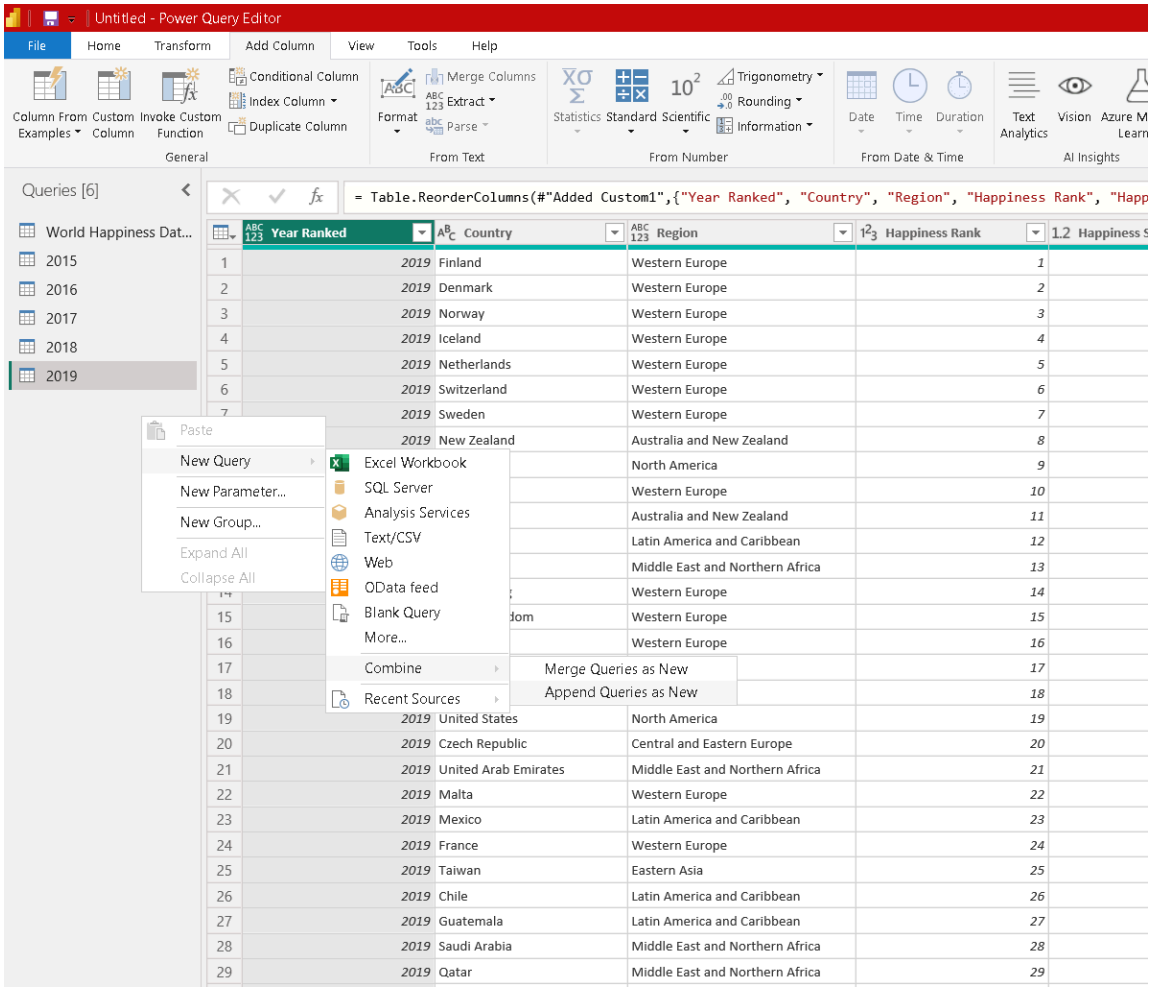
	Year Ranked	Country	RANK	Happiness score	Explained by: GDP per capita	Explaine
1	2020	Luxembourg*	6	7.404	2.209	
2	2020	Guatemala*	39	6.262	1.274	
3	2020	Kuwait*	50	6.106	1.904	
4	2020	Belarus*	65	5.821	1.562	
5	2020	Turkmenistan*	78	5.474	1.484	
6	2020	North Cyprus*				
7	2020	Hong Kong S.A.R. of China				
8	2020	Libya*				
9	2020	Azerbaijan*				
10	2020	Gambia*				
11	2020	Liberia*				
12	2020	Niger*				
13	2020	Comoros*				
14	2020	Palestinian Territories*				
15	2020	Eswatini, Kingdom of*				
16	2020	Madagascar*				
17	2020	Chad*				
18	2020	Yemen*				
19	2020	Mauritania*				
20	2020	Lesotho*	141	3.512	0.839	
21	2020	Botswana*	142	3.471	1.503	
22	2020	Rwanda*	143	3.268	0.785	

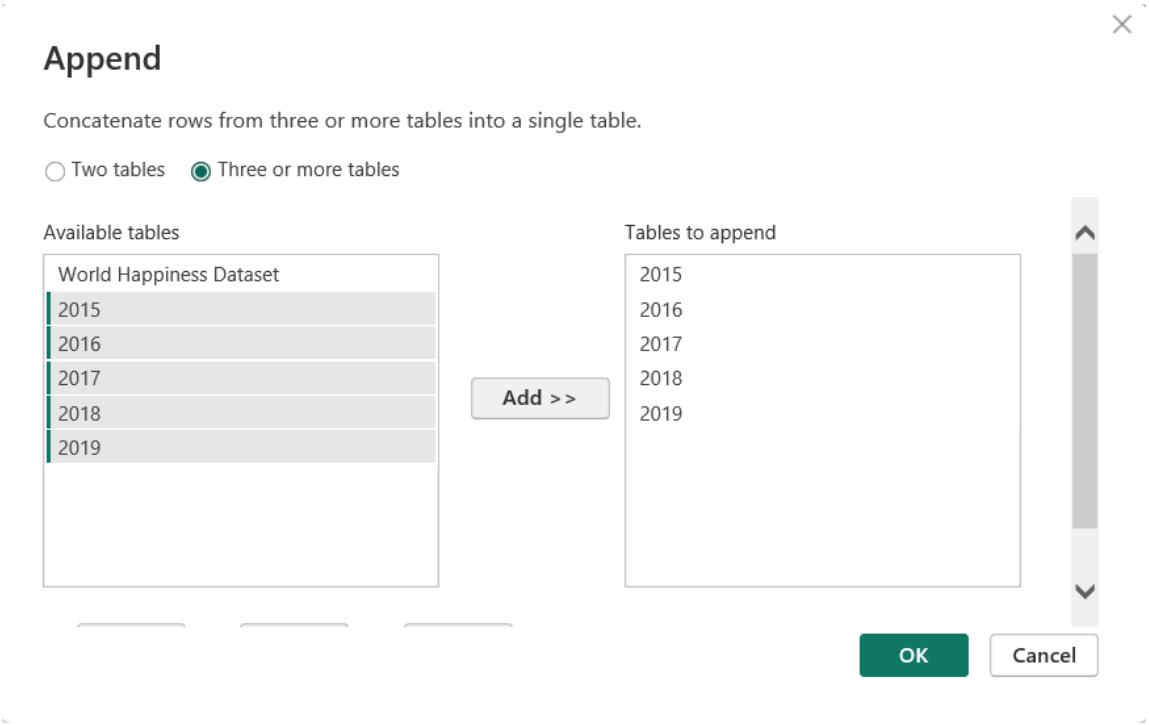
- The 2021 Dataset did not have an Ranking column, since the countries are ranked in order it was decided to add an index column starting from 1



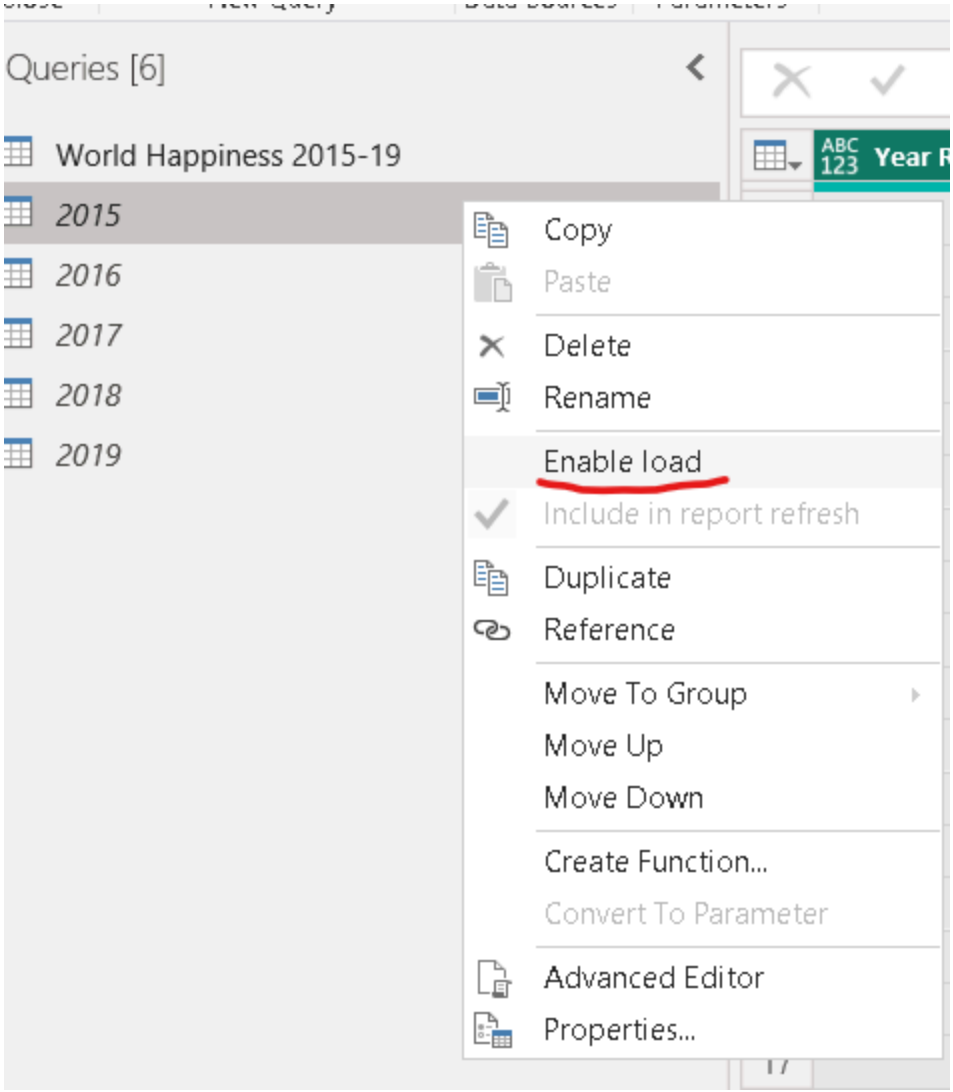
	Year Ranked	Country	Region	Happiness Rank	Economy (GDP per Capita)
1	2021	Finland	Western Europe	7.842	1.4
2	2021	Denmark	Western Europe	7.62	1.5
3	2021	Switzerland	Western Europe	7.571	1.5
4	2021	Iceland	Western Europe	7.554	1.4
5	2021	Netherlands	Western Europe	7.464	1.5
6	2021	Norway	Western Europe	7.392	1.5
7	2021	Sweden	Western Europe	7.363	1.4
8	2021	Luxembourg	Western Europe	7.324	1.5
9	2021	New Zealand	North America and ANZ	7.277	
10	2021	Austria	Western Europe	7.268	1.4
11	2021	Australia	North America and ANZ	7.183	1.4
12	2021	Israel	Middle East and North Africa	7.157	1.5
13	2021	Germany	Western Europe	7.155	1
14	2021	Canada	North America and ANZ	7.103	1.4
15	2021	Ireland	Western Europe	7.085	1.6
16	2021	Costa Rica	Latin America and Caribbean	7.069	1.5
17	2021	United Kingdom	Western Europe	7.064	1.4
18	2021	Czech Republic	Central and Eastern Europe	6.965	1
19	2021	United States	North America and ANZ	6.951	1.5
20	2021	Belgium	Western Europe	6.834	1.4
21	2021	France	Western Europe	6.69	1.4
22	2021	Bahrain	Middle East and North Africa	6.647	1.4
23	2021	Malta	Western Europe	6.602	1.4
24	2021	Taiwan Province of China	East Asia	6.584	1
25	2021	United Arab Emirates	Middle East and North Africa	6.561	1.5
26	2021	Saudi Arabia	Middle East and North Africa	6.494	1.4
27	2021	Spain	Western Europe	6.491	1.5
28	2021	Italy	Western Europe	6.483	1.5
29	2021	Slovenia	Central and Eastern Europe	6.461	1

- Combine All queries into One



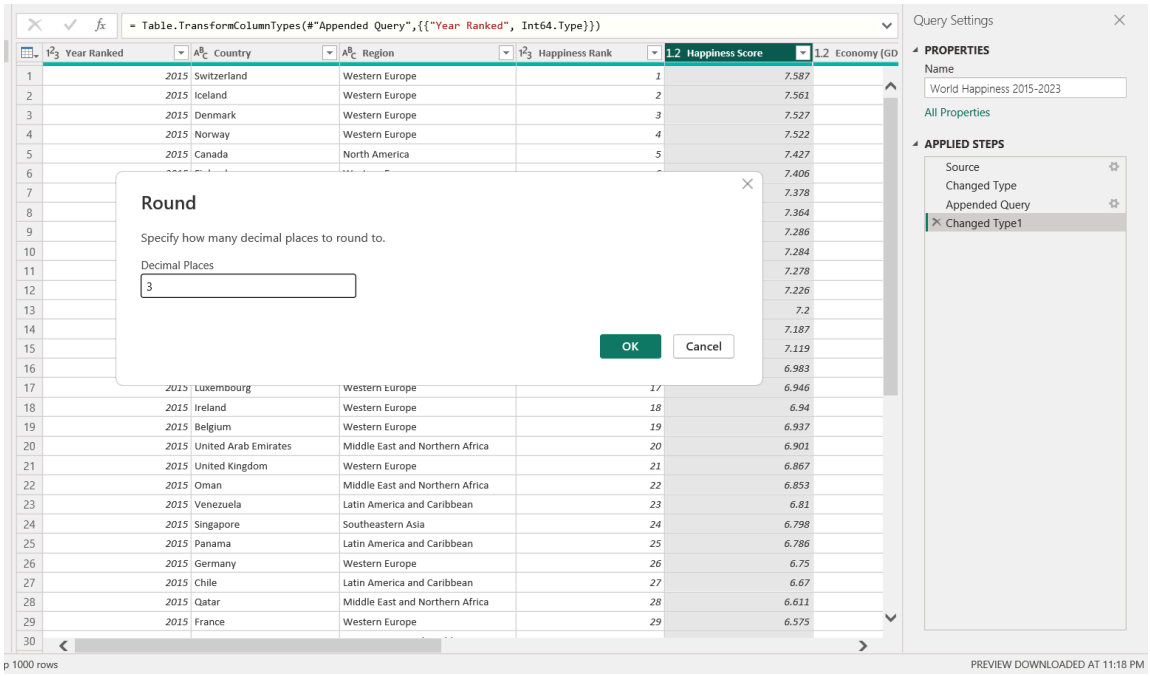


- Uncheck the “Enable Load” check for each queries except the newly Created Query to prevent other queries to load as they now have been concatenated into 1 single query.

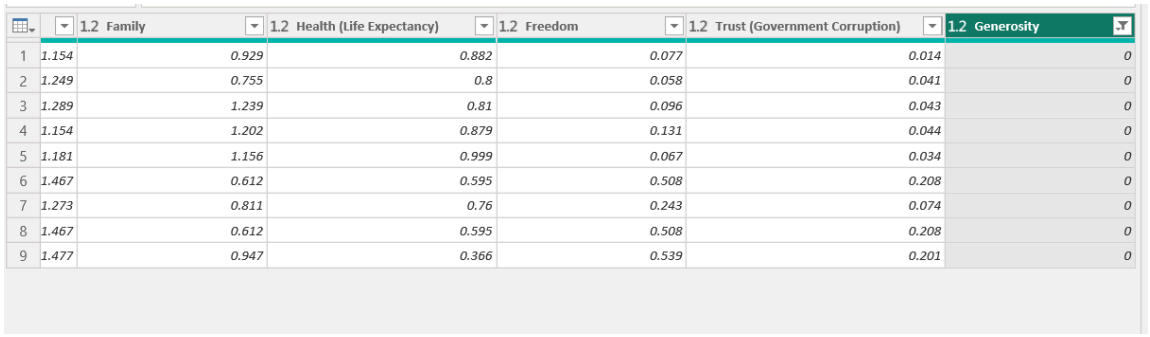


Data Transformation after combining all datasets

- It was decided to round all the decimal values to 3 decimal places only



- All the combined dataset showed no missing values, some countries had 0 as values for multiple columns, instead of dropping these columns.



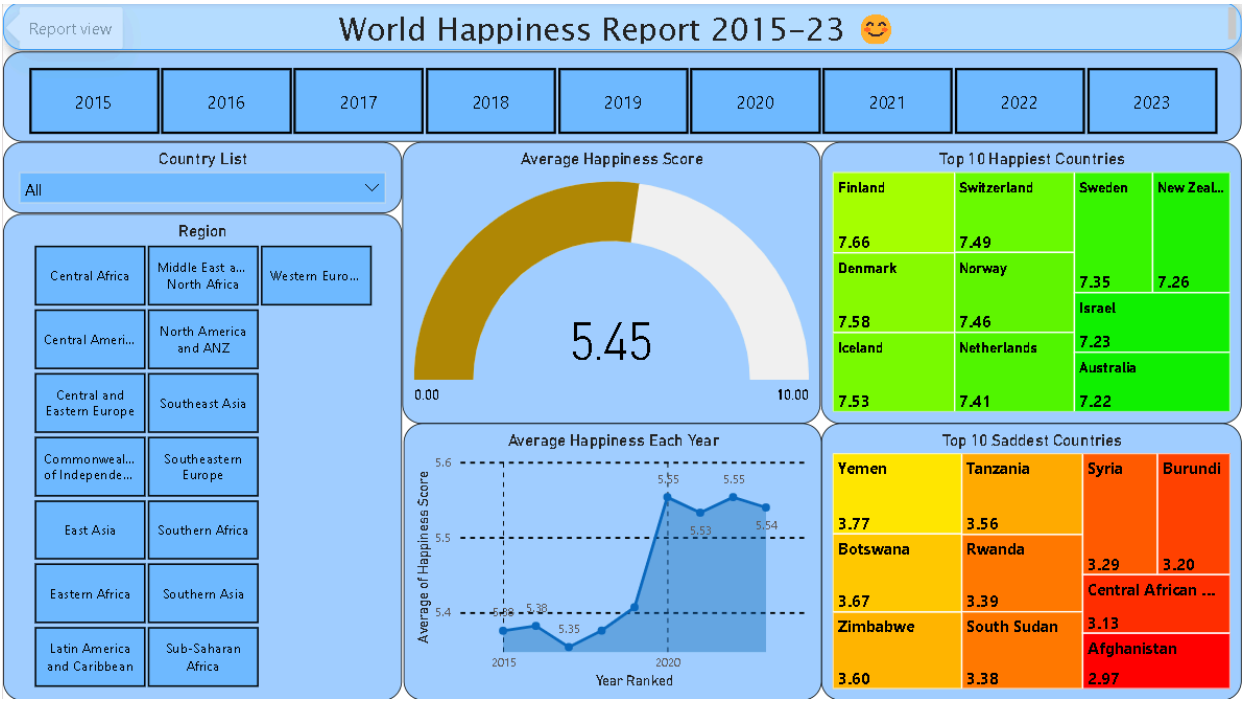
Other Transformations

During Dashboard Building, anomalies like the same but differently spelled country and region names were found. For example:

- Hong Kong was spelled as Hong Kong S.A.R. of China and Hong Kong S.A.R., of China. These values were replaced to be “Hong Kong”
- Region names like South East Asia and South Eastern Asia were the same thing but spelled differently. Such Anomalies were also fixed.

Dashboard

Page 1 View and Insights:



The first page visualizes the World Happiness Report data from 2015 to 2023. This dashboard provides a quick overview of global happiness trends, allowing users to interactively explore data across different countries, regions, and years. Here's a breakdown of its components:

1. Filtering Slicers

- The top of the report allows the user to select different years between 2015 and 2023, which updates the visuals to reflect the data for the selected year(s).
- **Country List Dropdown**: Allows the user to filter the data by specific countries.
- **Region Buttons**: Allows the user to filter the data by geographic regions such as Western Europe, Southeast Asia, etc.

2. Average Happiness Score

- Displays the average happiness score across all countries for the selected year or years. The gauge ranges from 0 to 10, with the current average score displayed prominently in the center.

3. Average Happiness Each Year

- Shows how the average happiness score has changed over the years. The line chart visualizes the trend, highlighting any increases or decreases in happiness scores from 2015 to 2023.

4. Top 10 Happiest Countries

- This treemap lists the top 10 happiest countries based on their happiness scores. Each country is color-coded (with shades of green) and sized according to its happiness score.

5. Top 10 Saddest Countries

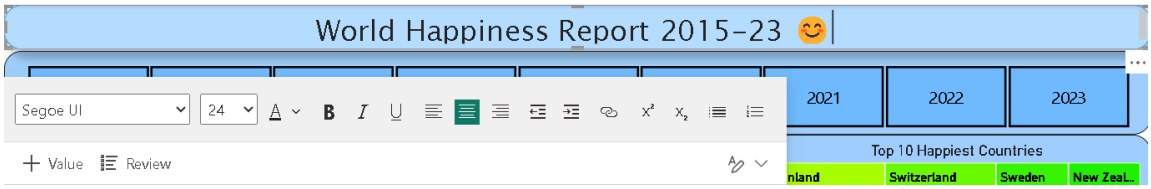
- Similar to the happiest countries, this treemap lists the top 10 saddest countries. These are color-coded in shades of orange and red, indicating lower happiness scores.

6. Icons and Styling

- The report uses a light blue background with emoji-like icons for a visually engaging and user-friendly design. The use of colors (green for happy, orange/red for sad) helps to quickly convey the relative happiness levels of different countries.

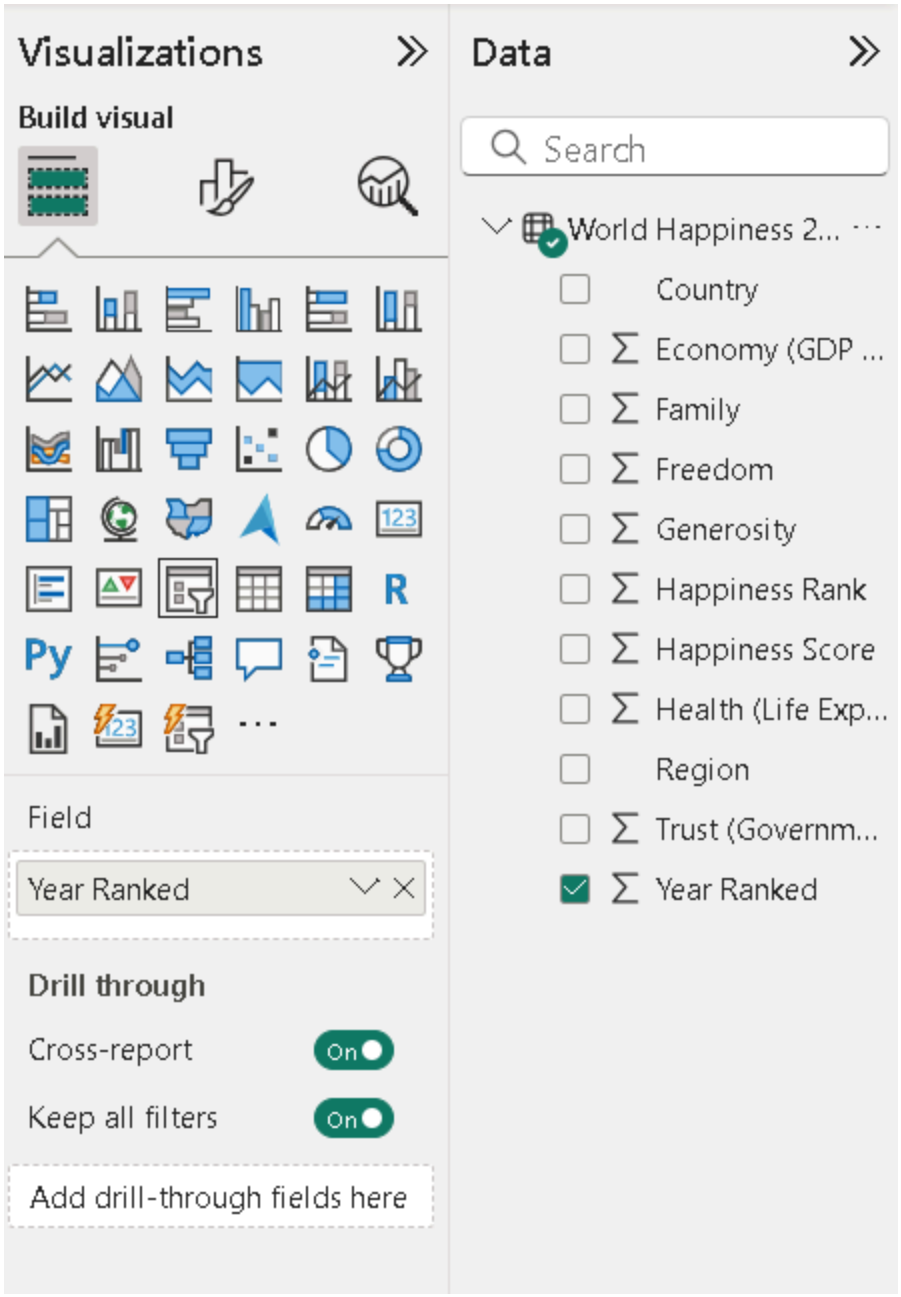
Page 1 report building details

- **Title for the Dashboard**

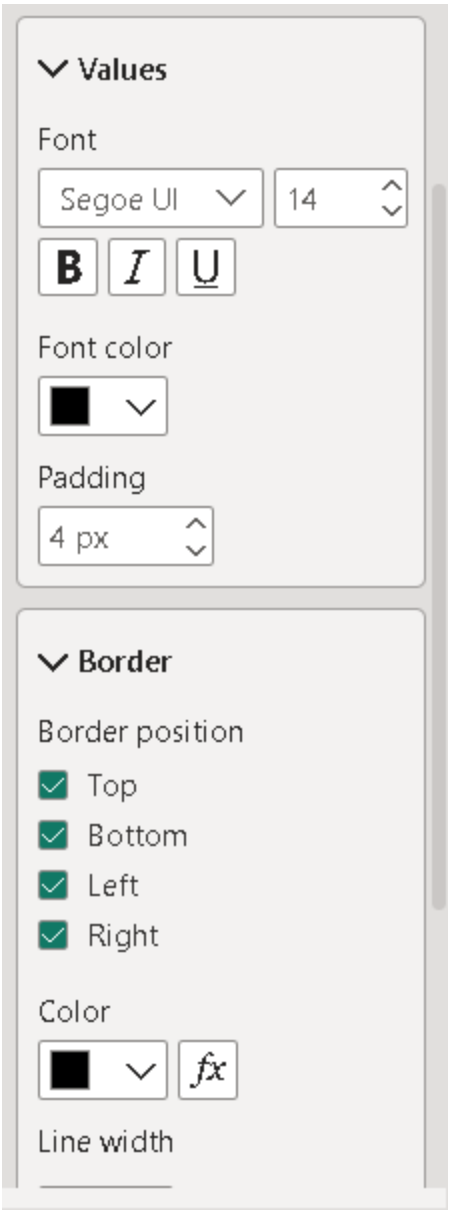


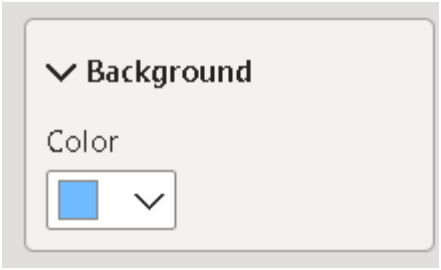
Slicers

Year Slicer

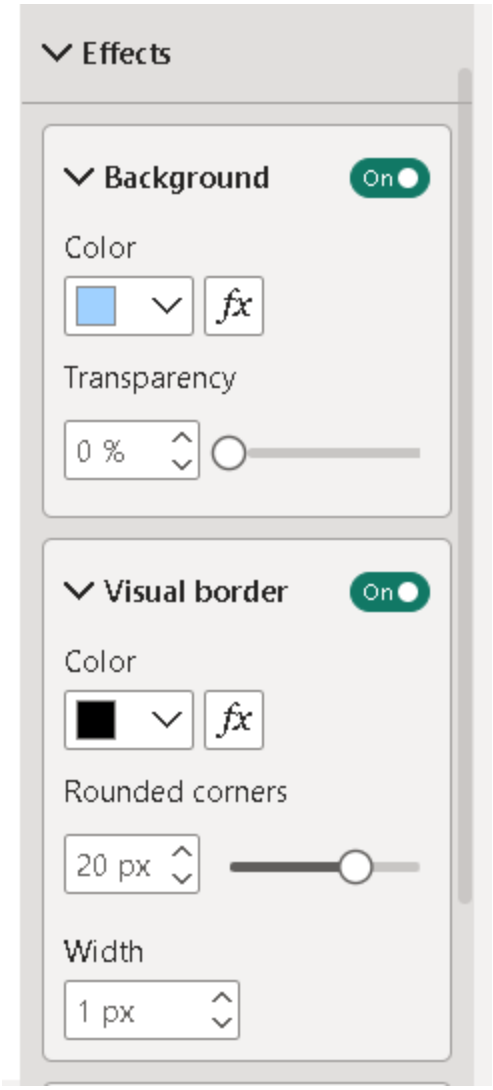


- **Custom values, border and background color**

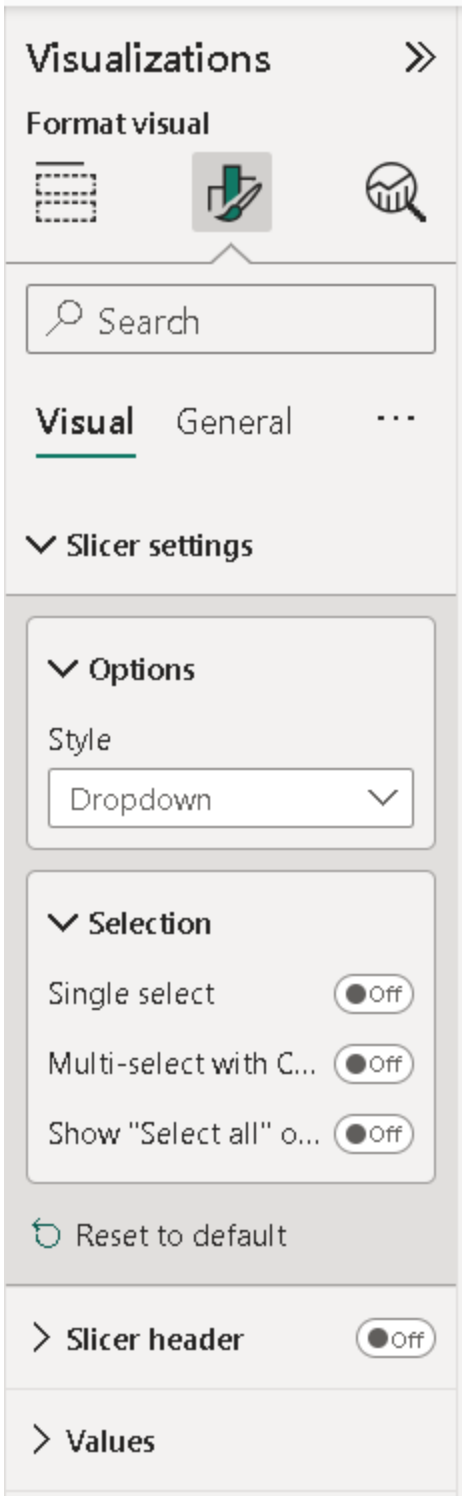




- **Custom Background**



Country Slicer


Visualizations
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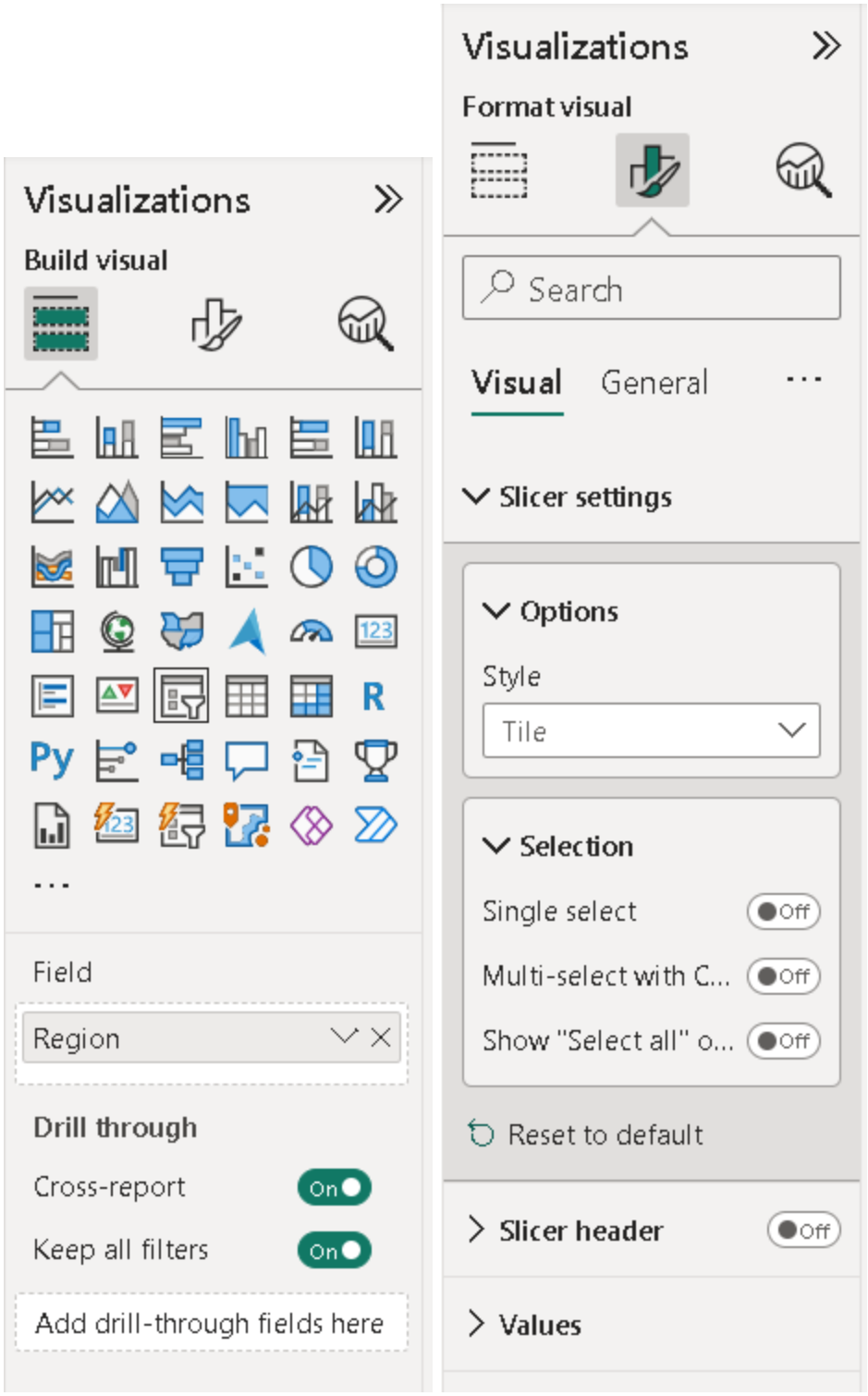
Values

Similar color and border effects were applied to main an uniform dashboard

Region Dashboard


Visualizations
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Visualizations
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Slicer header
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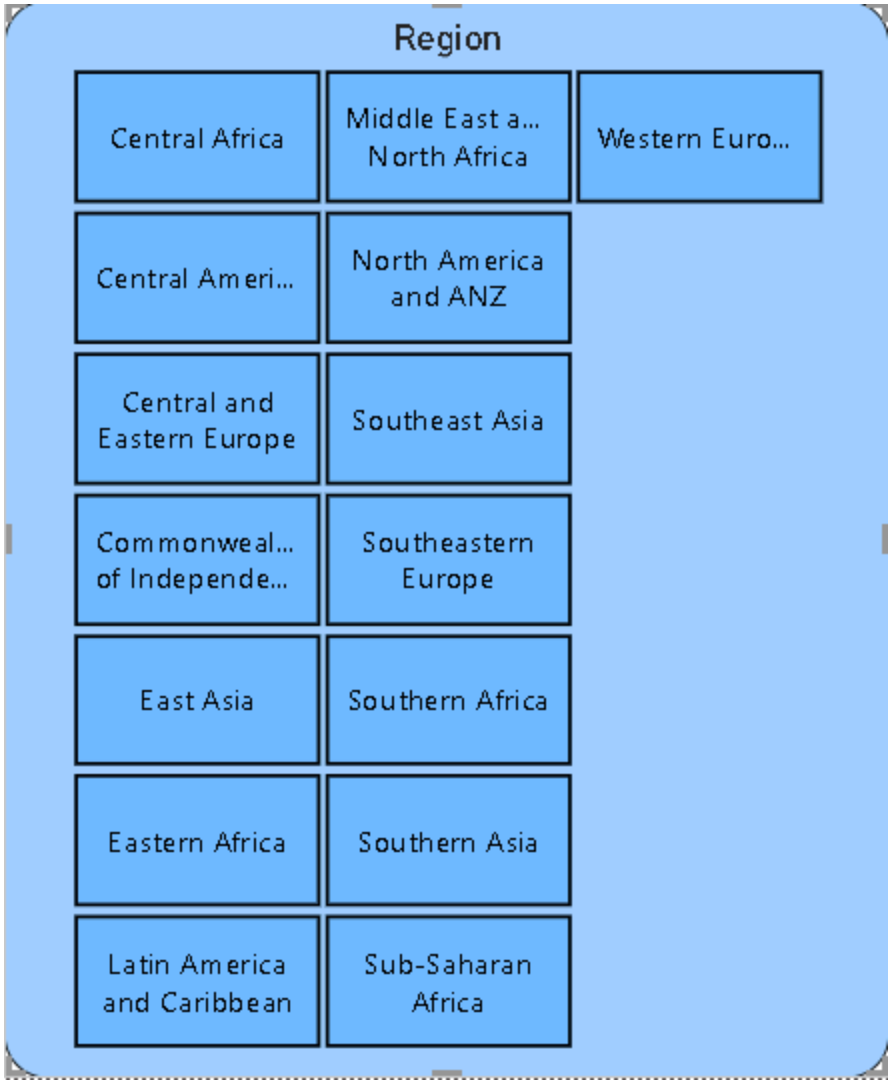
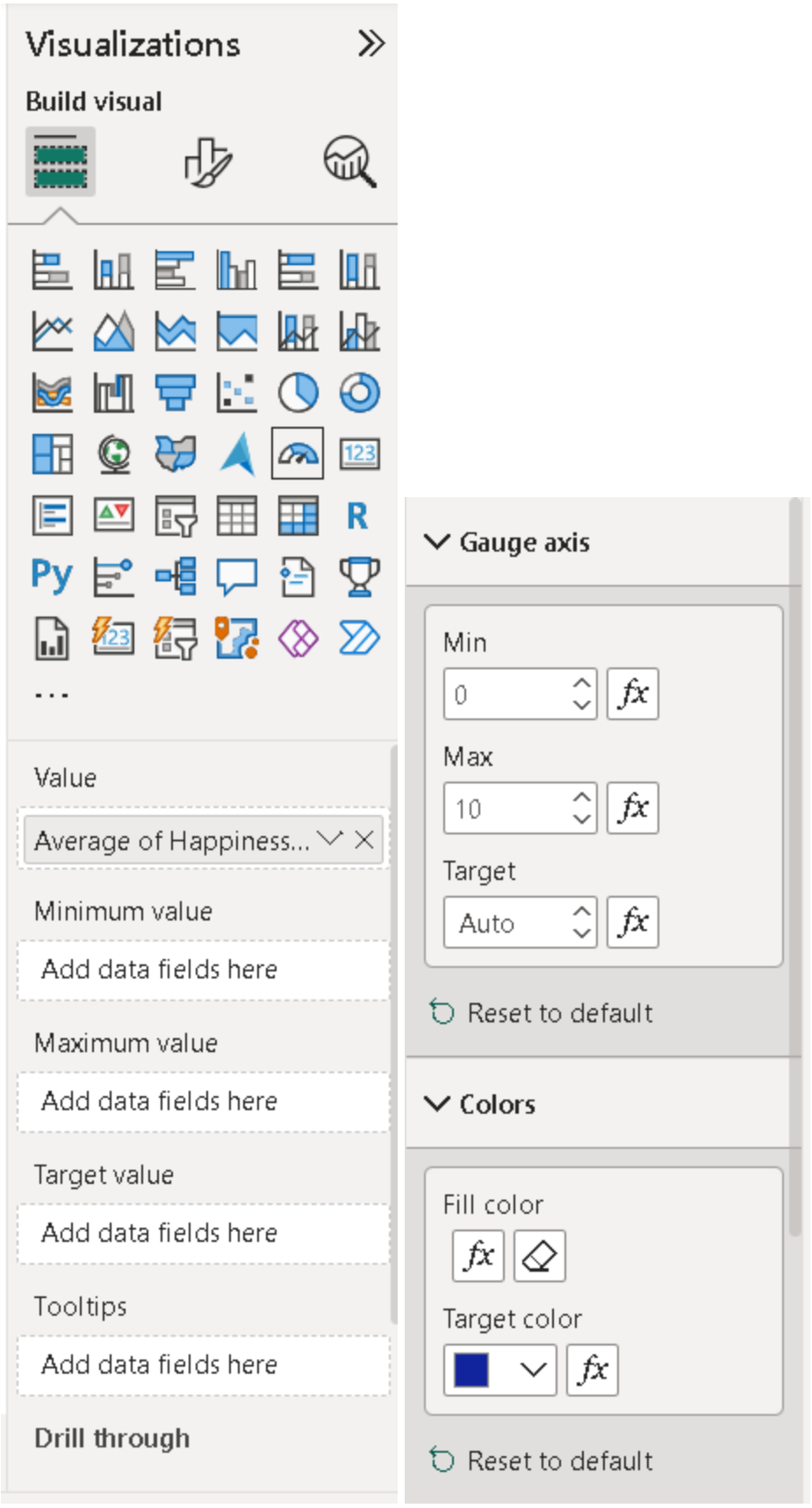


Charts and Graphs

Average Happiness Score Gauge


Visualizations
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Minimum value
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Maximum value
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Target value
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Tooltips
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Gauge axis
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Target
Auto
fx
Reset to default
Colors
Fill color
fx
Target color
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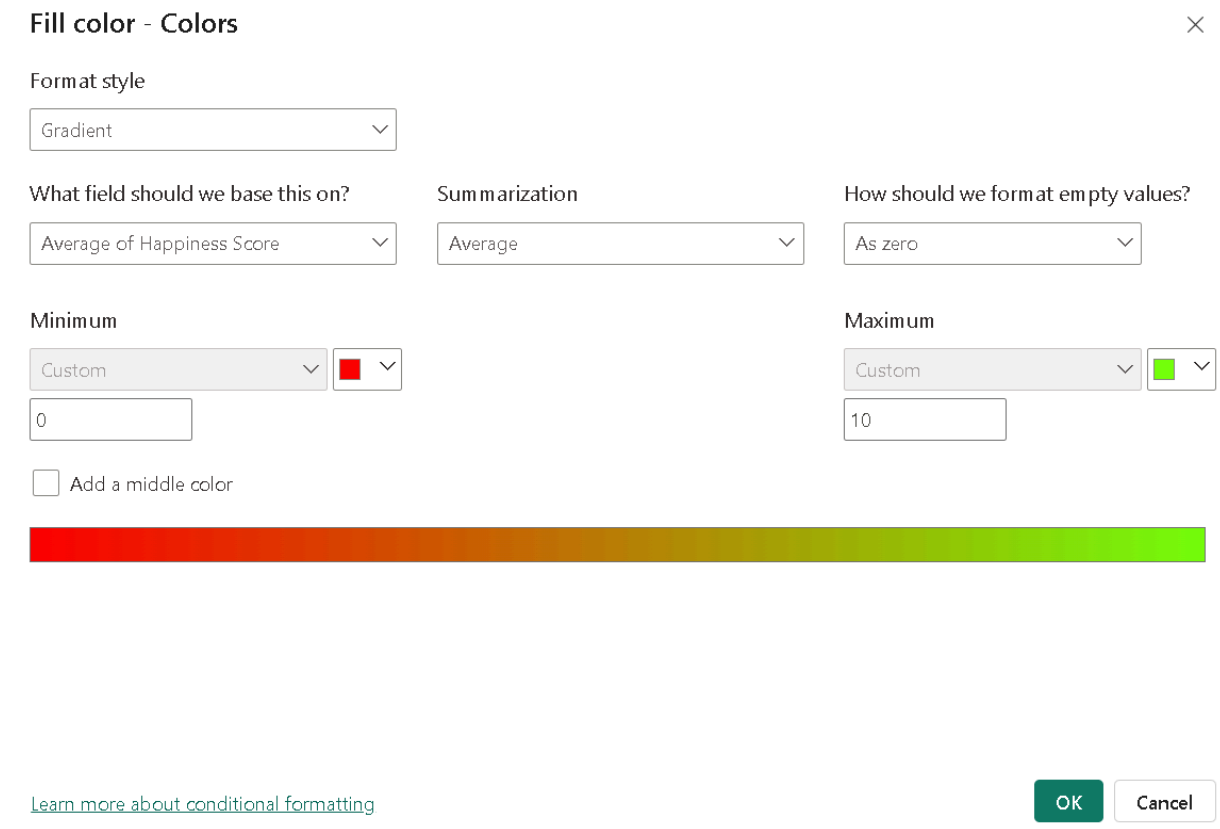
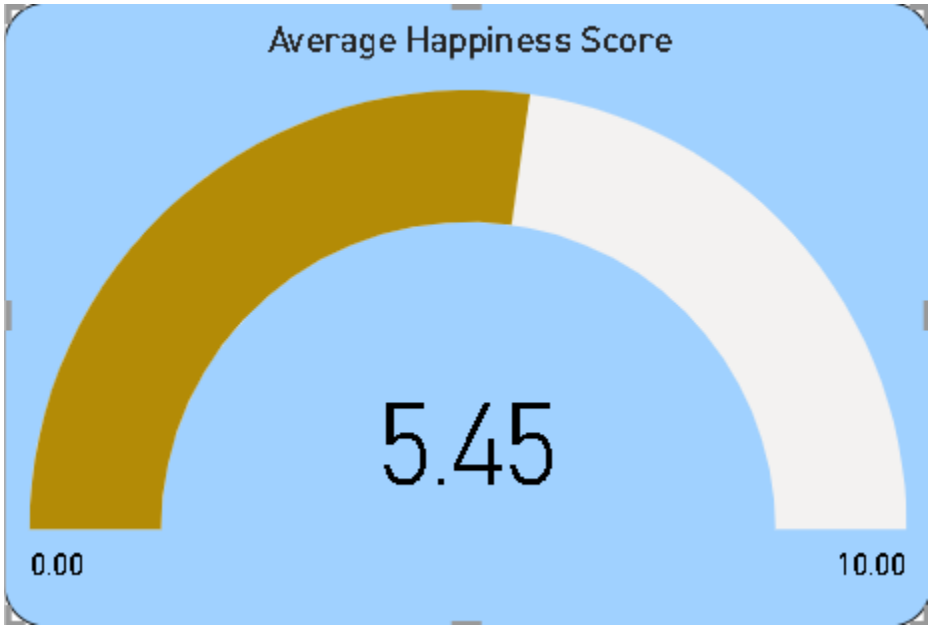
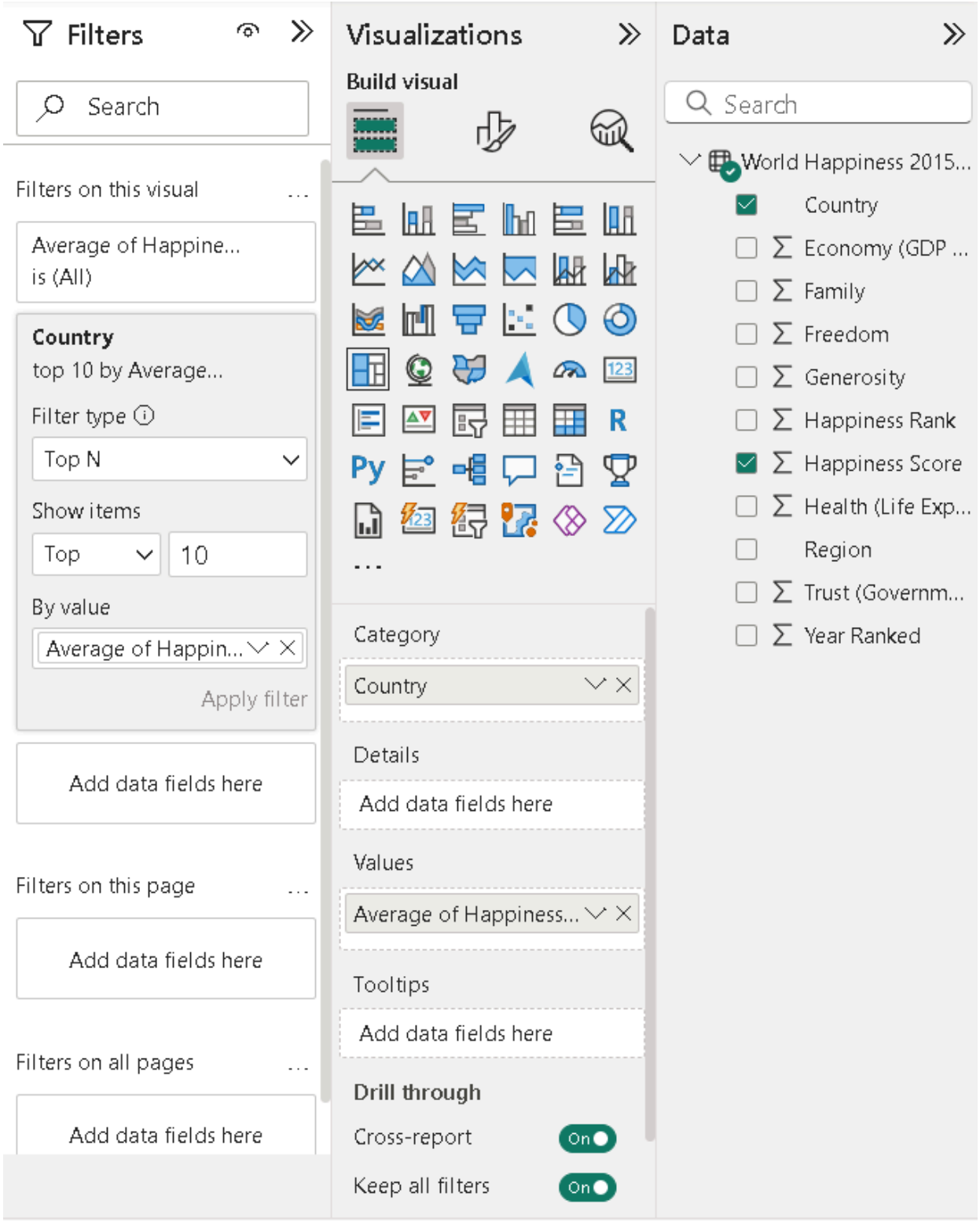




Top 10 Happiest Countries Treemap



- **Conditional Formatting**

Default color - Colors

Format style

Gradient

What field should we base this on?

Average of Happiness Score

Summarization

Average

How should we format empty values?

As zero

Minimum

Lowest value

Enter a value

Maximum

Highest value

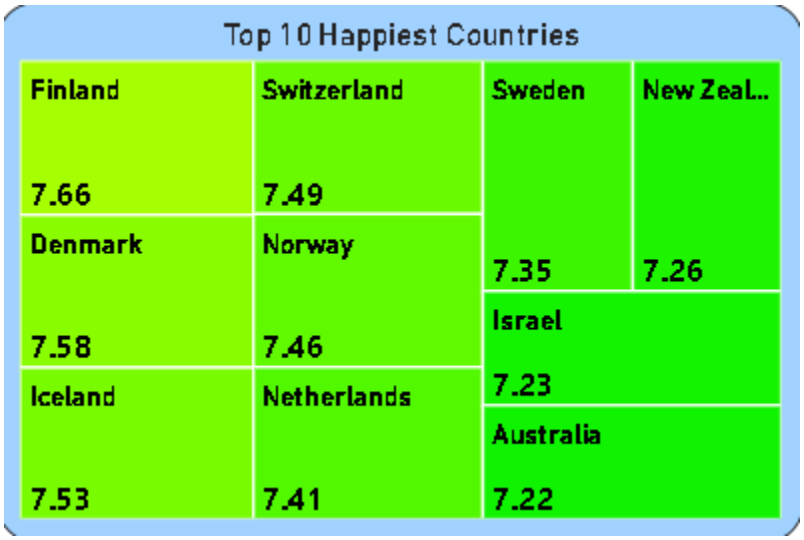
Enter a value

Add a middle color

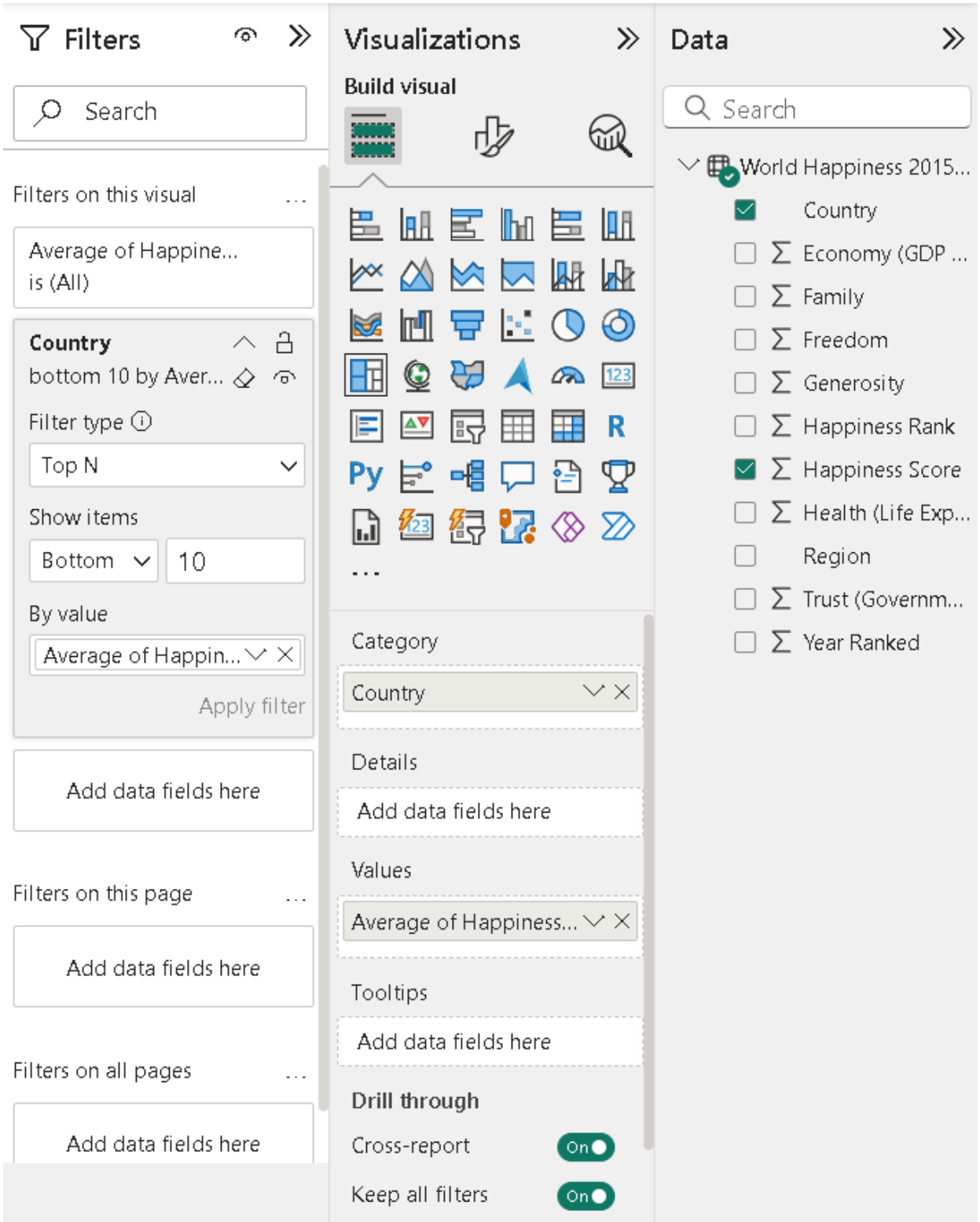
Learn more about conditional formatting

OK

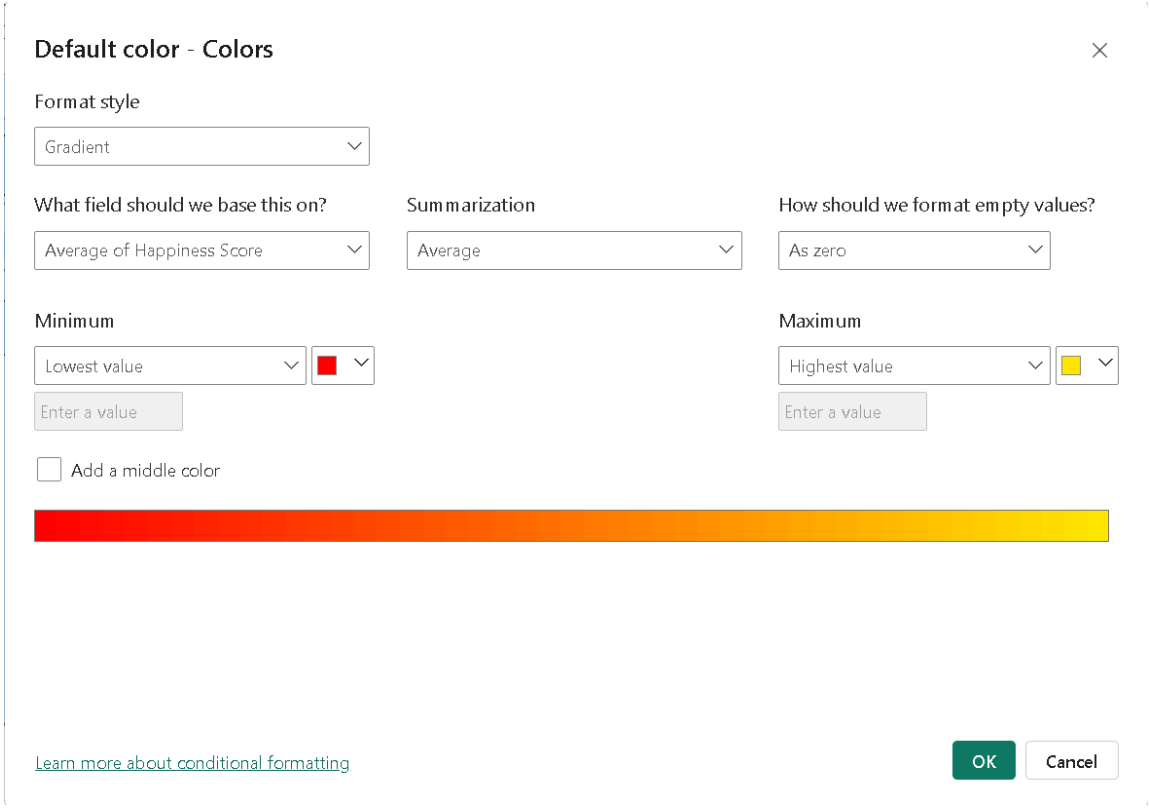
Cancel

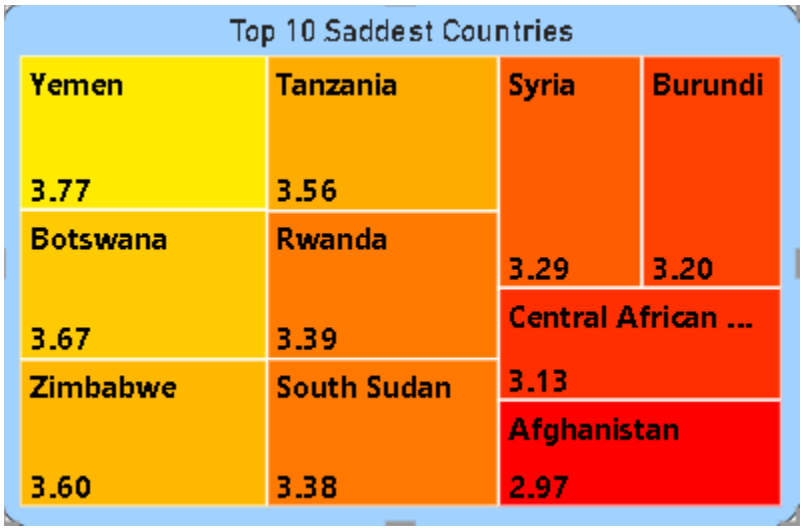


Top 10 Saddest Countries Tree Map

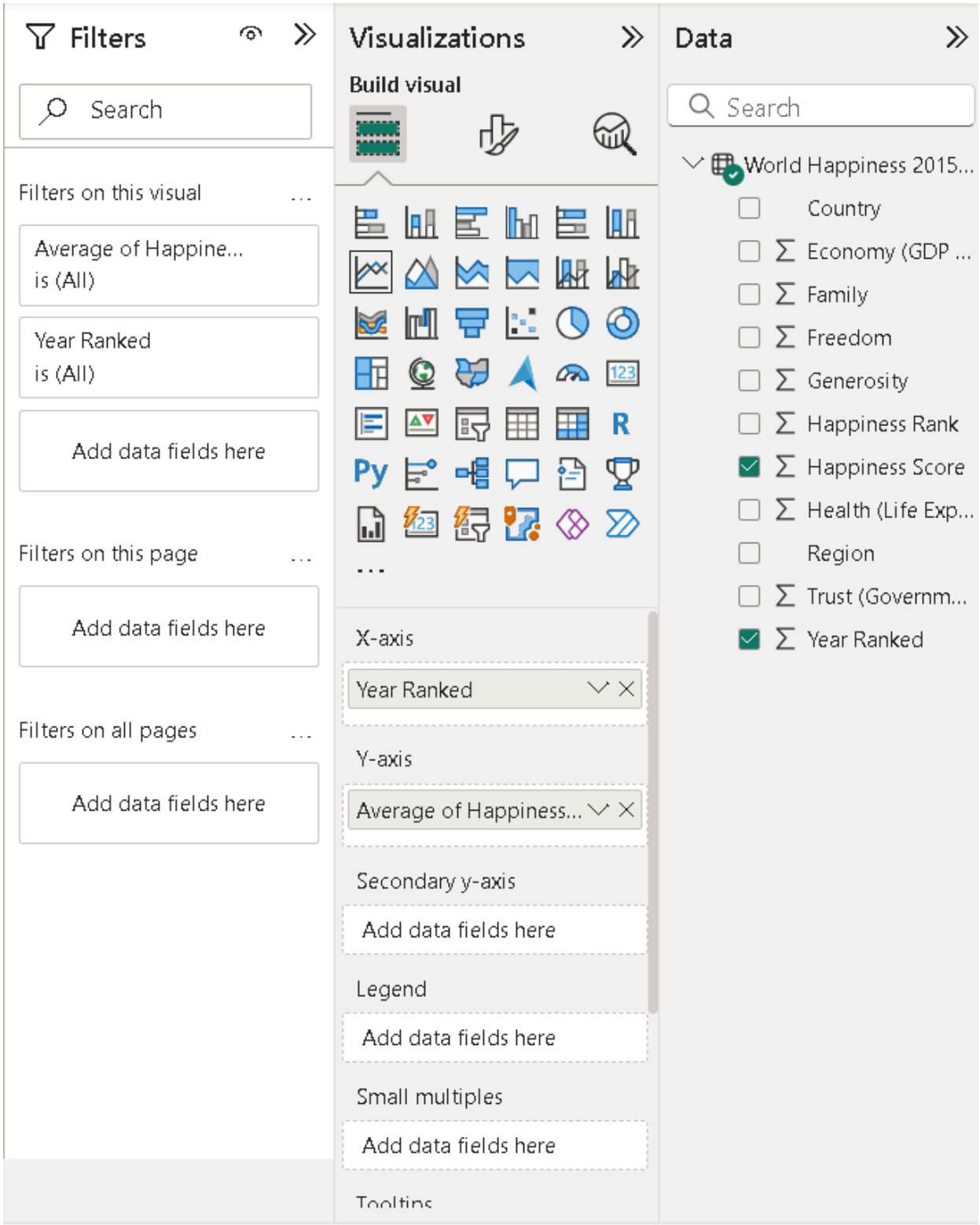


- **Conditional Formatting**

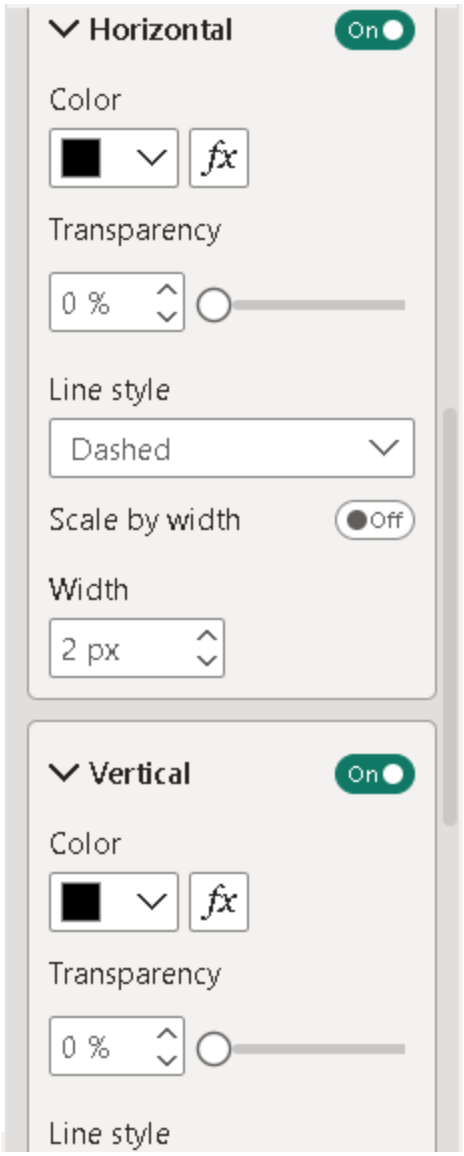




Line Chart to see average happiness score for each year



- **Gridline Settings**


Horizontal
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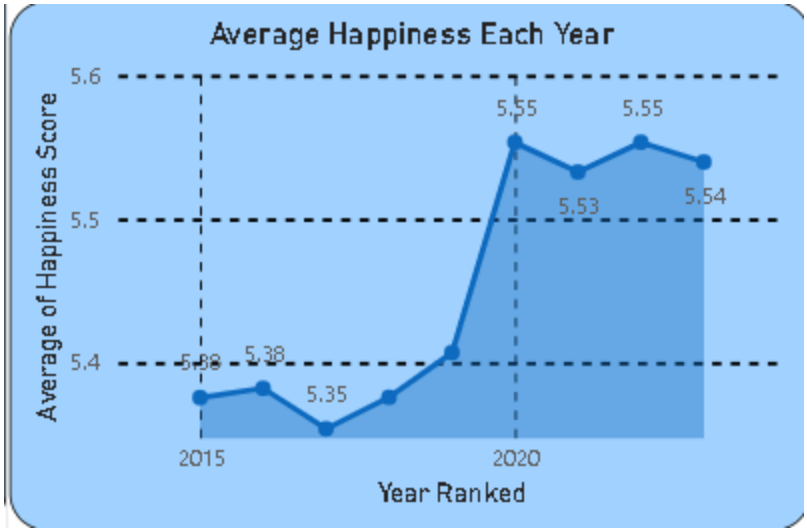
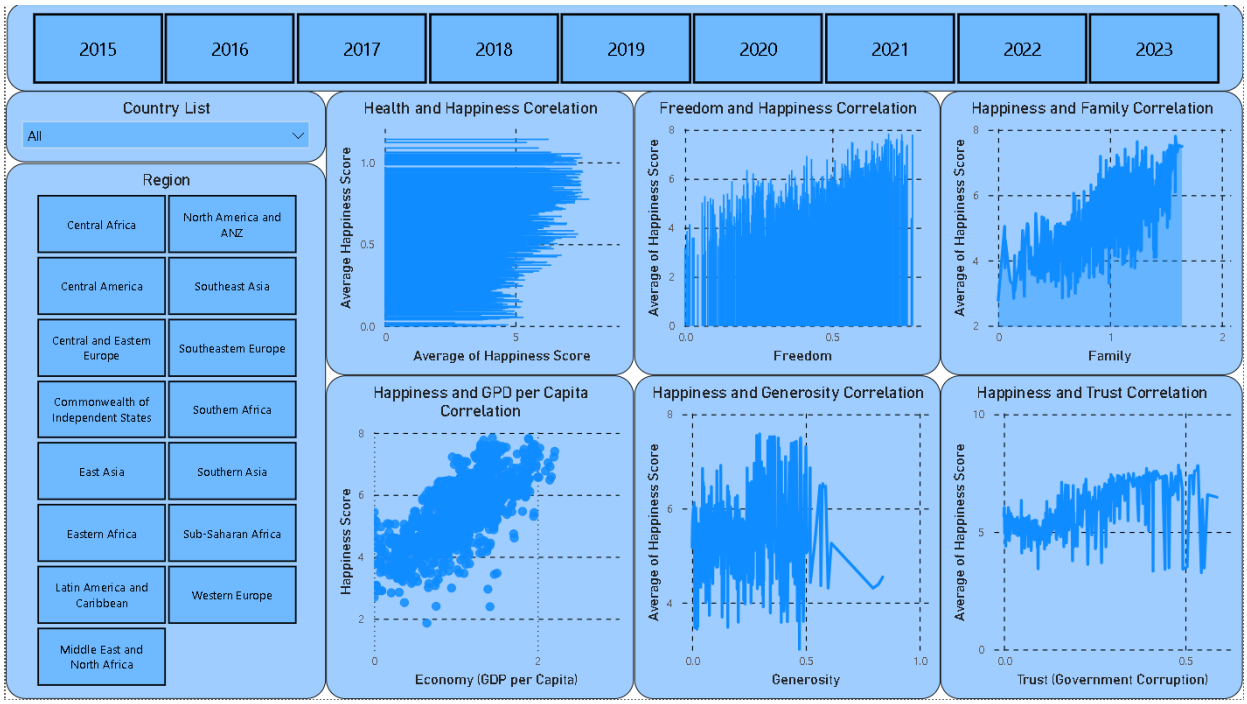


Page 2 View and Insights:



The second page of the Power BI report continues to explore the World Happiness Report data, focusing on the correlations between happiness and various factors. This page is designed to help users understand the various factors that may influence happiness across different countries and regions. By visualizing the correlations, it provides insights into which aspects (health, freedom, family, economy, generosity, trust) are most closely associated with happiness in different parts of the world.

1. Filtering Slicers

- **Time:** Similar to the first page, users can select different years from 2015 to 2023 to see how the correlations between happiness and different factors have changed over time.
- **Country List Dropdown**: Allows filtering by specific countries.
- **Region Buttons**: Allows filtering by geographic regions, such as North America and ANZ, Southeast Asia, etc.

2. Health and Happiness Correlation

- This scatter plot shows the correlation between health and happiness. The x-axis represents the health index, while the y-axis represents the average happiness score. A trend can be observed to see how health impacts happiness across different countries.

4. Freedom and Happiness Correlation (Top Middle-Right Chart)

- This scatter plot explores the relationship between the sense of freedom and happiness. The x-axis represents freedom, and the y-axis represents happiness scores. It helps to understand whether countries with higher perceived freedom tend to have happier populations.

5. Happiness and Family Correlation (Top Right Chart)

- This scatter plot examines the relationship between family support and happiness. The x-axis measures the family support index, while the y-axis shows the average happiness score. The graph illustrates how family support might influence happiness in different regions.

6. Happiness and GDP per Capita Correlation (Bottom Left Chart)

- This scatter plot shows the correlation between a country's GDP per capita (representing economic well-being) and happiness. The x-axis represents GDP per capita, and the y-axis represents happiness scores. This visual helps to understand the impact of economic wealth on happiness.

7. Happiness and Generosity Correlation (Bottom Middle Chart)

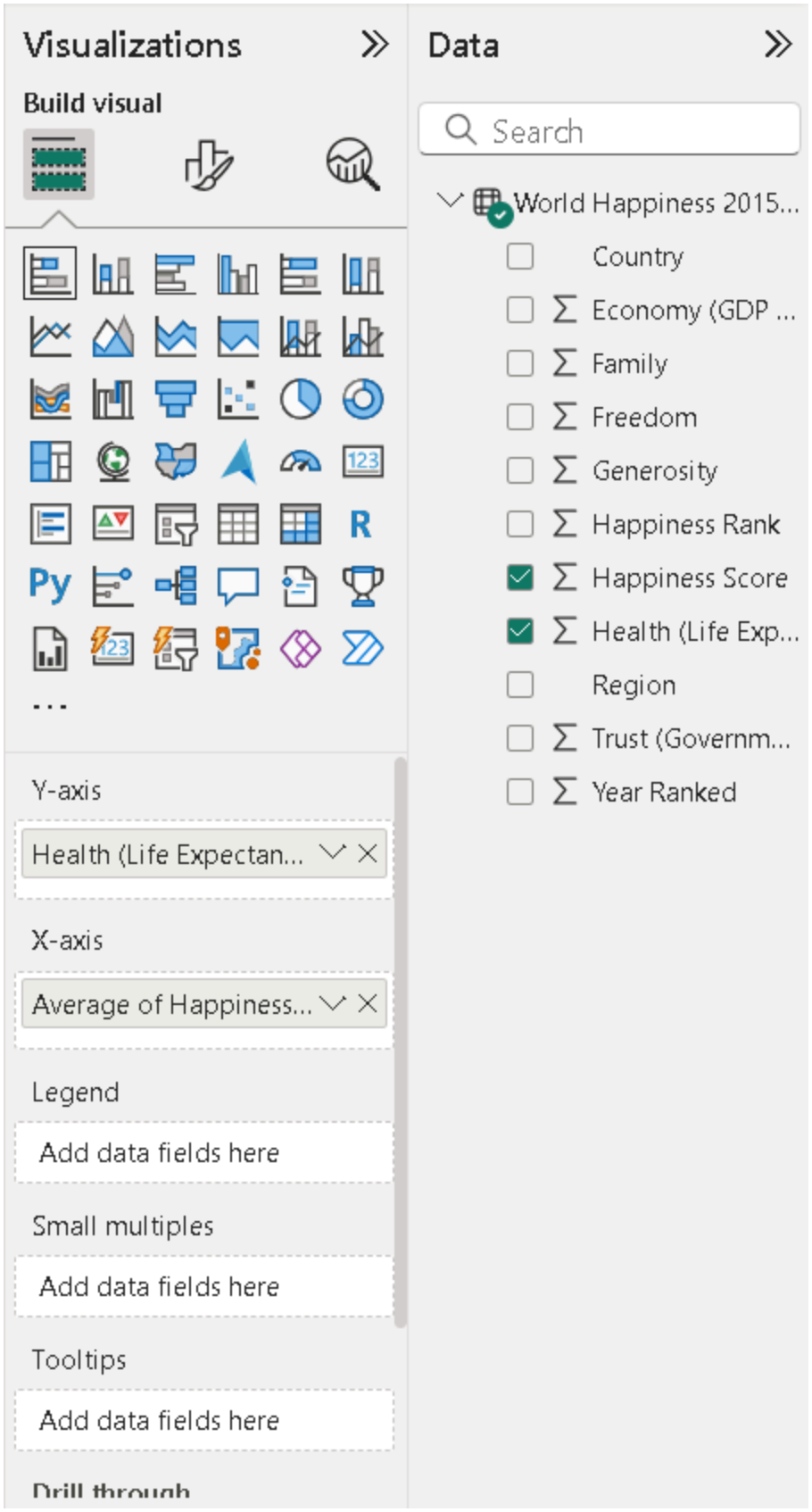
- This scatter plot explores the relationship between generosity (measured by how much people give) and happiness. The x-axis represents the generosity index, and the y-axis represents happiness scores. The graph shows whether more generous societies are also happier.

8. Happiness and Trust Correlation (Bottom Right Chart)

- This scatter plot analyzes the correlation between trust in government (or perception of corruption) and happiness. The x-axis represents the trust index (or corruption index), and the y-axis shows happiness scores. This visual examines how trust or corruption influences happiness levels.

Page 2 report building details

Health and Happiness Stacked Bar Chart


Visualizations
Build visual
Y-axis
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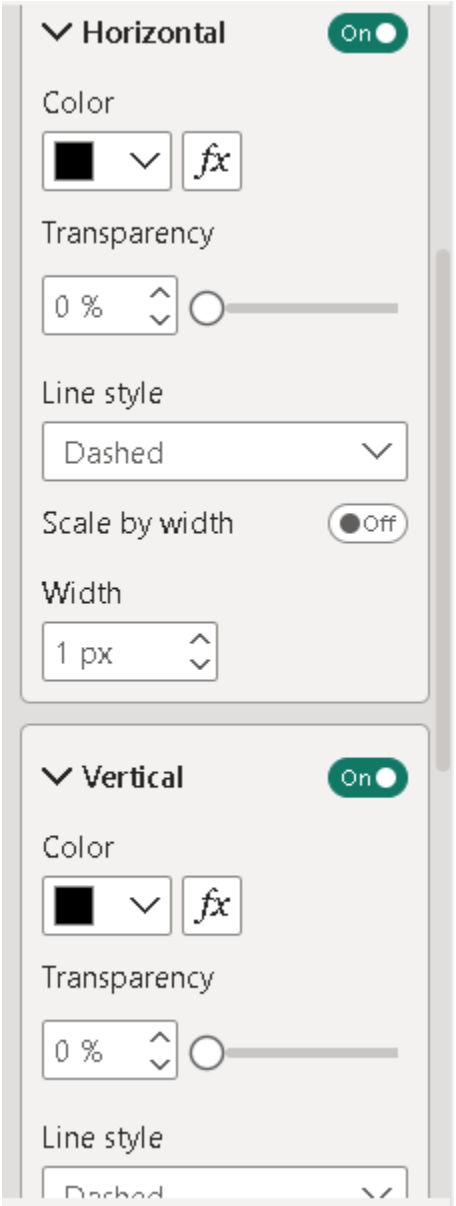
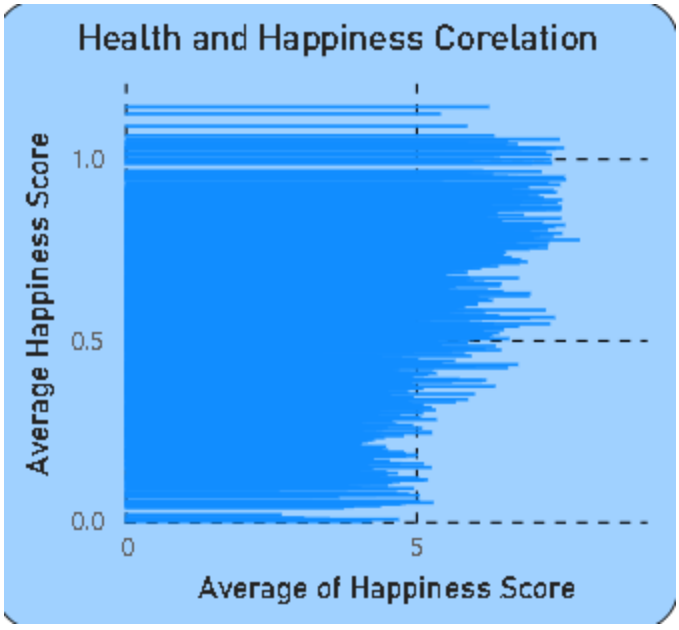
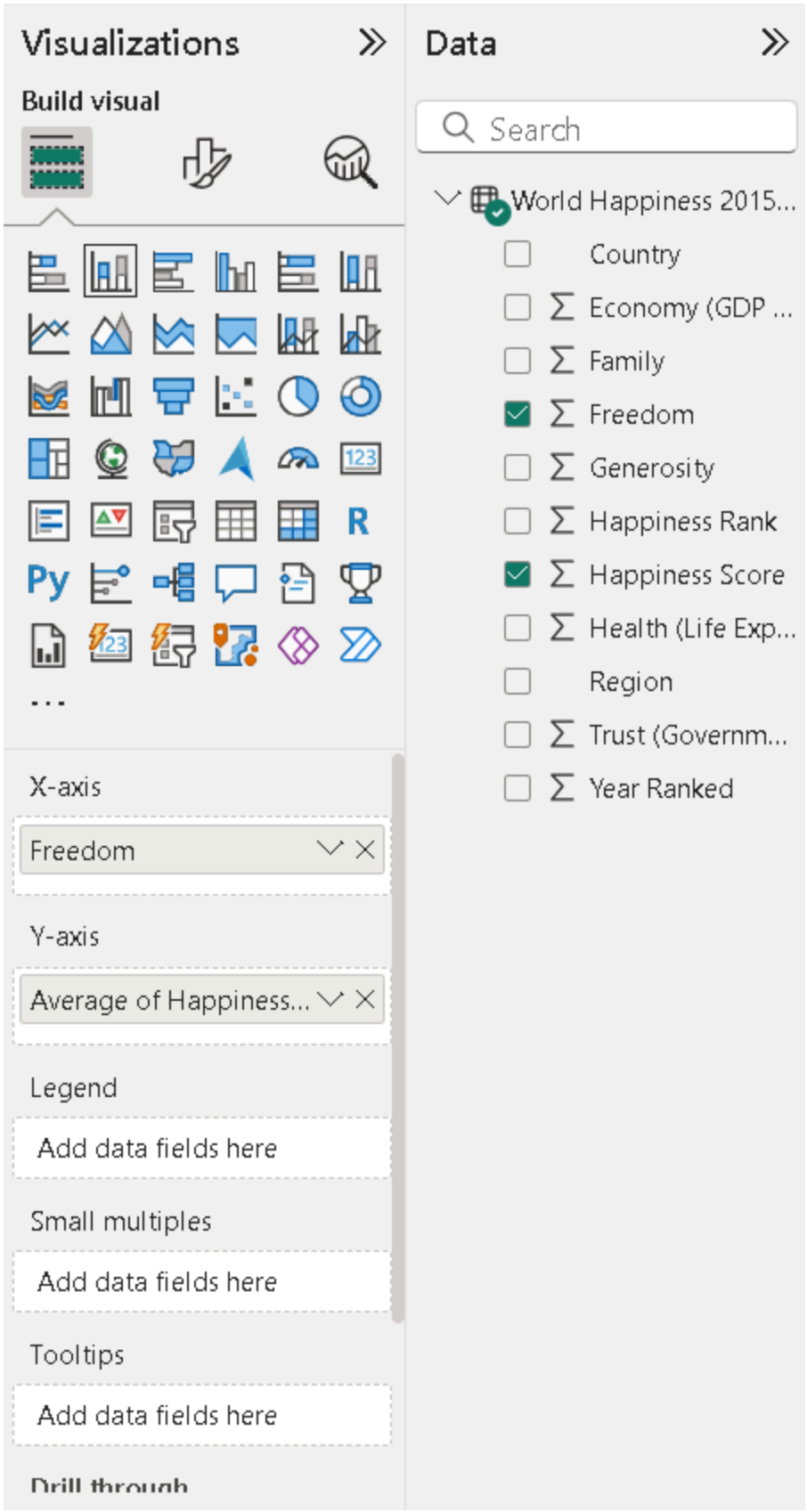
X-axis
Average of Happiness...
Legend
Add data fields here
Small multiples
Add data fields here
Tooltips
Add data fields here
Drill through
Data
Search
World Happiness 2015...
Country
Economy (GDP ...
Family
Freedom
Generosity
Happiness Rank
Happiness Score
Health (Life Exp...
Region
Trust (Governm...
Year Ranked

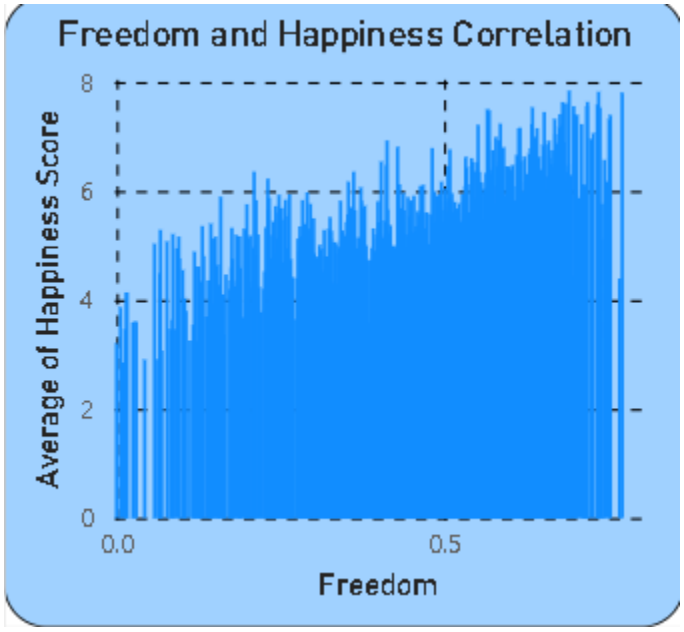
- **Gridline settings**



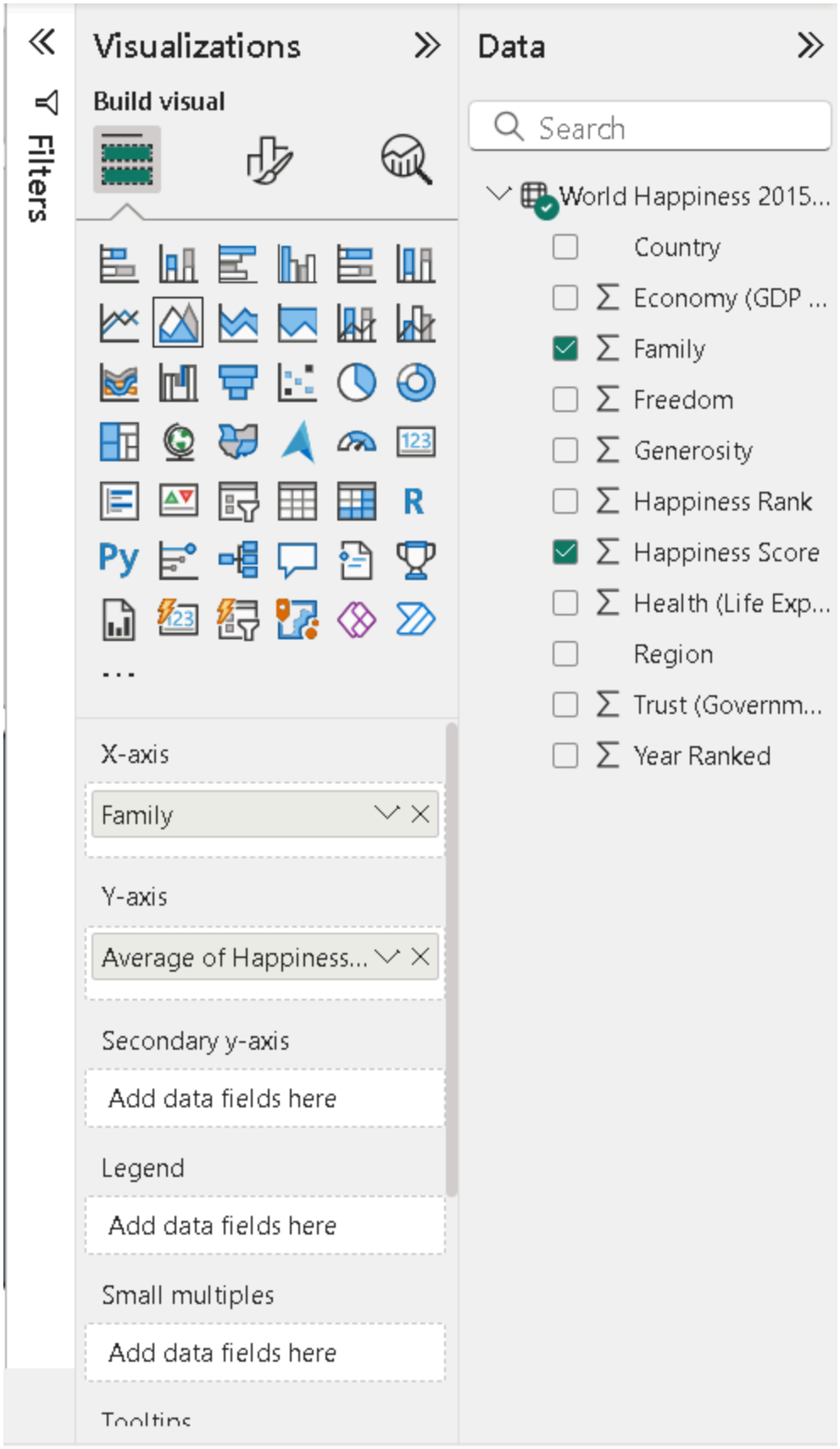

Health and Happiness Corelation
Average Happiness Score
1.0
0.5
0.0
0
5
Average of Happiness Score

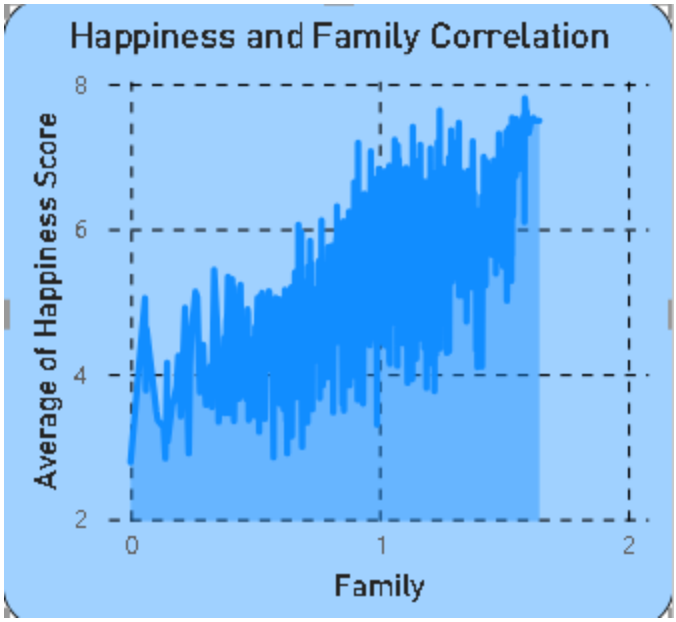
Freedom and Happiness Stacked Column Chart


Visualizations
Build visual
X-axis
Freedom
Y-axis
Average of Happiness...
Legend
Add data fields here
Small multiples
Add data fields here
Tooltips
Add data fields here
Drill through
Data
Search
World Happiness 2015...
Country
Economy (GDP ...
Family
Freedom
Generosity
Happiness Rank
Happiness Score
Health (Life Exp...
Region
Trust (Governm...
Year Ranked

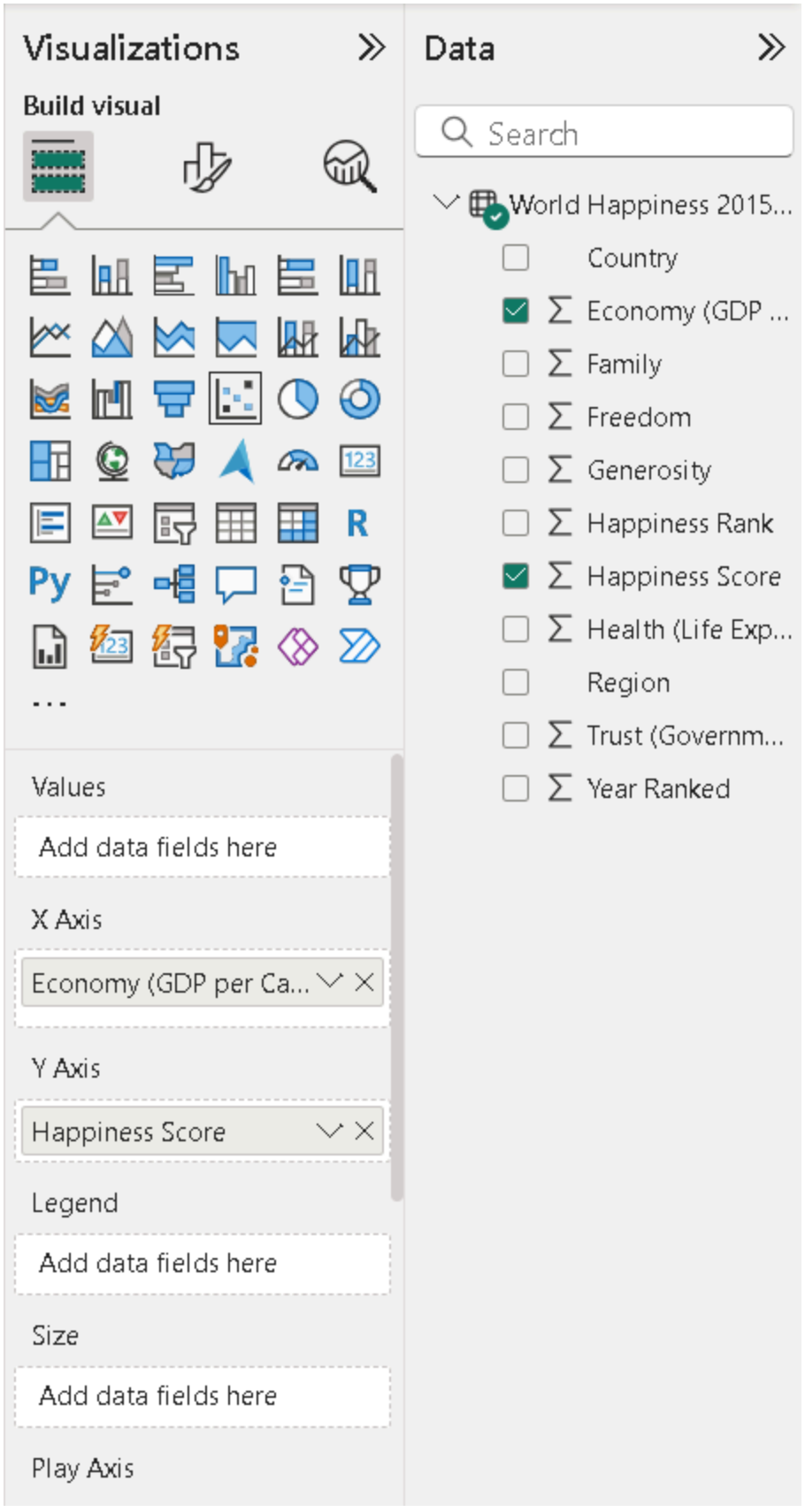

Freedom and Happiness Correlation
Average of Happiness Score
8
6
4
2
0
0.0
0.5
Freedom

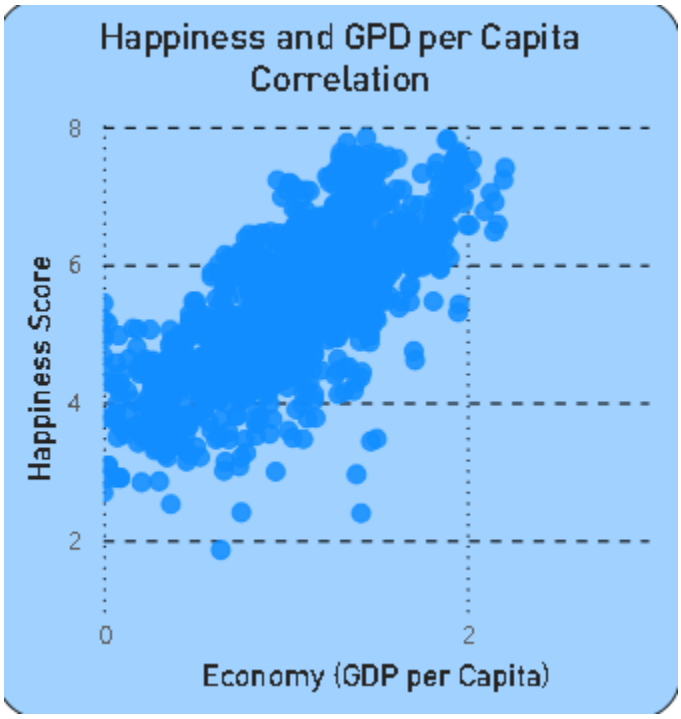
Happiness and Family Correlation Area Chart


Filters
Visualizations
Build visual
X-axis
Family
Y-axis
Average of Happiness...
Secondary y-axis
Add data fields here
Legend
Add data fields here
Small multiples
Add data fields here
Tooltips
Data
Search
World Happiness 2015...
Country
Economy (GDP ...
Family
Freedom
Generosity
Happiness Rank
Happiness Score
Health (Life Exp...
Region
Trust (Governm...
Year Ranked

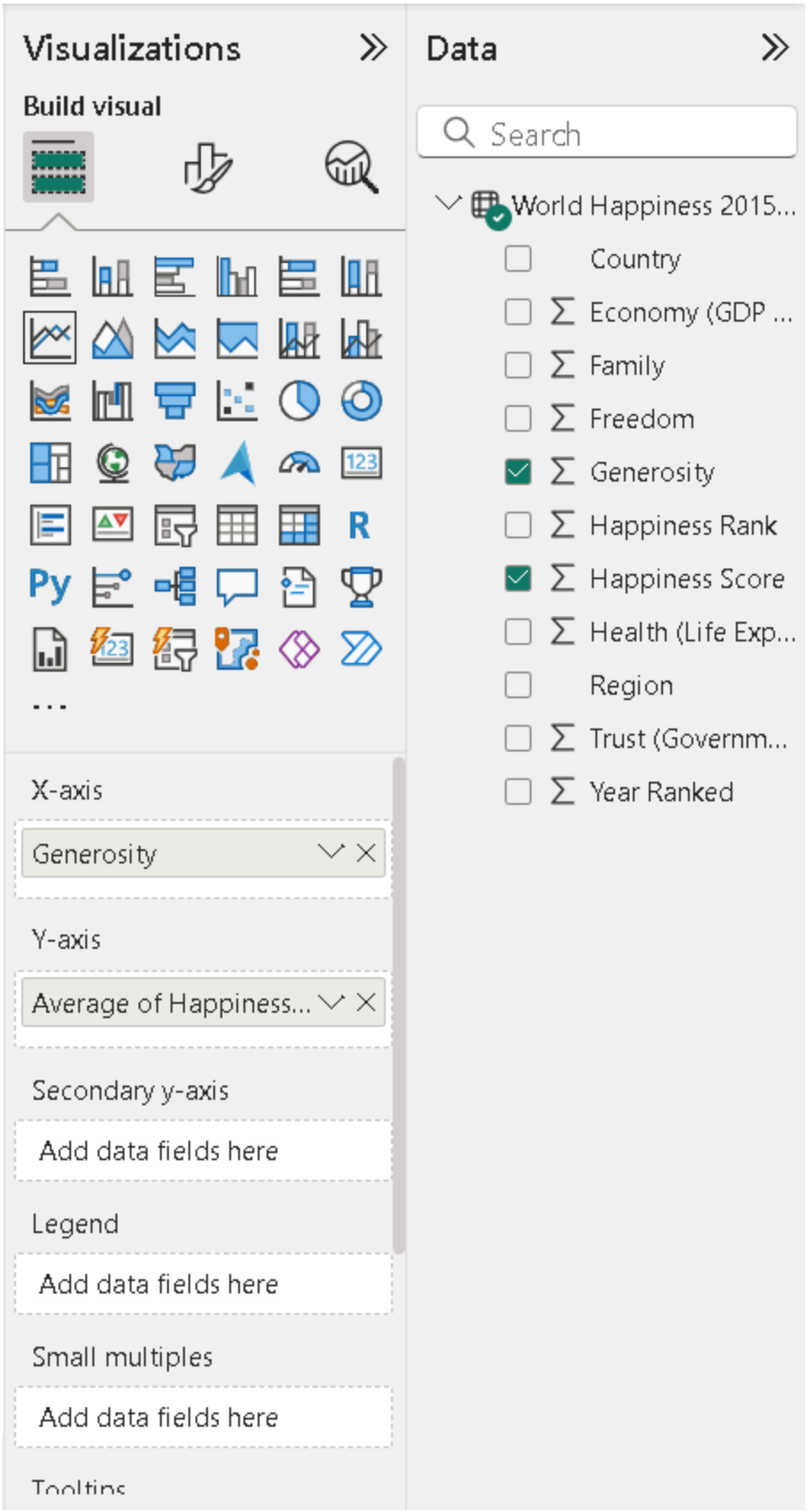

Happiness and Family Correlation
Average of Happiness Score
8
6
4
2
0
1
2
Family

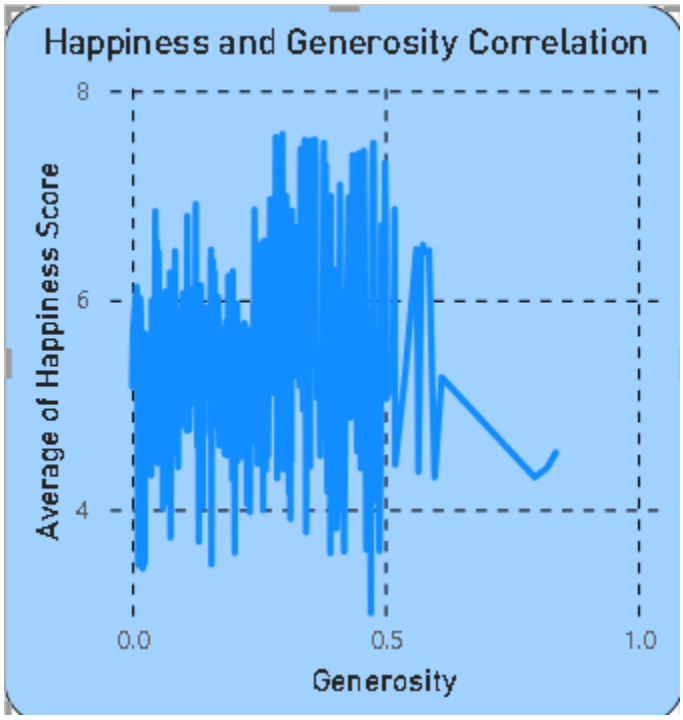
Happiness and GDPper Capita Scatter Plot


Visualizations
Build visual
Values
Add data fields here
X Axis
Economy (GDP per Ca...
Y Axis
Happiness Score
Legend
Add data fields here
Size
Add data fields here
Play Axis
Data
Search
World Happiness 2015...
Country
Economy (GDP ...
Family
Freedom
Generosity
Happiness Rank
Happiness Score
Health (Life Exp...
Region
Trust (Governm...
Year Ranked

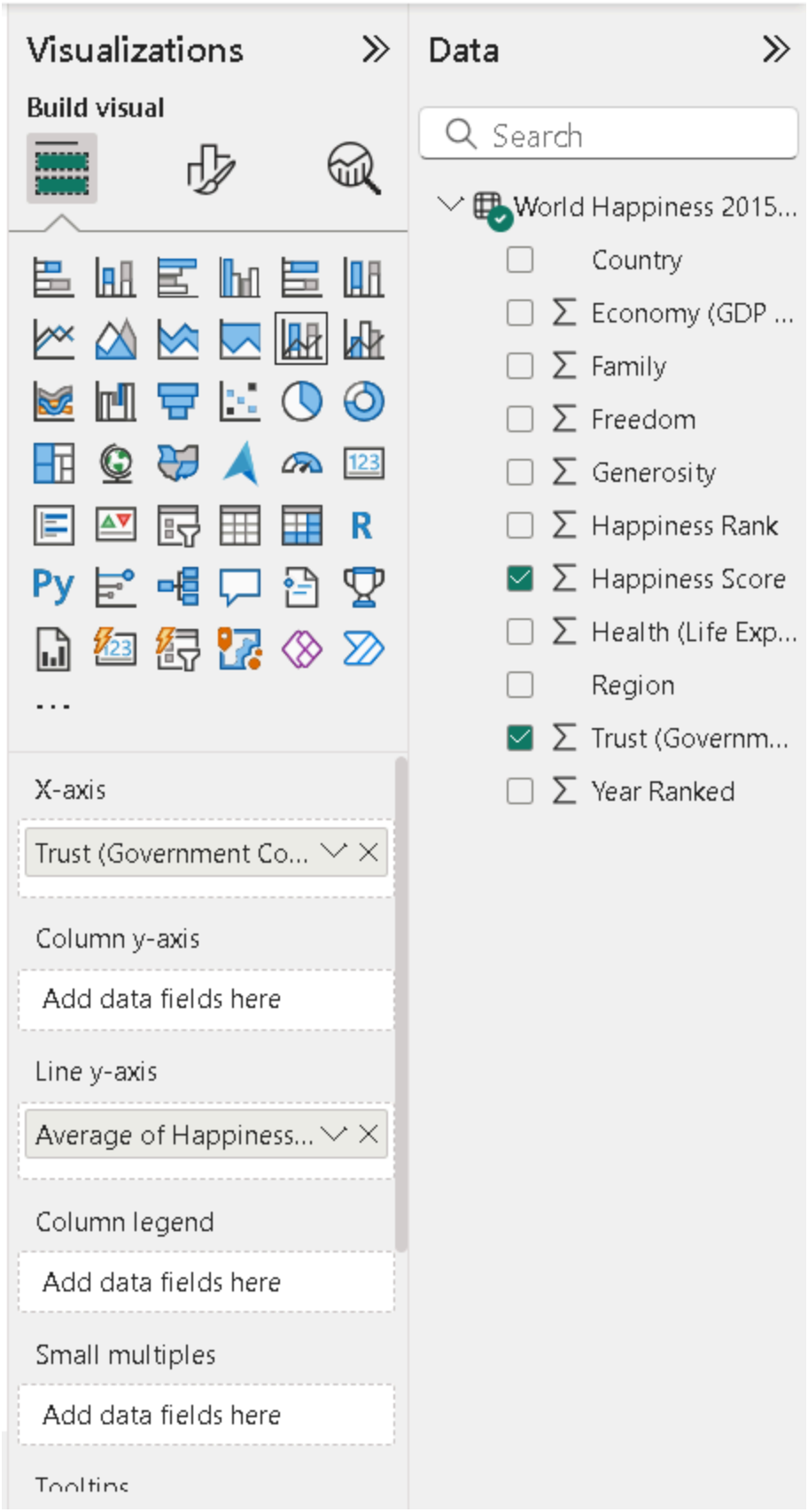

Happiness and GPD per Capita Correlation
8
6
4
2
0
2
Happiness Score
Economy (GDP per Capita)

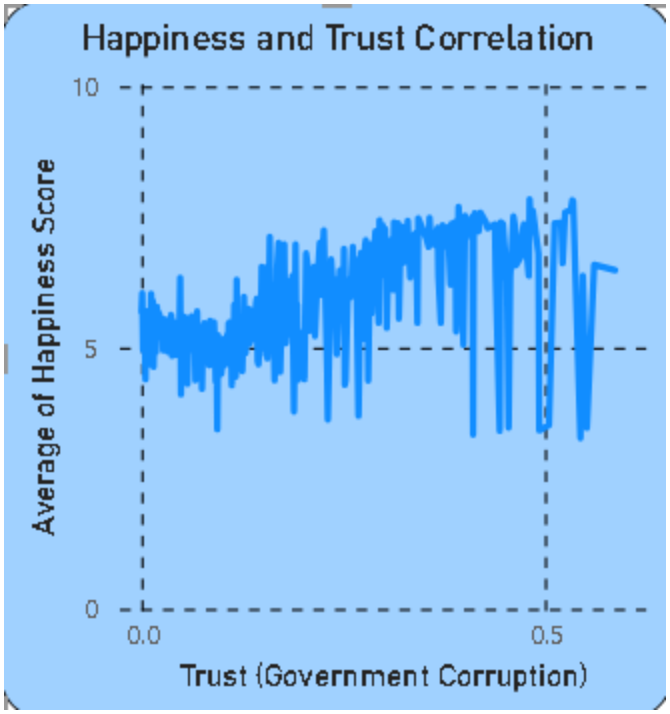
Happiness and Generosity Correlation Line Chart


Visualizations
Build visual
X-axis
Generosity
Y-axis
Average of Happiness...
Secondary y-axis
Add data fields here
Legend
Add data fields here
Small multiples
Add data fields here
Tooltips
Data
Search
World Happiness 2015...
Country
Economy (GDP ...
Family
Freedom
Generosity
Happiness Rank
Happiness Score
Health (Life Exp...
Region
Trust (Governm...
Year Ranked



Happiness and Trust Correlation Line and Stacked Column Chart


Visualizations
Build visual
X-axis
Trust (Government Co...
Column y-axis
Add data fields here
Line y-axis
Average of Happiness...
Column legend
Add data fields here
Small multiples
Add data fields here
Tooltips
Data
Search
World Happiness 2015...
Country
Economy (GDP ...
Family
Freedom
Generosity
Happiness Rank
Happiness Score
Health (Life Exp...
Region
Trust (Governm...
Year Ranked


Happiness and Trust Correlation
10
5
0
Average of Happiness Score
0.0
0.5
Trust (Government Corruption)