

# Formatting visuals

Formatting visuals refers to the process of **customising the appearance of the visuals** within a report to make them more appealing, insightful, and easier to interpret.

## Why format visuals?

- **Enhanced readability:** Make it easier for the users to interpret the visual and draw meaningful insights.
- **Improved appearance:** Enhance the general visual appeal of the report/dashboard.
- **Consistency:** Give visuals a consistent look and feel and follow branding guidelines.
- **Emphasis:** Highlight critical data points or trends.
- **Data storytelling:** Guide the audience's attention to the narrative we want to tell with the data.
- **Accessibility:** Enhance accessibility for users with disabilities.
- **User preferences:** Adapt the report/dashboard to the audience type.

## Ways we can apply formatting in Power BI:

- Modifying various aspects of a visual using the formatting pane.
- Communicating additional information.
- Themes.
- Conditional formatting.
- Customised visuals.

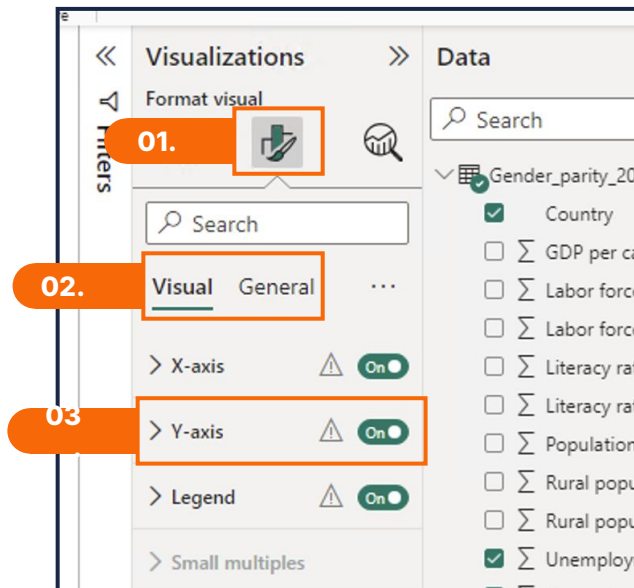
# The formatting pane in Power BI

The **Format your visual** pane in Power BI allows us to modify our visuals in various ways. It offers a **wide range of options and settings that can be adjusted** for each visual element.

## How to navigate to the "Format your visual" pane:

- 01.** Select the visual. Go to the **Visualizations** pane and click on the **paintbrush icon**.
- 02.** This will display the formatting pane divided into two sections, **Visual** and **General**. Each section provides a list of formatting options related to the various elements found in a visual.
- 03.** To modify a specific element, go to the appropriate option on the list, then **click on the dropdown** next to it to expand its available settings.

**Note:** The formatting settings displayed depend on the type of visual selected.



# Modify chart elements

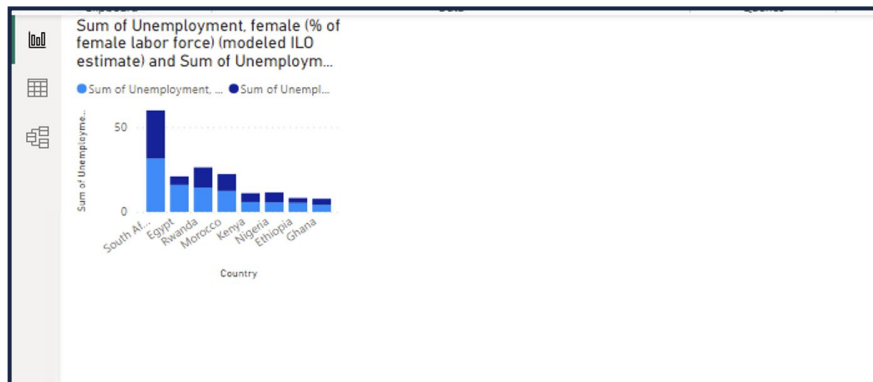
We have the **Gender\_parity\_2022 dataset** which contains various gender-related indicators for various African countries.

Suppose we have created a stacked column chart to show how the unemployment rate changes per country.

We will **apply some simple formatting steps** to make the visual more **appealing** and **readable**.

There is a wide range of formatting options under the **Format your visual** pane. In this train, we only look at a few of them. Take time to explore the rest of the options and the effects they have on your visual.

Gender participation rate	Unemployment, female	Unemployment, male	Literacy rate, adult female	Literacy rate, adult male	Rural population
68.253	15.927	4.992	67.38999939	78.77999878	28.016
86.195	5.277	2.911	44.42338181	59.24145889	40.15
72.444	4.048	3.699	76.19000244	84.48999786	22.783
76.058	5.799	5.209	79.84999847	85.48000336	37.532
69.699	12.347	9.924	67.37999725	84.80999756	19.915
61.756	14.311	11.897	73.30000305	78.69999695	38.088
65.539	5.489	5.973	52.65647888	71.25570679	26.249
63.565	31.426	28.398	94.53317261	95.54537201	18.653



# Modify chart elements

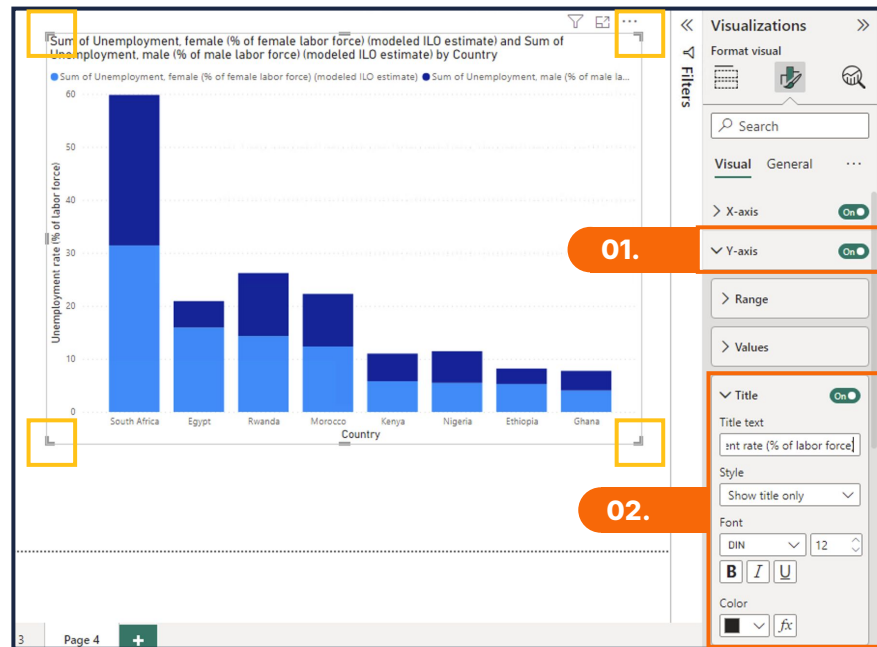
## Resize the visual:

Select the **visual** to display the border, then **drag the handles** to resize it to the desired size.

## Modify the axis titles:

Let's make our y-axis title shorter and clearer:

01. Click on the **y-axis dropdown** in the **Format your visual** pane.
02. Go to **Title** and expand it; go to **Title text** and enter the new title.



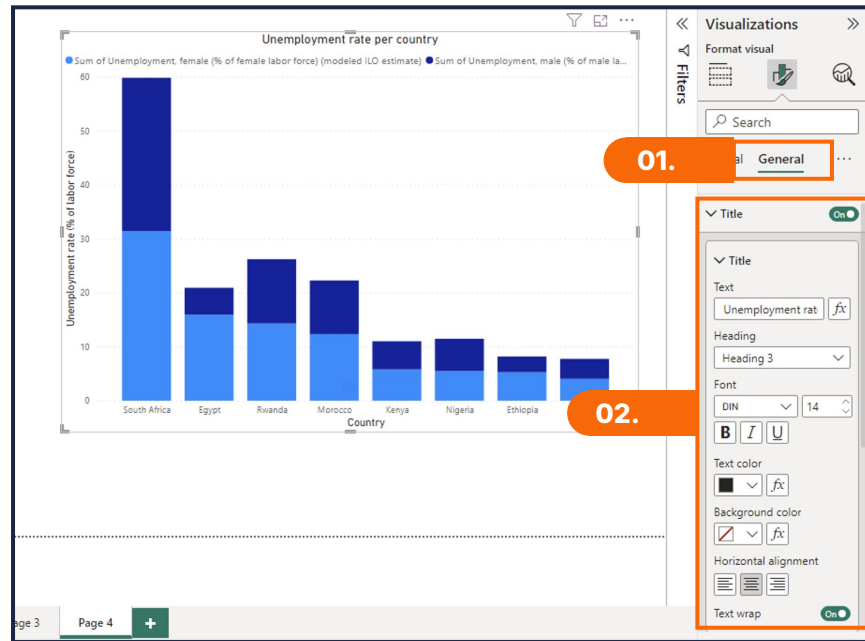
We can **modify the axis titles in other ways** such as the font and colour.

# Modify chart elements

## Modify the chart titles:

Let's make our chart title shorter and more meaningful:

01. Go to the **General** section of the **Format your visual** pane.
02. Go to **Title** and expand it; **Title > Text** and enter the new title; go to **Horizontal alignment** and choose **Centre**.



We can **modify the chart title in other ways** such as the font and colour.

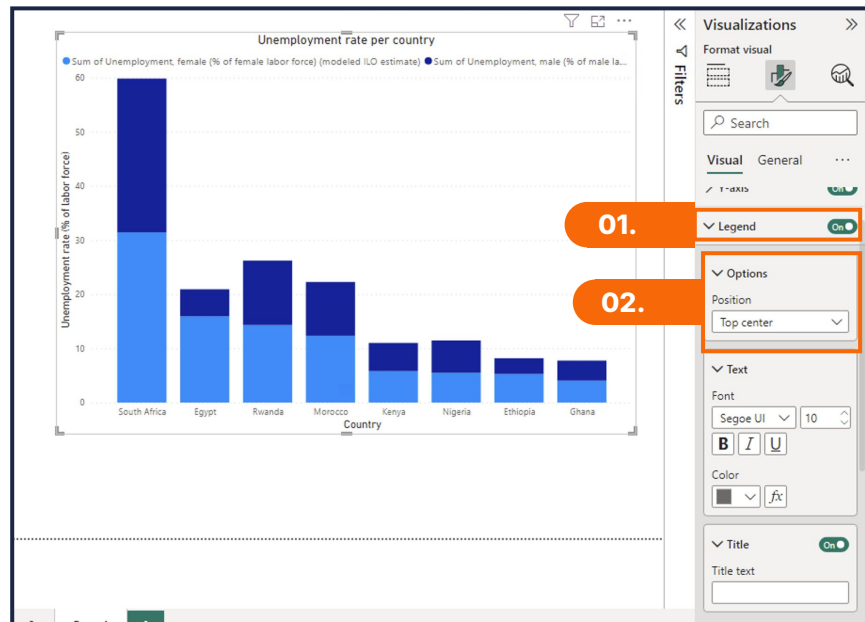
# Modify chart elements

## Modify the legend:

**01.** Go to the **Visual > Legend** section of the **Format your visual** pane.

**02.** Go to **Positions** and expand it. Choose a desired legend position.

We notice that under the legend formatting settings we **do not have an option to change the legend text**. How can we achieve this?



We can **modify the legend in other ways** such as the font colour and adding a legend title.

# Communicate additional information

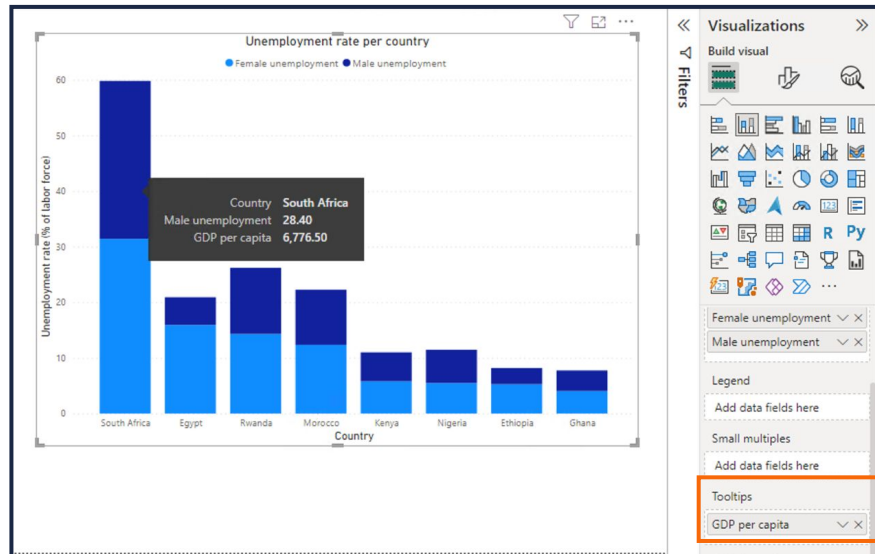
We can **add more clarity** and **insights** to a visual by **communicating additional information** other than the data points used to create the visual. In Power BI, we can use the **tooltip** and **reference line** features to **provide supplementary information**.

## Tooltips

An interactive feature where a **small pop-up window appears** when we **hover** over a data point in a visual.

By default, the tooltip will display the data point's category and value but we can customise it in various ways:

01. Go to **Visualizations**, then the **Tooltips** well.
02. **Drag and drop** the desired field to the **Tooltips** well.
03. **Rename** and choose **aggregation**.
04. The new field is now displayed in the tooltip.



# Communicate additional information

## Reference lines

Reference lines are **horizontal or vertical lines** added to a visual to mark and communicate certain insights about the data being represented, such as the average, maximum, minimum, and median.

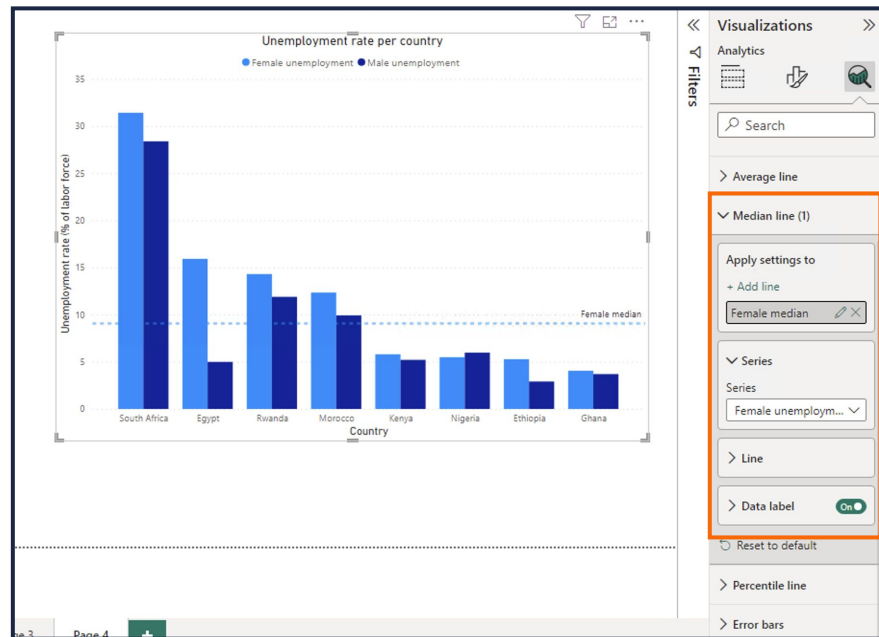
### Steps to add a reference line:

01. Go to the **Analytics** icon under the **Visualizations** pane.

**Note:** The list of analytical options shown is dependent on the type of visual selected.

02. Click and **expand** the **type of line** we wish to create.
03. Click **Add** to create a new line, **name** it, and choose the field it should be based upon.

We then have options to **format the line** and **the data label** in various ways.





# Themes in Power BI

The **formatting pane** allows us to **only format a single visual** at a time.

If we have **multiple visuals** in a report page, we can **use Power BI themes** to format them all at once such that they share the same colours, fonts, and other design elements.

Power BI has **several built-in themes**, each with their own **predefined formatting settings**. Automatically, a new report is given a **default theme**.

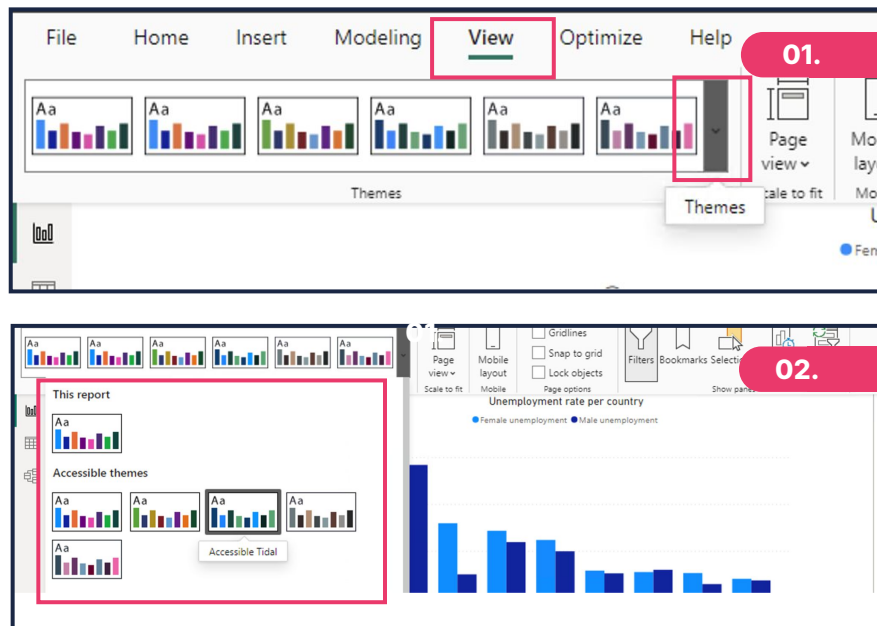
# Apply a theme

To apply a different theme, we follow these steps:

01. Select **View** at the top. Go to **Themes** and click on the dropdown.
02. Select a **theme** from the options provided.

The **theme is applied** and the colours, fonts, and general appearance of our **visuals change accordingly**.

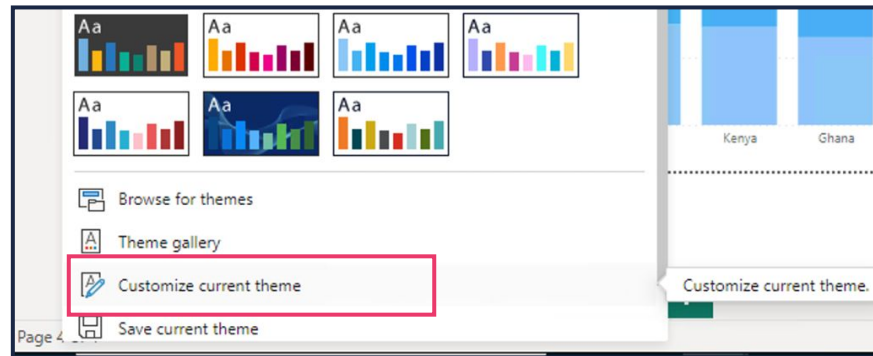
Any **new visual** we create in our report will follow the **same theme**.



# Customise a theme

We can customise a given theme by changing to our preferred formatting settings.

01. Select **View** at the top, and go to **Themes**.
02. Select **Customise current theme**.



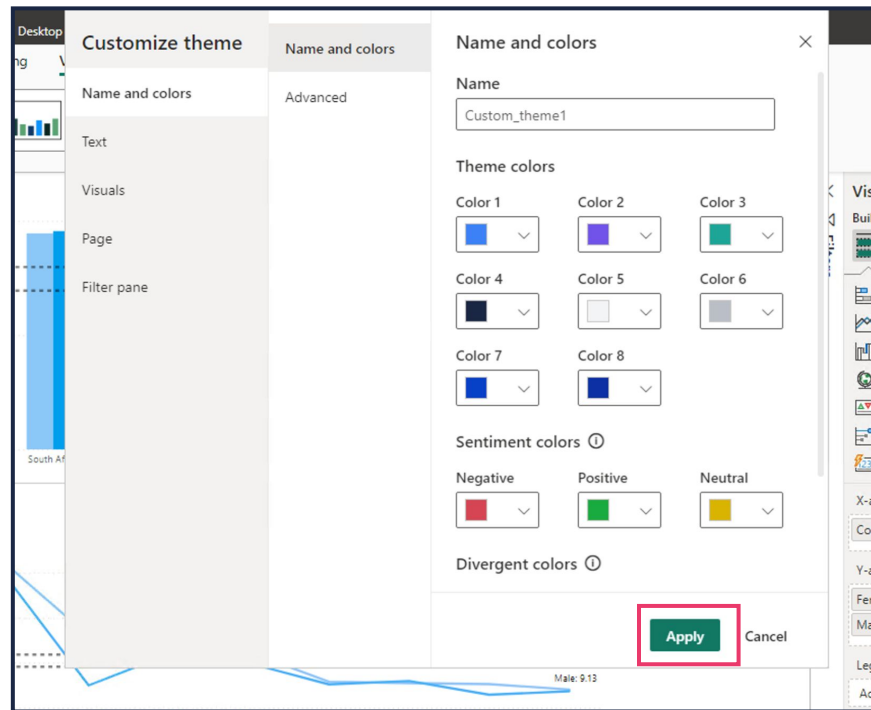
A dialogue box with customisable theme settings appears. They are grouped into the following categories:

- **Name and colours:** Specify the name and choose a colour palette for the theme.
- **Text:** Change the settings for the text elements in your report such as the font family, size, and colour.
- **Visuals:** Modify visual elements such as background, border, header, and tooltips.
- **Page:** Format and style the report page itself such as the wallpaper and background.
- **Filter pane:** Adjust the appearance and layout of the filter pane.

# Customise a theme

- 03. Click on **Apply** when we have modified all the desired formatting settings.
- 04. The **changes are saved and applied** to our report.

**Note:** It's best to choose a theme that is close to what we want so that we only make a few adjustments.



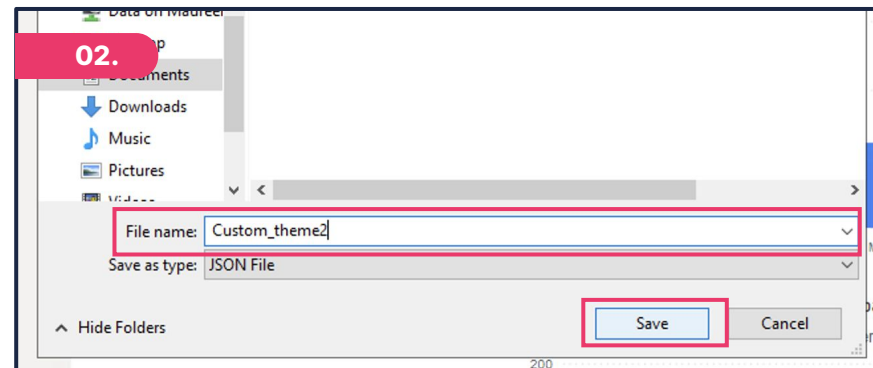
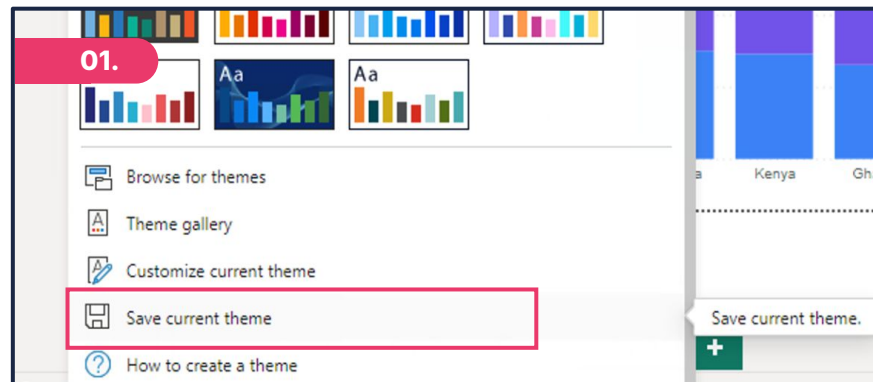
# Save a theme

Our customised theme is only **saved to the current Power BI file**. If we close and open this file, the theme will still be available.

However, if we open a new file, we will not be able to access our customised theme.

To be able **to use the theme in another file**, we need to **save** it as a **JSON file** on our local machine:

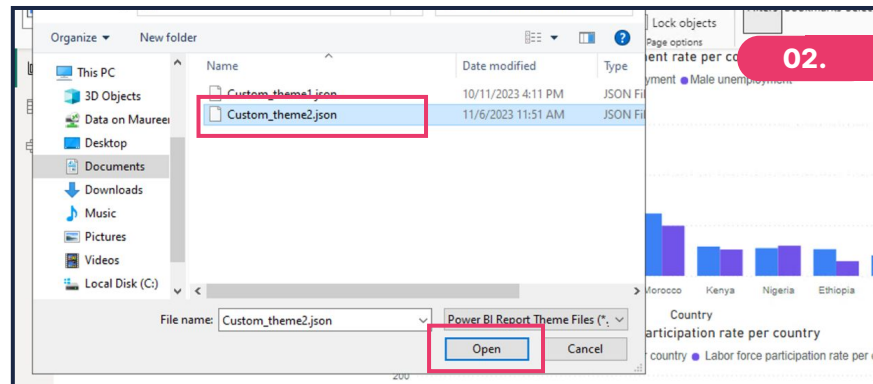
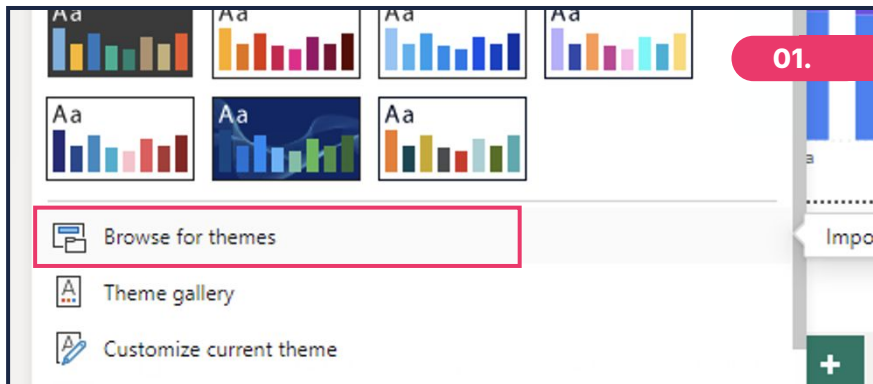
- 01.** Go to the **Themes** dropdown and select **Save current theme**.
- 02.** Pick a name and storage location for the file, then click **Save**.



# Import a theme

If we have a **saved custom theme file** in our local machine, we can **import it to the current Power BI file** using the following steps:

- 01.** Go to **Themes**, then select **Browse for theme**.
- 02.** **Navigate to** the saved **theme file** and upload it. The theme will then be applied to the current file.



# Conditional formatting in Power BI

Conditional formatting in Power BI is a feature that allows us to **change the formatting** of our visuals based on **specific rules** or **conditions**. This makes it easier to interpret and identify patterns and outliers within our data.

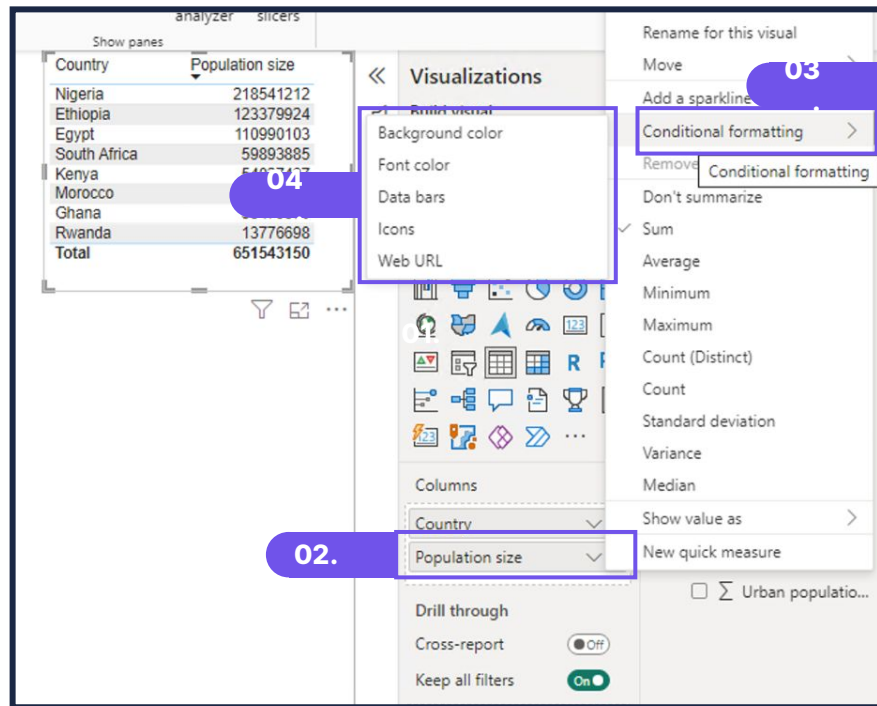
Power BI offers the following **conditional formatting options**:

- **Background colour:** Change the background colour of the data points in your visual based on specified conditions.
- **Font colour:** Modify the colour of the text within your visual based on specific rules or conditions.
- **Data bars:** Provide a visual representation of data values by adding horizontal bars whose lengths correspond to the data values' magnitude.
- **Icons:** Add built-in or custom icons next to data values, helping to convey a quick visual message about the data's status.
- **Web URL:** Create hyperlinks within your visual that direct users to external web content.

# Conditional formatting in Power BI

## To apply conditional formatting:

01. Go to the **Build visual pane**.
02. **Go to the field** we wish to apply conditional formatting and **click on the dropdown**.
03. Select **conditional formatting**.
04. **Choose a formatting option**.





# Conditional formatting in Power BI

**05.**

**Data bars - Population size**

Format cells with bars based on their values.

☐ Show bar only

Minimum: Lowest value (dropdown), Enter a value (text box)

Maximum: Highest value (dropdown), Enter a value (text box)

Positive bar: [Green bar icon] (dropdown)

Negative bar: [Blue bar icon] (dropdown)

Bar direction: Left to right (dropdown)

Axis: [Black bar icon] (dropdown)

**OK** Cancel

Country	Population size
Nigeria	218541212
Ethiopia	123379924
Egypt	110990103
South Africa	59893885
Kenya	54027487
Morocco	37457971
Ghana	33475870
Rwanda	13776698
Total	651543150

**05.** A dialogue box with **various conditional formatting settings** appears. After we **set all the conditional formatting options**, we click **OK**.

**Note:** These **settings depend on the formatting option we choose**.

**06.** The changes are applied.

**06**

Visualizations

Build visual

Filters

Country	Population size
Nigeria	218541212
Ethiopia	123379924
Egypt	110990103
South Africa	59893885
Kenya	54027487
Morocco	37457971
Ghana	33475870
Rwanda	13776698
Total	651543150

# Custom visuals in Power BI

Custom visuals are **custom-built** or **third-party data visualisations** that can be imported and used within Power BI reports and dashboards. This allows us to extend the built-in visualisation options with unique charts, graphs, and visuals.

## Why use custom visuals?

Meet **specific visualisation needs** that can't be met by built-in visualisations that may be dictated by personal preferences, industry, or brand guidelines.

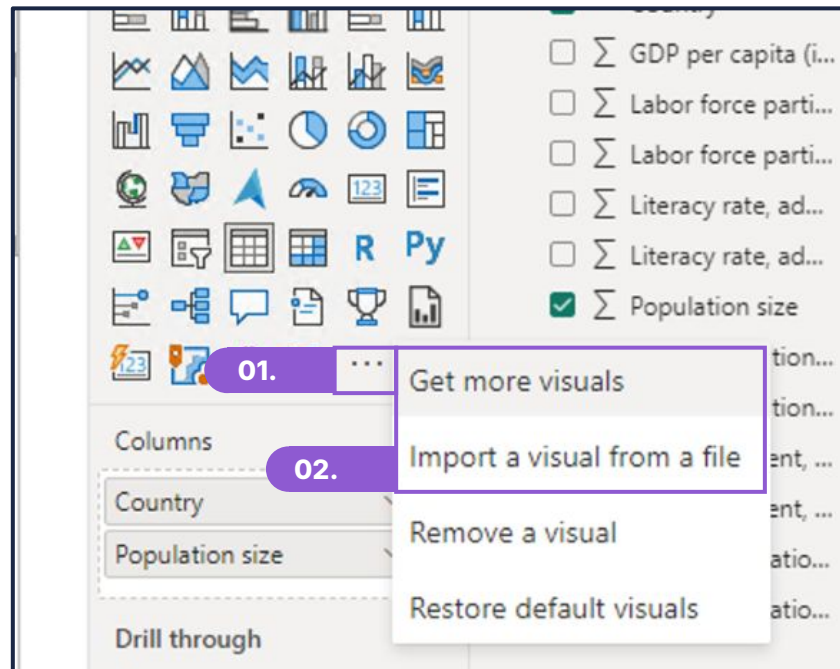
## How to get custom visuals:

- **Develop** your **custom visuals** using the Power BI developer tools or popular libraries.
- Find a wide variety of custom visuals in the **Power BI marketplace, AppSource**.

# Custom visuals in Power BI

## How to import custom visuals:

01. Go to the **Visualizations** pane and select the **ellipsis**.
02. Select **Get more visuals** from the menu. This will direct us to AppSource where we choose among the available visuals and import.  
  
**Or** select **Import a visual from a file** from the menu. This will direct us to our local machine where we choose a *.pbviz* file and import it.
03. Once imported, a new icon appears on the Visualizations pane and we can use the custom visual like any built-in visual.



**Note:** You will need a Microsoft account in order to use the Get more visuals option.