



Task Guide: Data Analysis

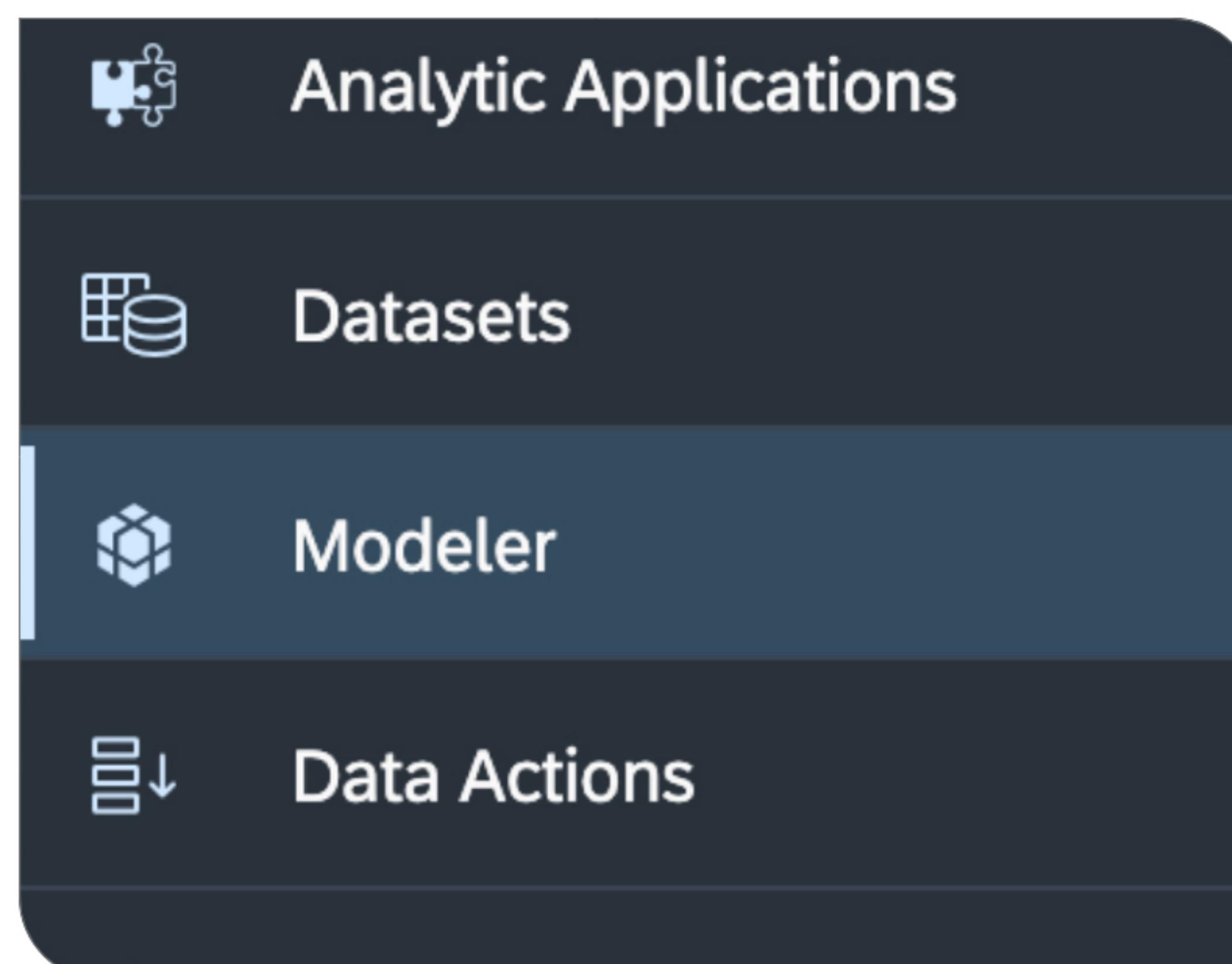


Import the data into SAC: Sales

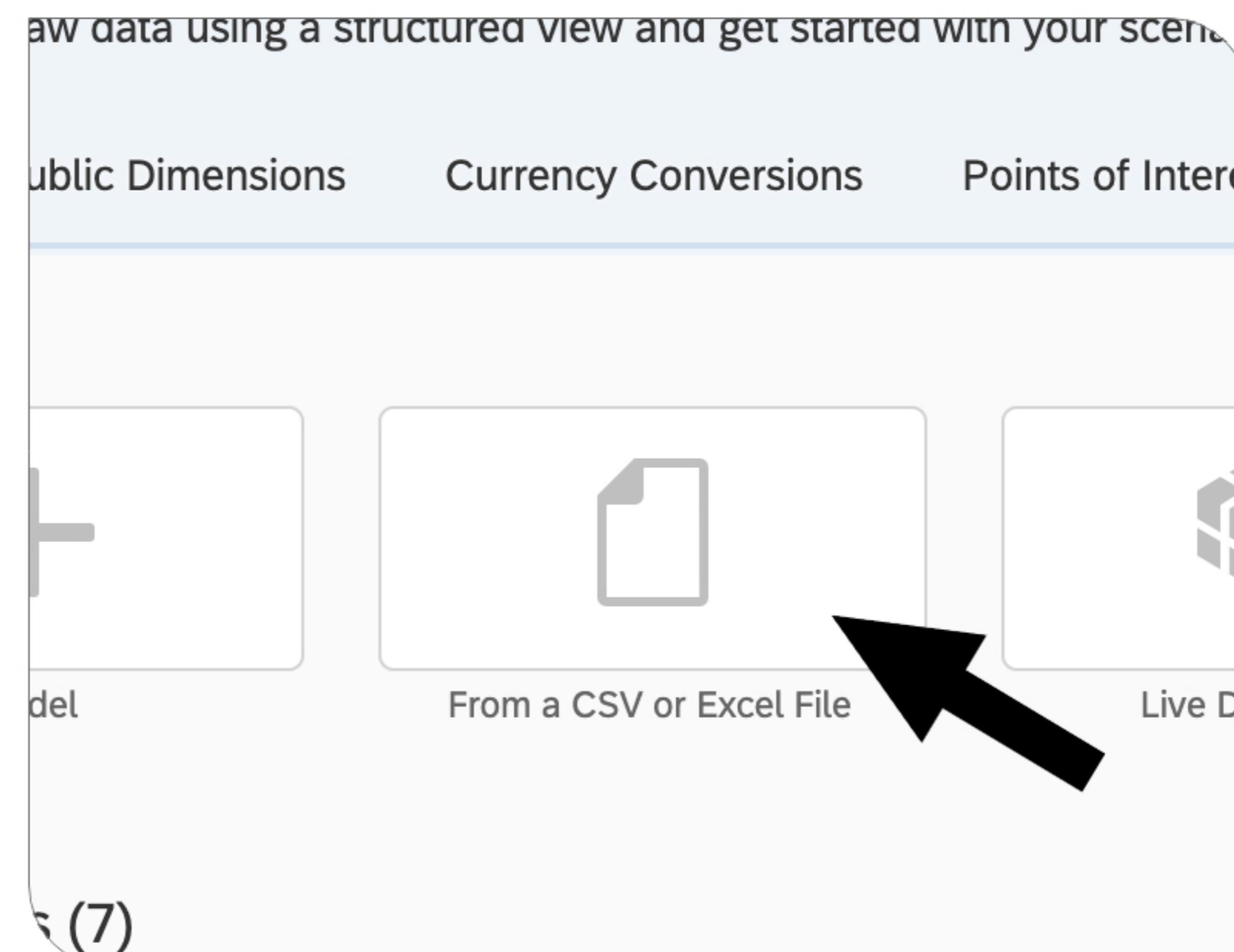
Building your model (data import & wrangling) is the lengthiest task you have.

NB!: Everything before building your story has to be done in 1 session, or you are likely going to lose your progress. Once you've created and saved your model (until page 14, incl.) you can safely take a break.

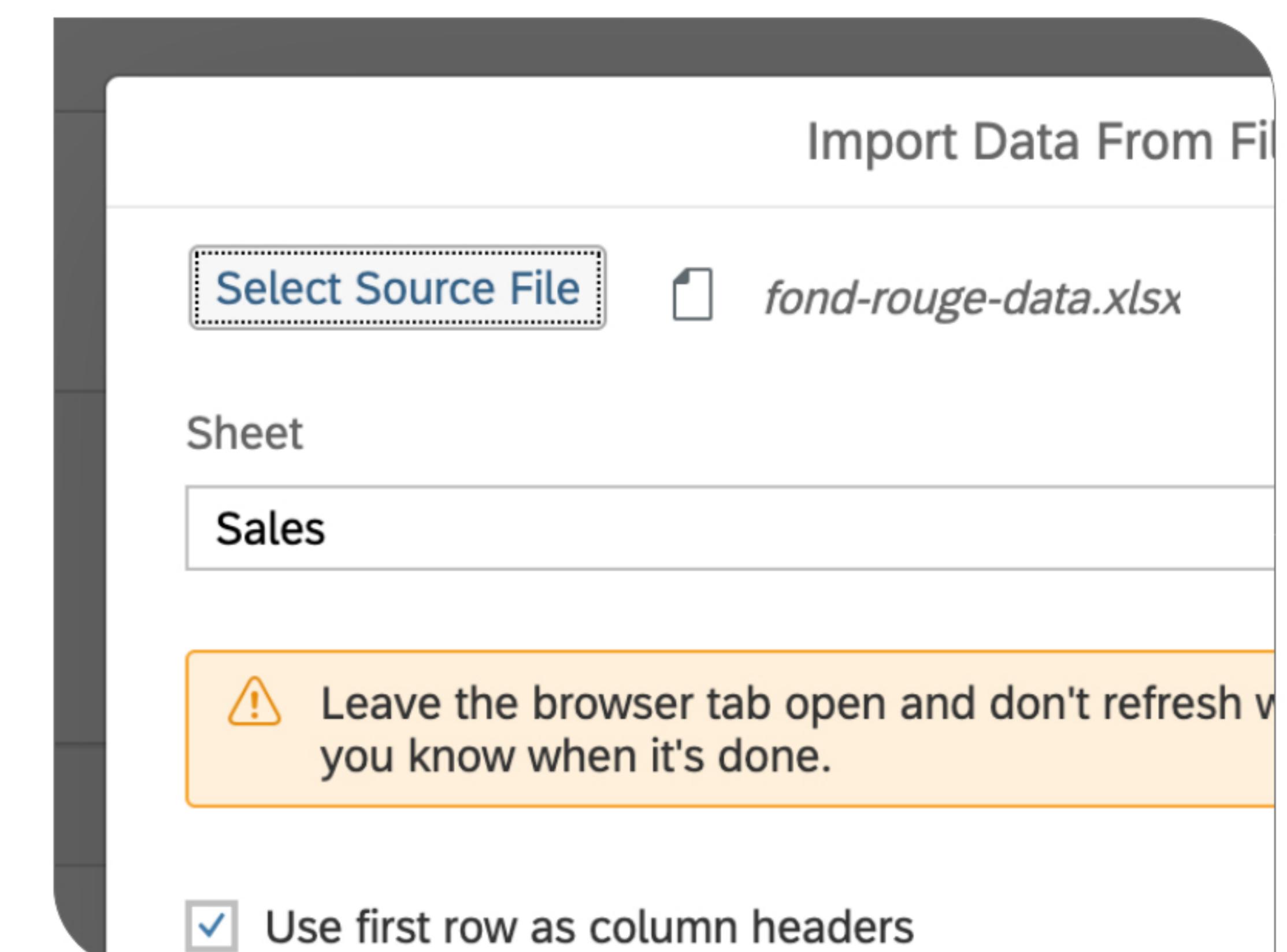
1. Go to the Modeler (in the main menu).



2. Select import from a file.



3. Upload the Sales sheet.



Once you click Import the data will start importing into SAC.

Sometimes it is imported as Draft Data - in this case you will see a popover show up and there you will be able to track the progress of the upload. When the upload progress completes just click the Draft Data item to open the Modeler (see next page for reference on how the Modeler looks).

More often than not - you will directly get into the Modeler (without the need to look for a Draft Data item to click on).

Import the data into SAC: Sales

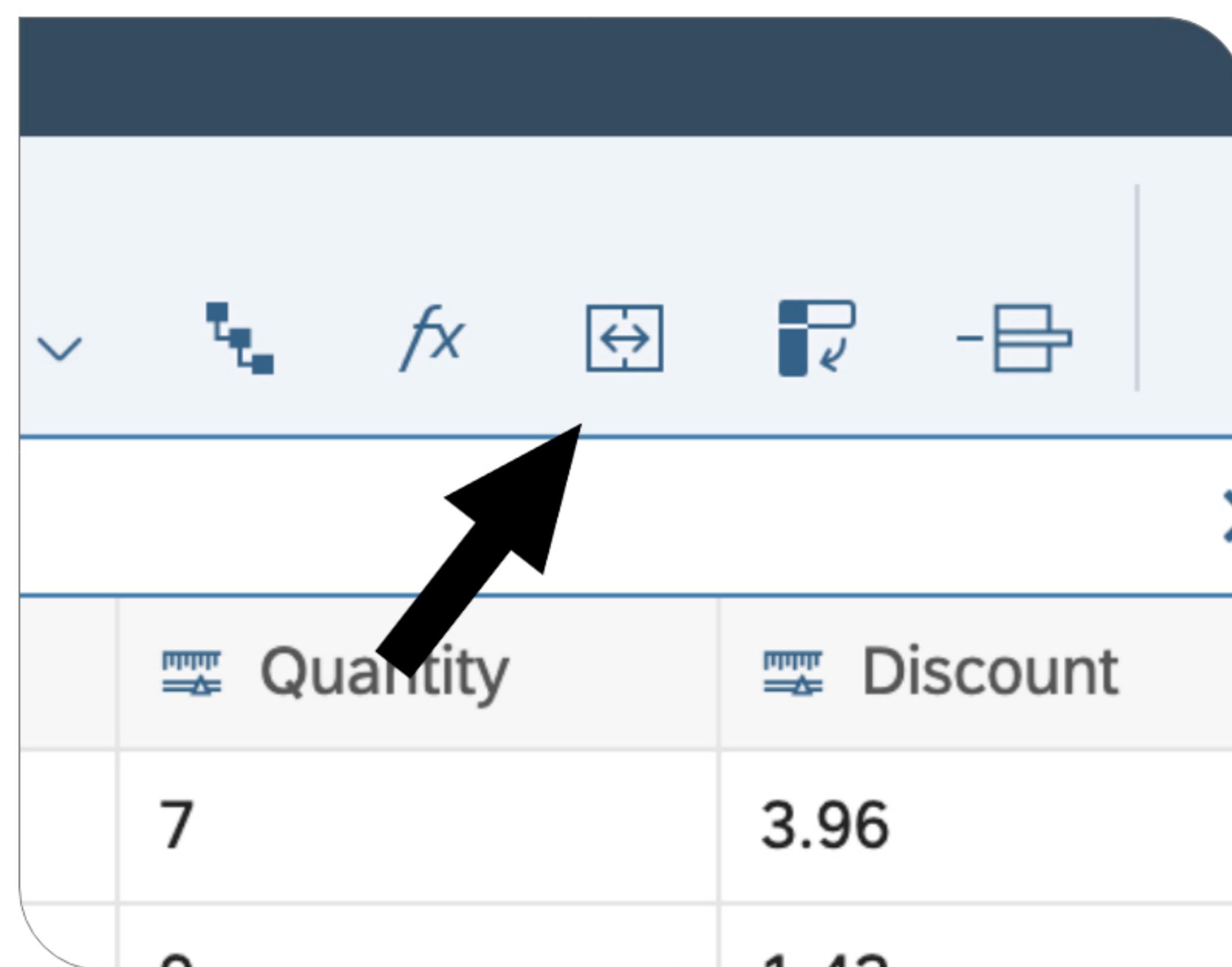
After the import of Sales is done, you should see something similar to this.

The screenshot shows the SAP Analytics Cloud Modeler interface. On the left, the navigation sidebar is visible with various options like Home, Files, Apps, Stories, Analytic Applications, Datasets, Modeler (which is selected), Data Actions, Allocations, Value Driver Trees, More..., Content Network, Security, Transport, Account, Connections, and System. The main area displays a data preview titled "Create Transform" with columns: #, Article, ProductCategory, ProductID, Product, Quantity, and Discount. Below this is a table with 43 rows of sales data. To the right, the file "fond-rouge-data.xlsx" is shown with details: 9,450 rows uploaded, sample size of 2,000 rows, 13 columns, 8 dimensions, and 5 measures. A message indicates that work done on the sample will apply to the full data during model creation. Below this are sections for Model Requirements (No issues detected), Model Information (Data: fond-rouge-data.xlsx — File), and Model Options (checkboxes for Enable Planning and Fill empty ID cells with the "#" value, and a field for Default Currency for Model set to USD). At the bottom are "Create Model" and "Validate Data" buttons.

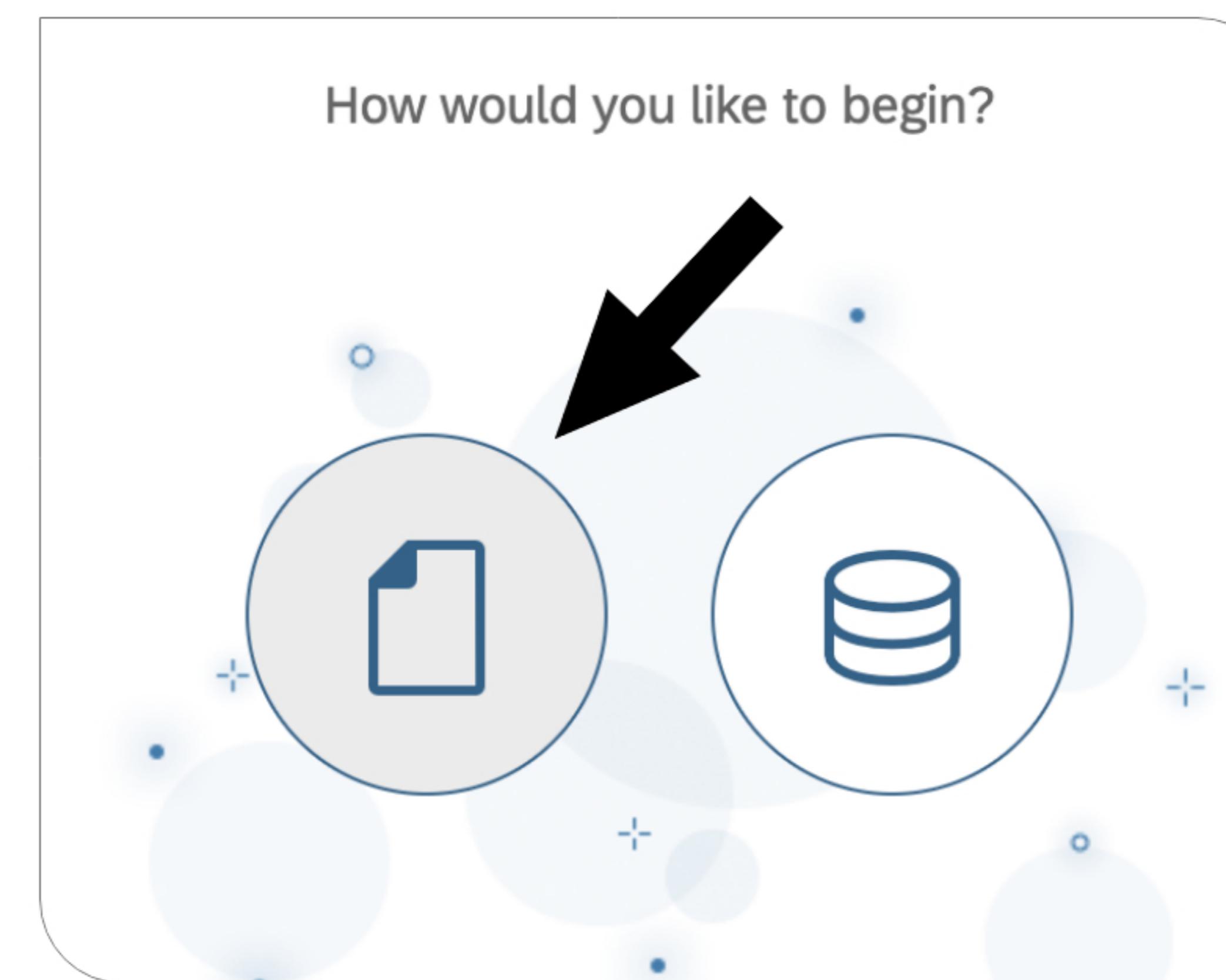
#	Article	ProductCategory	ProductID	Product	Quantity	Discount
2	Brogues	product-124ef52a-	François	7	3.96	
3	Brogues	product-a19d1434-	Denis	9	1.42	
4	Flats	product-0a97c64c-	Estelle	5	2.14	
5	Platforms	product-642f72ba-	Bella	8	4.55	
6	Stilettos	product-fa4a41fc-4	Cecile	4	3.92	
7	Brogues	product-20700833-	Antoine	5	3.17	
8	Platforms	product-642f72ba-	Bella	10	3.81	
9	Stilettos	product-f7e07591-	Eloise	1	4.44	
10	Platforms	product-642f72ba-	Bella	6	3.75	
11	Platforms	product-642f72ba-	Bella	7	0.94	
15	Platforms	product-642f72ba-	Bella	10	0.05	
16	Stilettos	product-f7e07591-	Eloise	9	3.52	
17	Platforms	product-98f22154-	Bridgette	4	1.53	
18	Brogues	product-124ef52a-	François	1	0.48	
29	Stilettos	product-7bef3e02-	Claudette	6	2.43	
30	Flats	product-9f6a916a-	Adele	7	2.03	
31	Platforms	product-98f22154-	Bridgette	1	0.25	
32	Platforms	product-642f72ba-	Bella	10	4.1	
43	Stilettos	product-fa4a41fc-4	Cecile	9	3.97	

Import the data into SAC: Returns

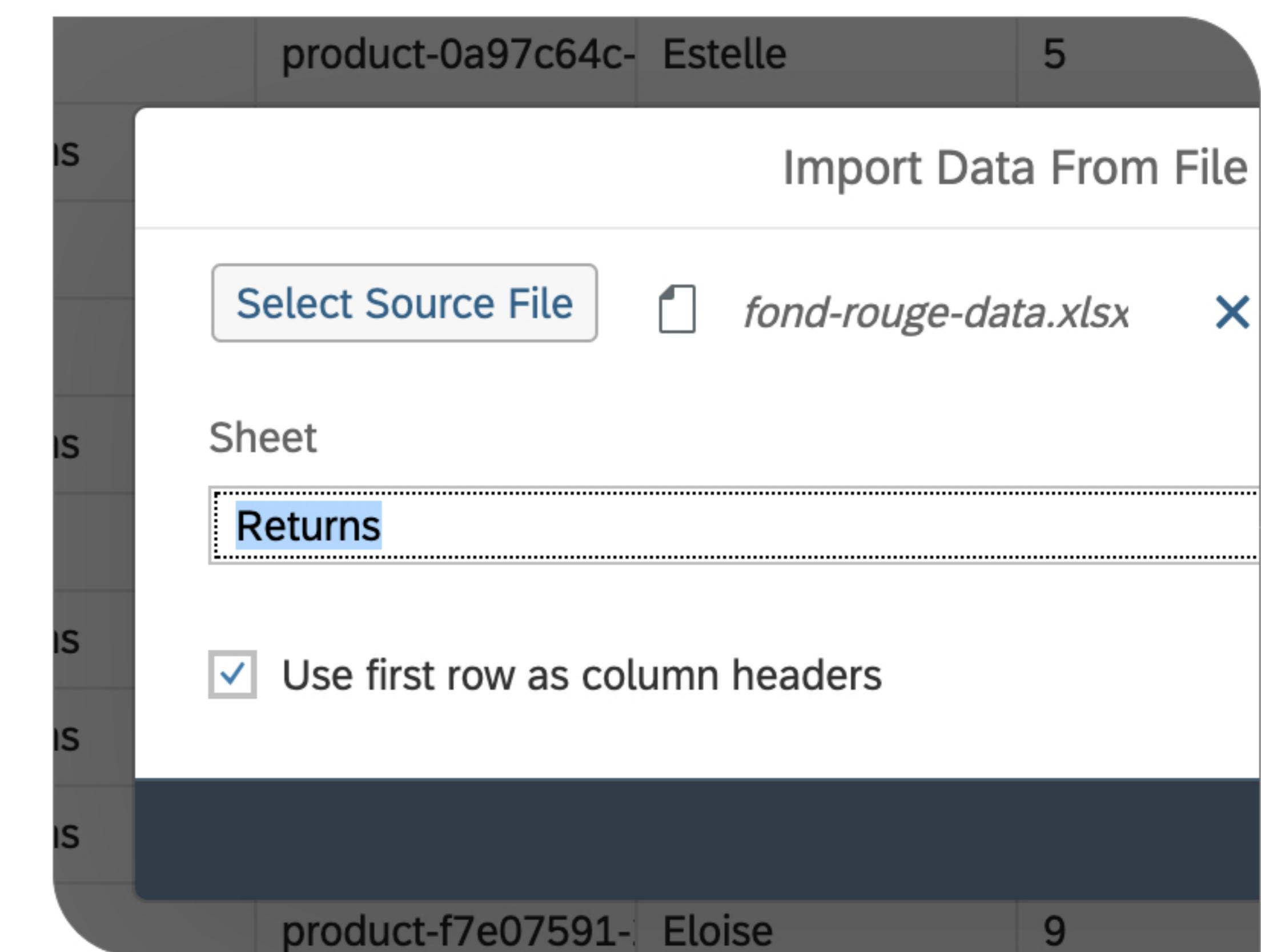
1. Click on the Combine Data button in the toolbar.



2. Select import from a file.



3. Upload the Returns sheet.



Import the data into SAC: Returns

Make sure to combine the data you've already imported (Sales) with the Returns, using the OrderID column. As you can see below - only the OrderID is selected on both sides. Now click the Combine button (bottom-right) to run the data combination.

Combine Settings

Combine Preview

Data Sample Preview showing 22 of 9450 accepted rows

	fond-rouge-data.xlsx	fond-rouge-data.xlsx
Accepted	14	9450
Duplicated	0	0
Nulls	0	0
Omitted	0	0

Buttons: Combine, Back, Cancel, Create Model, Validate Data

Import the data into SAC: Sentiment

To prepare for importing the Sentiment data, we need to create a couple of new columns to be used as key columns during the data combination. We need to create a Year_Month column through a smart transform of the Date column; and Location_ID through a transform of the Country and City columns.

Let's start with Year_Month.

1. Select the Date column and click on “Create a Transform...” in the menu.

Date	Country	City
2019/2/8	Belgium	Brussels
2019/3/10	Belgium	Brussels
2019/9/20	Belgium	Brussels
2019/10/23	Belgium	Brussels
2019/10/3	Belgium	Brussels
2019/10/9	Belgium	Brussels

2. Select the Extract transform.

OrderID	Date	Date_2	Country
order-9dd87a4c-73	2019/2/8	2019/2	Belgium
order-47acd540-c1	2019/3/10	2019/3	Belgium
order-568f8952-7d	2019/9/20	2019/9	Belgium
order-d47b5713-c4	2019/10/23	2019/10	Belgium
order-507c6ac6-61	2019/10/3	2019/10	Belgium
order-6202751c-84	2019/10/9	2019/10	Belgium
order-6400590e-59	2019/12/25	2019/12	Belgium
order-ad5c650b-37	2019/12/3	2019/12	Belgium

3. Extract everything before the last ‘/’.

OrderID	Date	Date_2	Country
order-9dd87a4c-73	2019/2/8	2019/2	Belgium
order-47acd540-c1	2019/3/10	2019/3	Belgium
order-568f8952-7d	2019/9/20	2019/9	Belgium
order-d47b5713-c4	2019/10/23	2019/10	Belgium
order-507c6ac6-61	2019/10/3	2019/10	Belgium
order-6202751c-84	2019/10/9	2019/10	Belgium
order-6400590e-59	2019/12/25	2019/12	Belgium

4. Rename the new column to Year_Month (Press Enter to save).

Date	Year_Month	Country
2019/2/8	2019/2	Belgium
2019/3/10	2019/3	Belgium
2019/9/20	2019/9	Belgium
2019/10/23	2019/10	Belgium
2019/10/3	2019/10	Belgium
2019/10/9	2019/10	Belgium

Import the data into SAC: Sentiment

In the Sentiment data we have a Location_ID column with data looking like this: “Belgium, Brussels”.

Here are the steps to create a Location_ID column in the data we've imported so far, so we can use it to later match the Sentiment's Location_ID.

1. Duplicate Country.

h	⌘ Country	Country_2	⌘ City
	Belgium		Brusse
	Belgium		14
	Belgium		Un
	Belgium		
	Belgium	Belgium	Duplicate column
	Belgium	Belgium	Delete Column
	Belgium	Belgium	Hide Selected
	Belgium	Belgium	Delete Rows...
	Belgium	Belgium	
	Belgium	Belgium	Brusse
	Belgium	Belgium	Brusse
	Belgium	Belgium	Brusse

2. Duplicate City.

⊕ City	City_2	Latitude
Brussels		50.850346
Brussels		
Brussels	Brussels	50.850346
Brussels	Brussels	50.850346
Brussels	Brussels	50.850346

3. Select Country_2 -> add City_2 to the selection (holding Cmd/Ctrl) -> “Concatenate ... with ‘,’”.

⊕ Country_2	⊕ City	⊕ City_2	Country_2_C...	Lat
Belgium	Brussels	Brussels	 	<input type="checkbox"/> Concatenate columns with " "
Belgium	Brussels	Brussels	 	<input type="checkbox"/> Concatenate columns with ", "
Belgium	Brussels	Brussels	 	<input type="checkbox"/> Belgium
Belgium	Brussels	Brussels	 	<input type="checkbox"/> Belgium, Brussels
Belgium	Brussels	Brussels	 	<input type="checkbox"/> Belgium, Brussels
Belgium	Brussels	Brussels	 	<input type="checkbox"/> Belgium, Brussels
Belgium	Brussels	Brussels	 	<input type="checkbox"/> Belgium, Brussels
Belgium	Brussels	Brussels	 	<input type="checkbox"/> Belgium, Brussels
Belgium	Brussels	Brussels	 	<input type="checkbox"/> Belgium, Brussels
Belgium	Brussels	Brussels	 	<input type="checkbox"/> Belgium, Brussels
Belgium	Brussels	Brussels	 	<input type="checkbox"/> Belgium, Brussels
Belgium	Brussels	Brussels	 	<input type="checkbox"/> Belgium, Brussels
Belgium	Brussels	Brussels	 	<input type="checkbox"/> Belgium, Brussels
Belgium	Brussels	Brussels	 	<input type="checkbox"/> Belgium, Brussels
Belgium	Brussels	Brussels	 	<input type="checkbox"/> Belgium, Brussels

4. Rename the new column to Location ID (Press Enter to save).

Display		Actions	
ty	Location_ID	Latitude	Longitude
els	Belgium, Brussels	53.46	4.36
els	Belgium, Brussels	53.46	4.36
els	Belgium, Brussels	50.850346	4.36
els	Belgium, Brussels	50.850346	4.36

Import the data into SAC: Sentiment

Having all the needed identification columns - it's time to import the final sheet of data - Sentiment. Here is how to map the data. **Make sure the selected column names and their order is the same on both sides!**

The screenshot shows the SAP Analytics Cloud Modeler interface with the 'Combine Data' step open. On the left, the navigation bar includes Home, Files, Apps, Stories, Analytic Applications, Datasets, Modeler (selected), Data Actions, Allocations, Value Driver Tree, More..., Content Network, Security, Transport, Account, Connections, and System. The main area displays two datasets being combined:

- Dataset 1 (Left):** 'fond-rouge-data.xlsx' (16 rows, 9450 columns). Columns listed: Location_ID, Year_Month, ProductID, OrderID, Country, City, Product.
- Dataset 2 (Right):** 'fond-rouge-data.xlsx' (6 rows, 10188 columns). Columns listed: Location, Year_Month, ProductID, Product, Sentiment, Class.

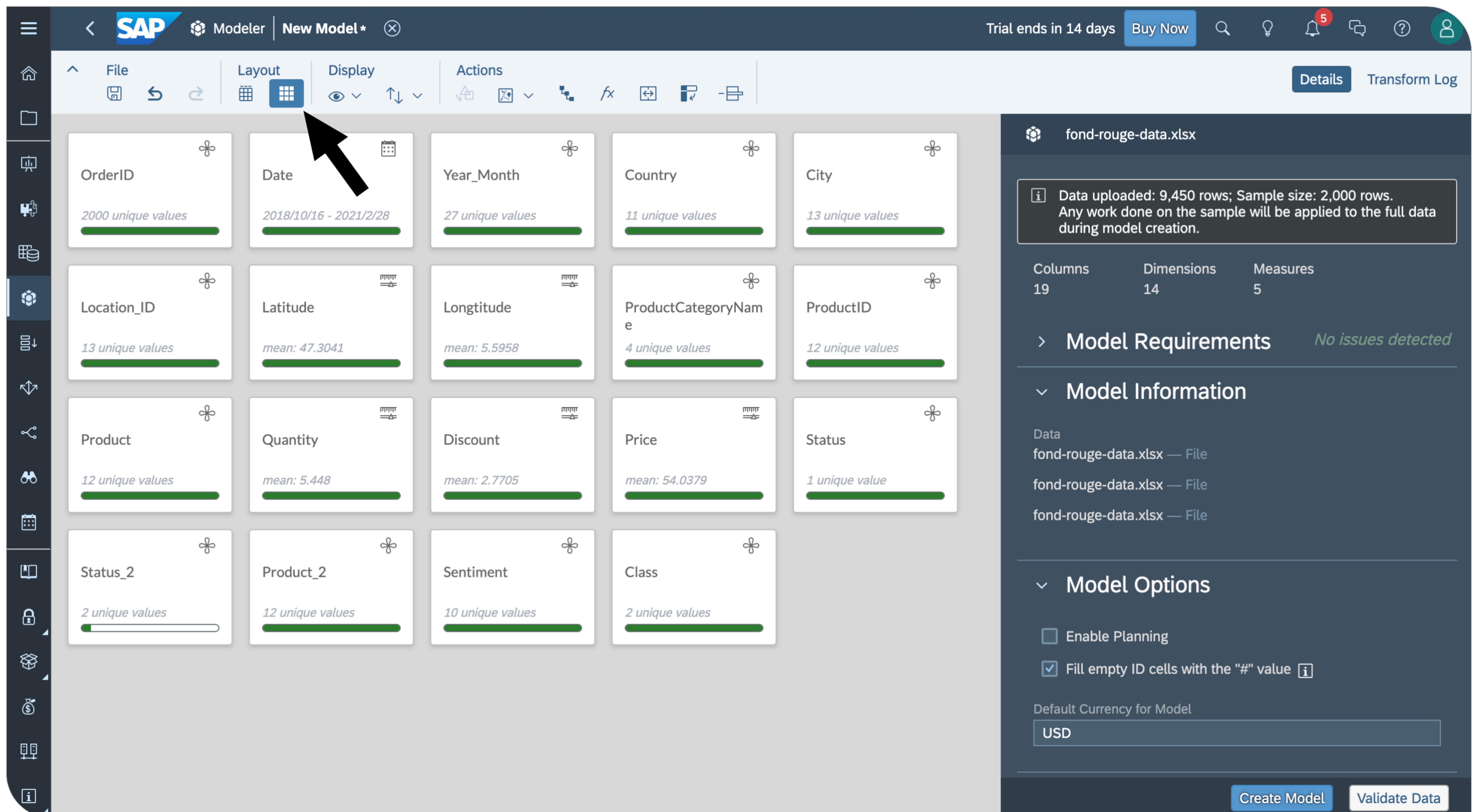
The 'Combine Preview' section shows a bar chart comparing the row counts (19 vs 9450) and highlights the mapping between the two datasets. A legend indicates Accepted (blue), Duplicated (yellow), Nulls (light gray), and Omitted (hatched).

Below the preview, the 'Data Sample' section shows a preview of 20 accepted rows from the combined dataset. The columns are grouped by source dataset: 'fond-rouge-data.xlsx' (OrderID, Date, Country, Year_Month, ProductID, Location_ID) and 'fond-rouge-data.xlsx' (Product, Sentiment, Class). The preview includes rows for Cecile and Bridgette.

At the bottom, there are buttons for 'Combine' (highlighted in blue), 'Back', 'Cancel', 'Create Model', and 'Validate Data'.

Data Wrangling

We have all the data we need. Now it's time to clean it up. Let's first look at the data in the Card View.

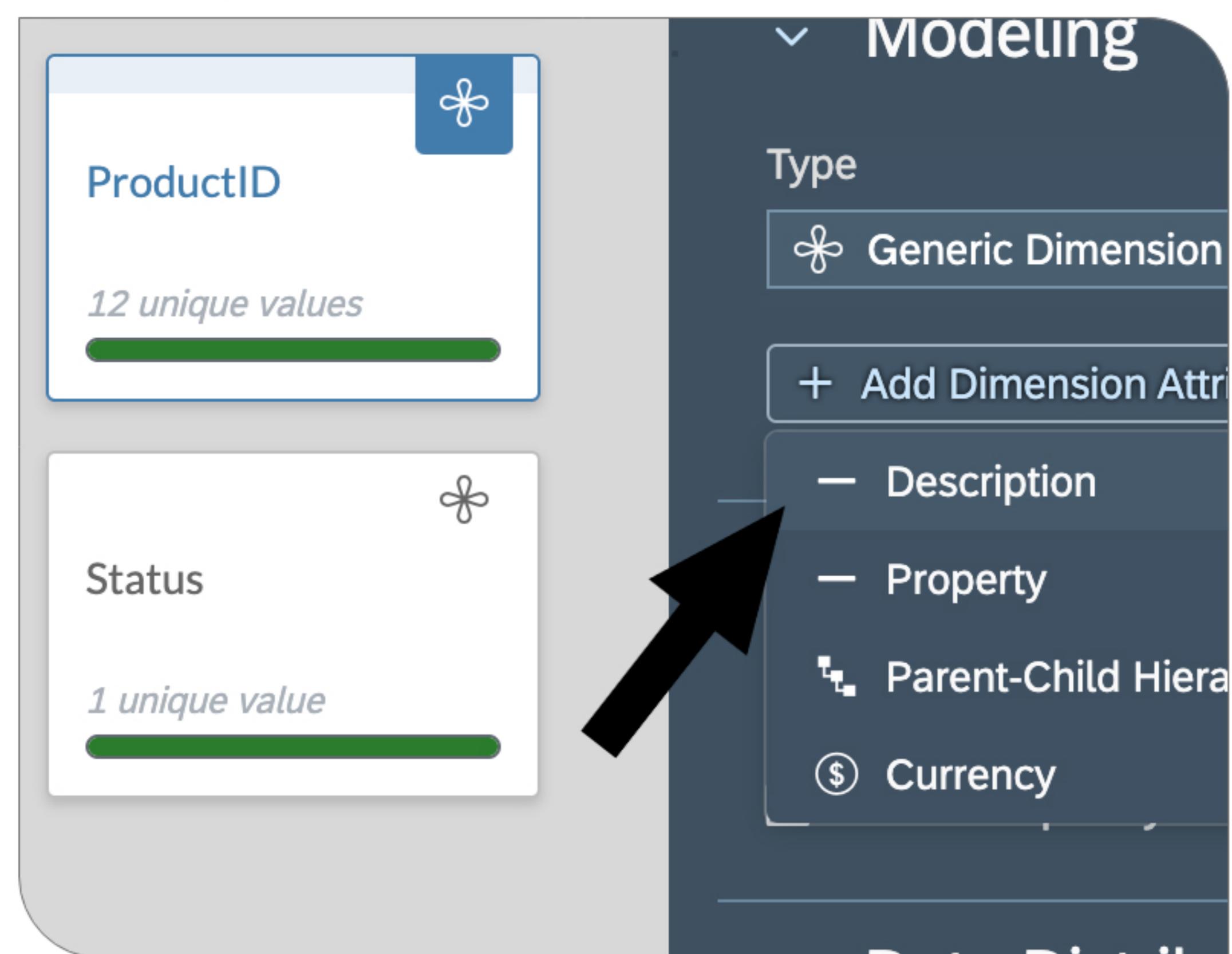


A screenshot of the SAP Modeler interface, specifically the 'New Model' screen. The top navigation bar includes the SAP logo, 'Modeler', 'New Model*', and various status indicators like 'Trial ends in 14 days' and 'Buy Now'. On the left is a vertical toolbar with icons for file operations, layout, display, actions, and model requirements. The main area is titled 'fond-rouge-data.xlsx' and displays a grid of 19 columns from the uploaded Excel file. Each column card provides summary statistics: OrderID (2000 unique values), Date (2018/10/16 - 2021/2/28), Year_Month (27 unique values), Country (11 unique values), City (13 unique values), Location_ID (13 unique values), Latitude (mean: 47.3041), Longitude (mean: 5.5958), ProductCategoryName (4 unique values), ProductID (12 unique values), Product (12 unique values), Quantity (mean: 5.448), Discount (mean: 2.7705), Price (mean: 54.0379), Status (1 unique value), Status_2 (2 unique values), Product_2 (12 unique values), Sentiment (10 unique values), and Class (2 unique values). A large black arrow points to the 'Display' icon in the top navigation bar. To the right of the data grid is a sidebar with sections for 'Model Requirements' (No issues detected), 'Model Information' (Data: fond-rouge-data.xlsx — File), and 'Model Options' (checkboxes for 'Enable Planning' and 'Fill empty ID cells with the "#" value'). At the bottom are 'Create Model' and 'Validate Data' buttons.

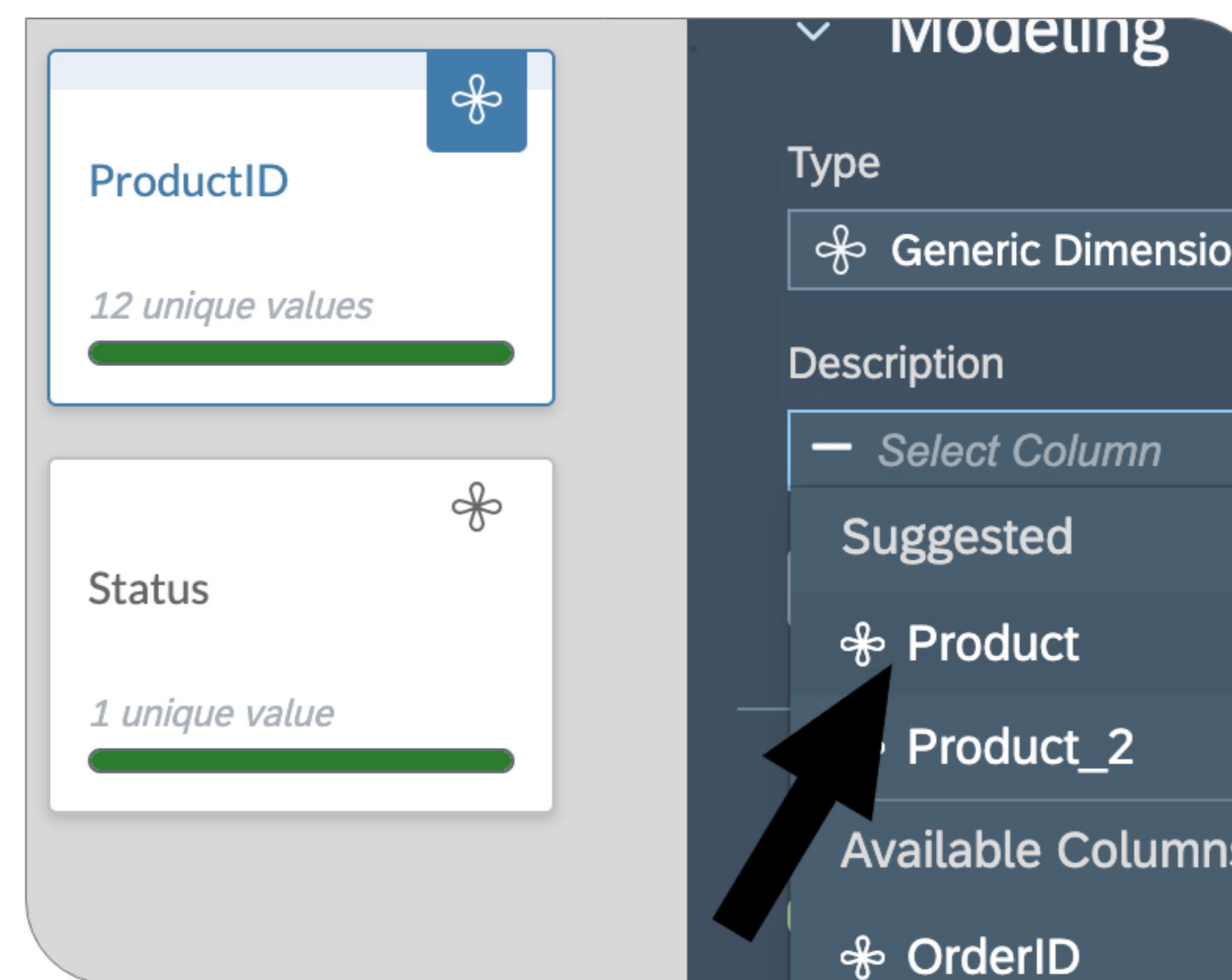
Data Wrangling: ID Descriptions

Let's start by assigning Description properties to ID columns that have one. In Fond Rouge's data, only ProductID has a description.

1. Select the ProductID card and click Add Dimension Attributes -> Description.



2. In the Description dropdown select the Product column.



Now ProductID is connected to Product via description attribute.

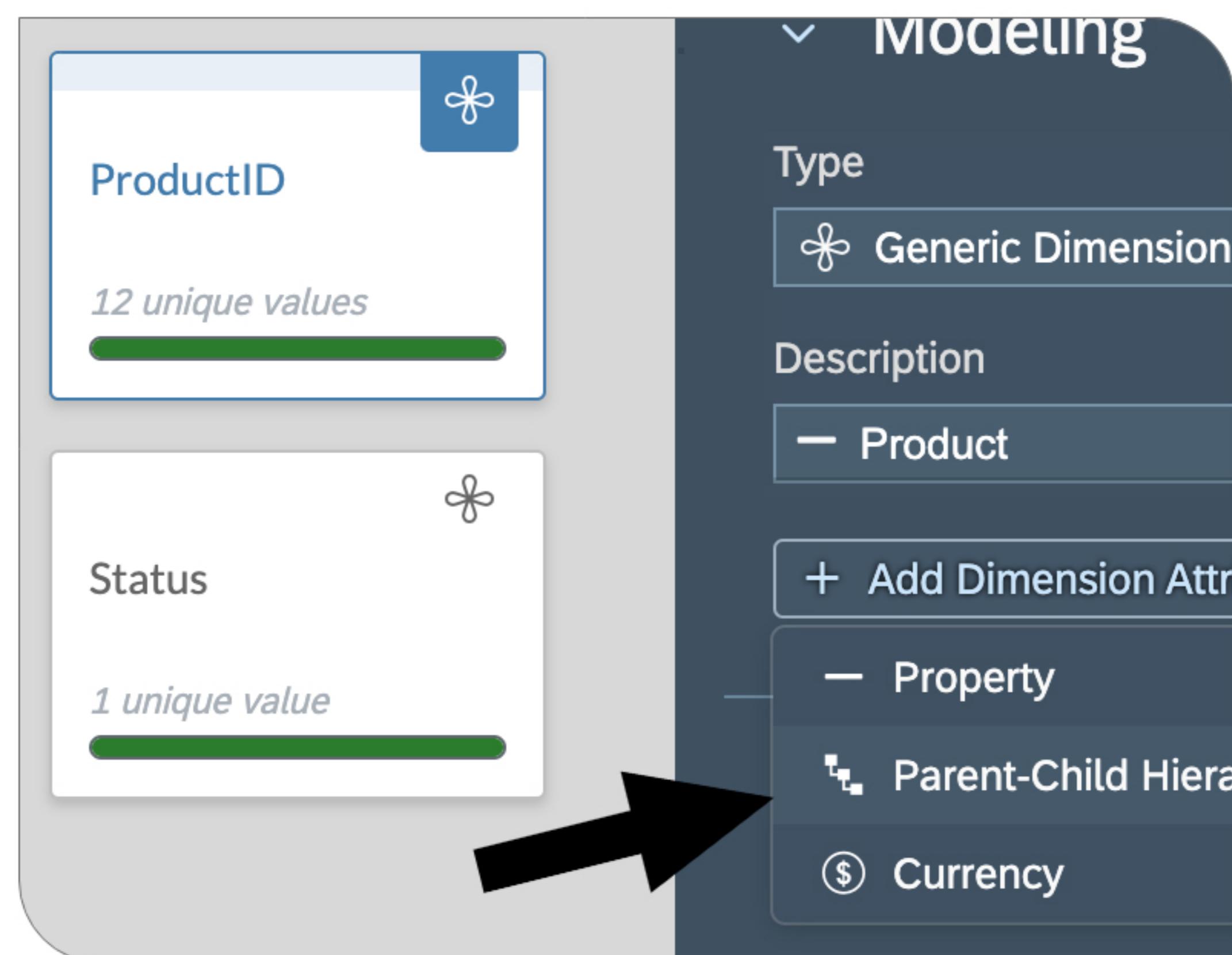
Data Wrangling: Hierarchies

We have 2 pairs of columns that can be connected in a parent-child hierarchy:

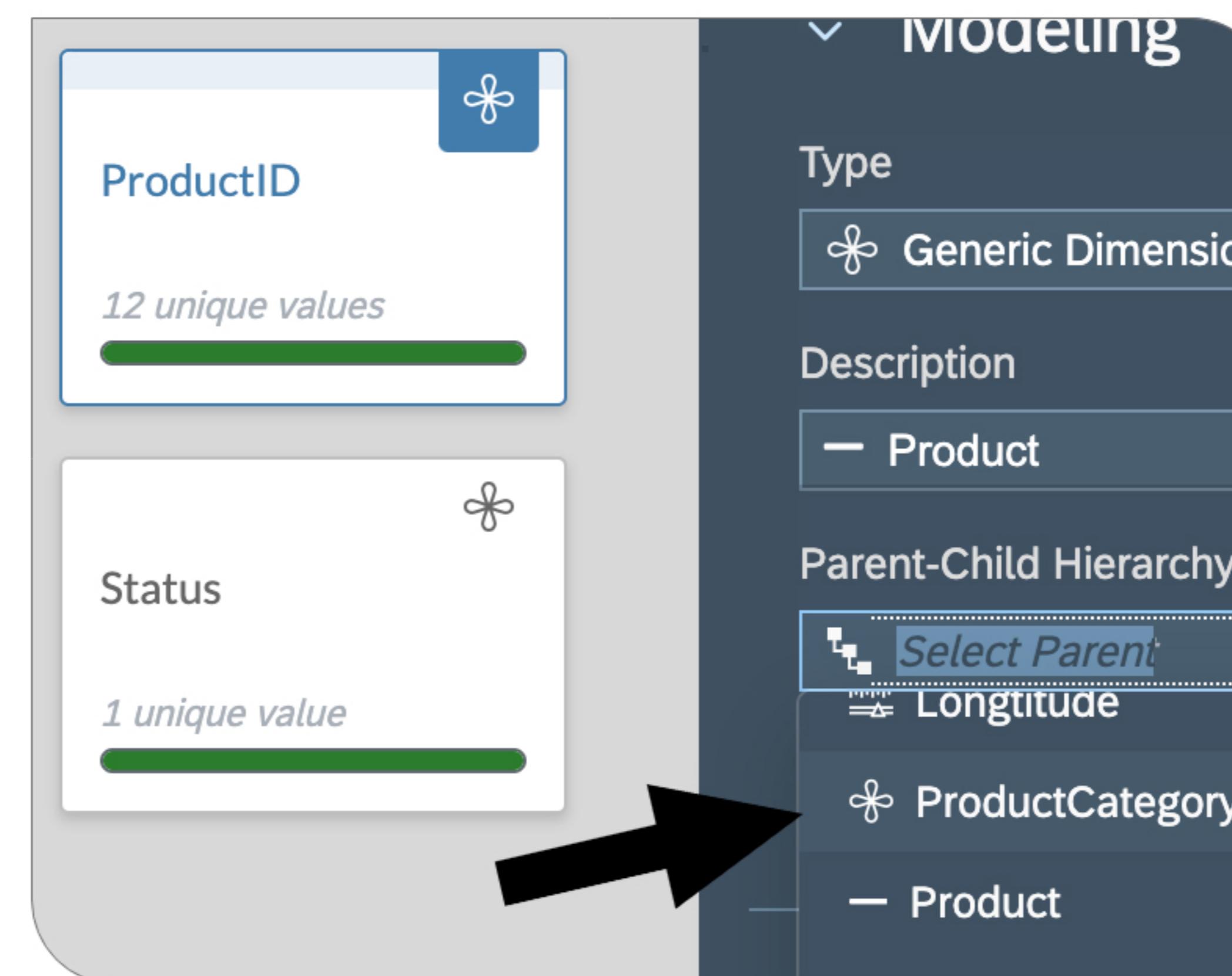
- ProductCategoryName -> ProductID
- Country -> City

Here is how to express that relationship between the first pair and you can do the 2nd pair on your own.

1. Select ProductID and click Add Dimension Attributes -> Parent-Child Hierarchy.



2. Choose ProductCategoryName from the dropdown.



Repeat the same process for the Country -> City.

NB!: expressing the connection is done on the child column (i.e. City points to the Parent - the Country).

Data Wrangling: Geo Enrichment

Having the Latitude and Longitude columns allows us to geo enrich our model and later be able to plot data on a map.

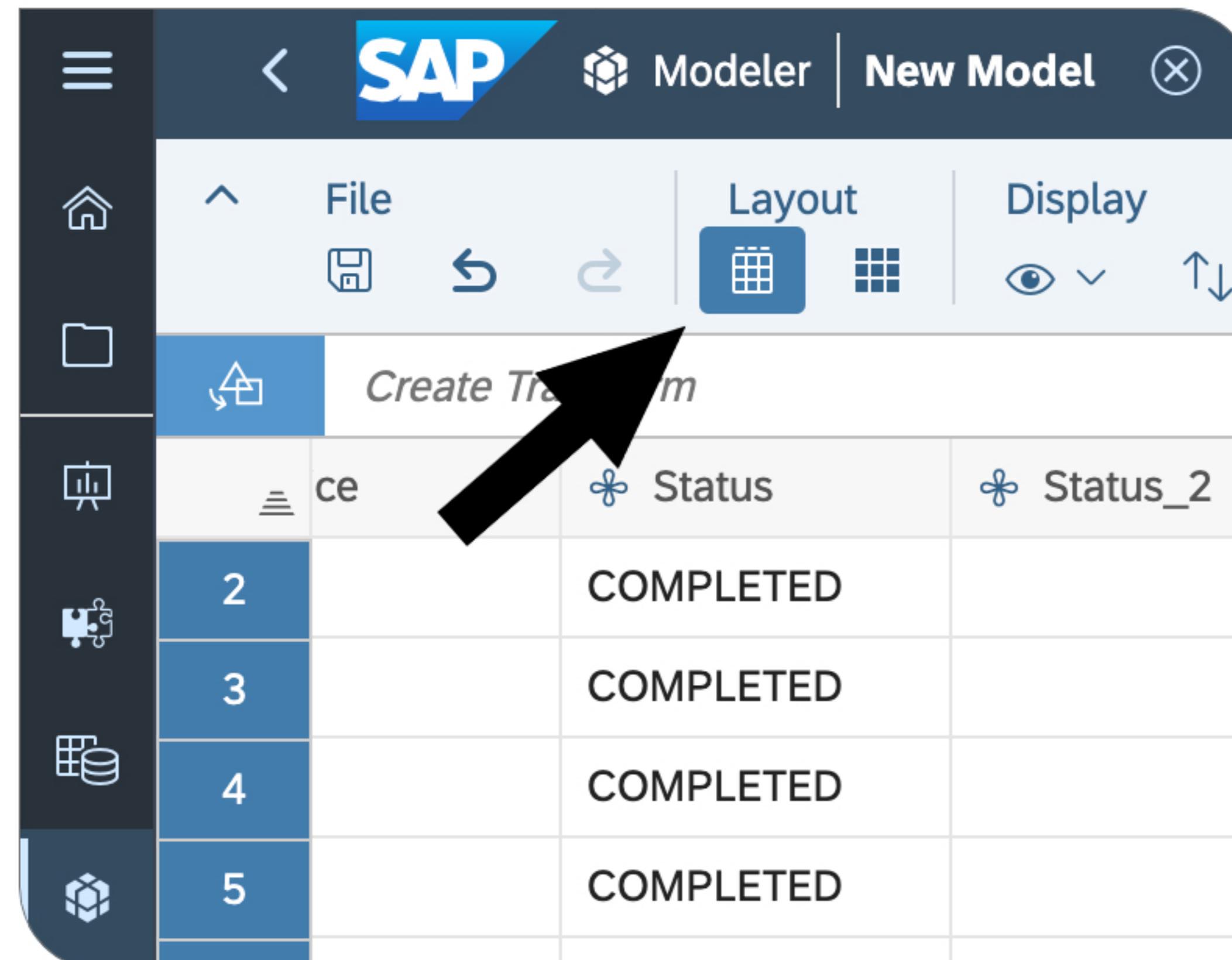
From the Actions toolbar - select Geo Enrich By -> Coordinates and fill out the form like this and click Create.

The screenshot shows the SAP Modeler interface with a dark theme. On the left is a sidebar with various icons for file operations, data exploration, and model management. The main workspace displays a grid of data columns from a file named "fond-rouge-data.xlsx". A large black arrow points from the text "From the Actions toolbar - select Geo Enrich By -> Coordinates" to the "Actions" toolbar at the top, which contains several icons for different operations. A modal dialog box titled "Geo by Coordinates" is open in the center. It contains fields for "Dimension Name" (set to "Location"), "Identifiers" (set to "Location_ID" under "Location ID" and "City" under "Location Description"), and "Coordinates" (set to "Latitude" and "Longitude"). At the bottom of the dialog are "Create" and "Cancel" buttons. To the right of the dialog, the file details show 9,450 rows uploaded, 19 columns, 12 dimensions, and 5 measures. Below this are sections for "Model Requirements" (no issues detected) and "Model Information" (listing the uploaded file multiple times). Under "Model Options", there are checkboxes for "Enable Planning" (unchecked) and "Fill empty ID cells with the '#' value" (checked). The "Default Currency for Model" is set to "USD". At the bottom right are "Create Model" and "Validate Data" buttons.

Data Wrangling: Merge Columns

At this point, there should be 2 Status columns (Status and Status_2). We have to find a way to merge the 2nd into the first, so only the returned orders change their Status to RETURNED. For this job we will use the **Replace Smart Transform** with a **Where clause**.

1. Go back to Table View.

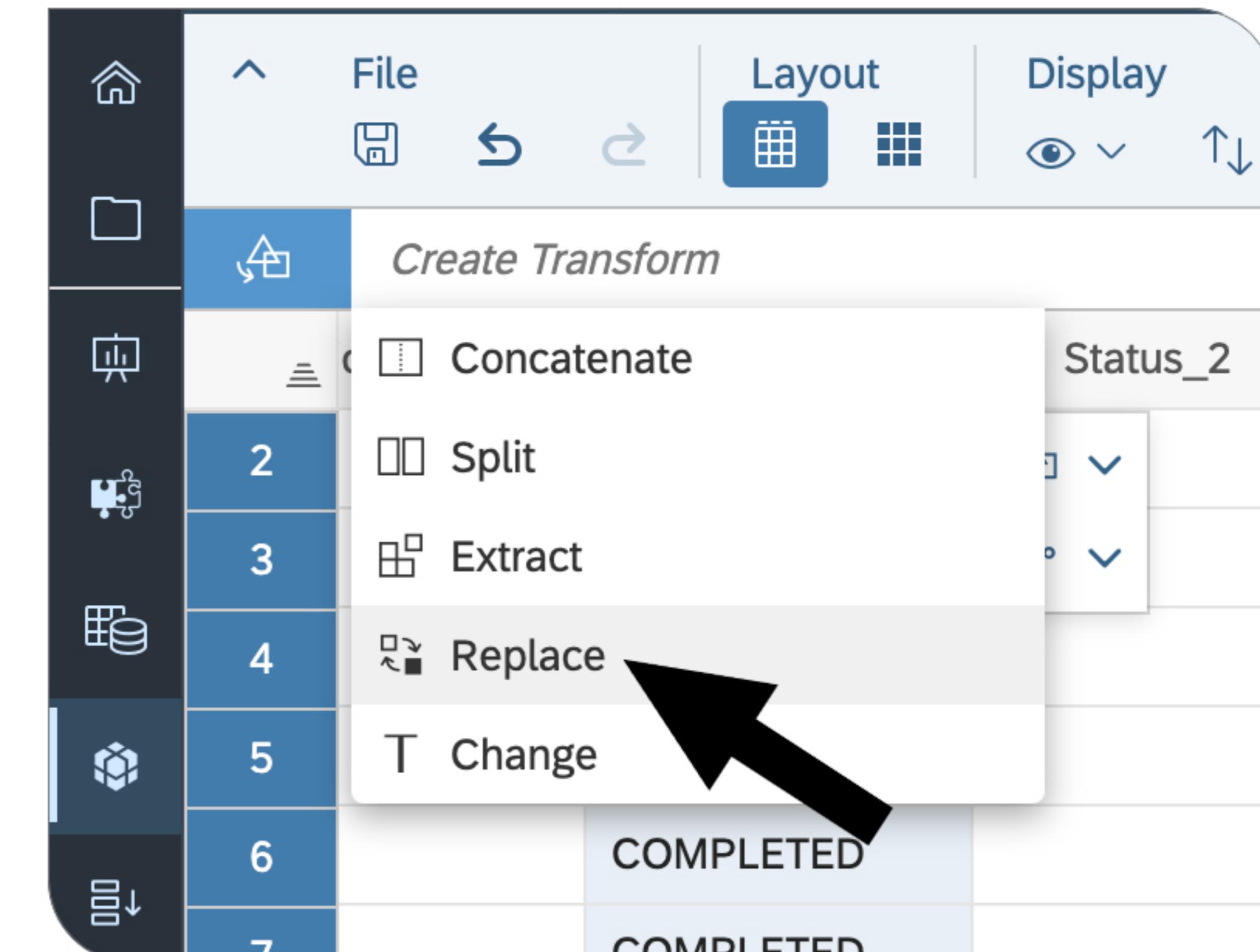


2. Select the main Status column

Create Transform

ce	Status	Status_2
2	COMPLETED	 
3	COMPLETED	 
4	COMPLETED	
5	COMPLETED	
6	COMPLETED	
7	COMPLETED	
8	COMPLETED	
9	COMPLETED	

3. From the menu: Create a Transform -> Replace.



4. Write the following query (Zoom-in to read the top line). If the full line isn't visible - close the main menu.

Replace cell in [Status] matching "COMPLETED" with "RETURNED" where [Status_2] is "RETURNED"

ce	Status	Status_2	Product_2	Sentiment	Class	Location
	COMPLETED	COMPLETED	Cecile	85	POS	50.850346,4
	COMPLETED	COMPLETED	Eloise	92	POS	50.850346,4
	COMPLETED	COMPLETED	Denis	84	NEU	50.850346,4
	COMPLETED	COMPLETED	Cecile	84	NEU	50.850346,4
	COMPLETED	COMPLETED	Eloise	92	POS	50.850346,4
	RETURNED	RETURNED	Amélie	89	POS	50.850346,4
	COMPLETED	COMPLETED	Bridgette	84	NEU	50.850346,4
	COMPLETED	COMPLETED	Claudette	89	POS	50.850346,4
	COMPLETED	COMPLETED	Adele	88	POS	50.850346,4
	COMPLETED	COMPLETED	Bella	86	POS	50.850346,4
	COMPLETED	COMPLETED	Danielle	85	POS	50.850346,4
	COMPLETED	COMPLETED	François	86	POS	50.850346,4
	COMPLETED	COMPLETED	Amélie	89	POS	50.850346,4
	COMPLETED	COMPLETED	Bella	86	POS	50.850346,4
	COMPLETED	COMPLETED	François	86	POS	50.850346,4
	COMPLETED	COMPLETED	Claudette	92	POS	50.850346,4
	COMPLETED	COMPLETED	Bridgette	88	POS	50.850346,4
	COMPLETED	COMPLETED	Francois	83	NEU	50.850346,4

5. Press Enter/Return to execute and afterwards ensure only the returned orders changed Status.

Price	Status	Status_2
70.00	COMPLETED	
80.95	COMPLETED	
58.95	COMPLETED	
78.56	COMPLETED	
80.95	COMPLETED	
40	RETURNED	RETURNED
39.95	COMPLETED	
102.95	COMPLETED	
25.00	COMPLETED	

6. Delete the Status 2 column.

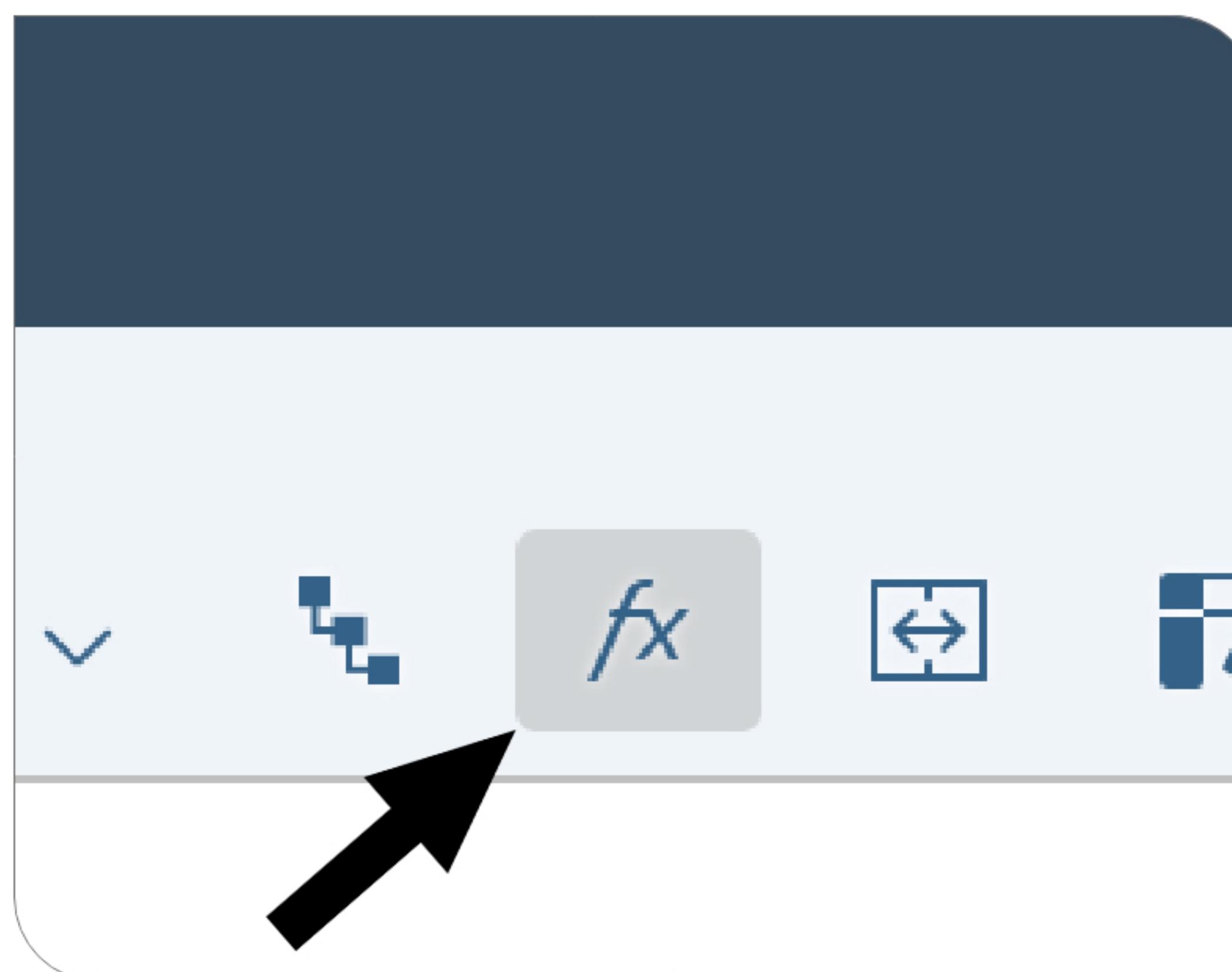
Status_2	Product_2	Sentiment
RETURNED	Eloise	83
	Amélie	82
	Bridgette	84
	Claudette	89

The other column you would want to delete is Product_2.

Data Wrangling: Computed Columns

We need to create a couple of columns that get derived from the rest of the data. Namely, we need to add Revenue & Refund. As you type the name of columns you get suggestions for autocomplete.

1. [Revenue] Click on the Calculated Columns tool.



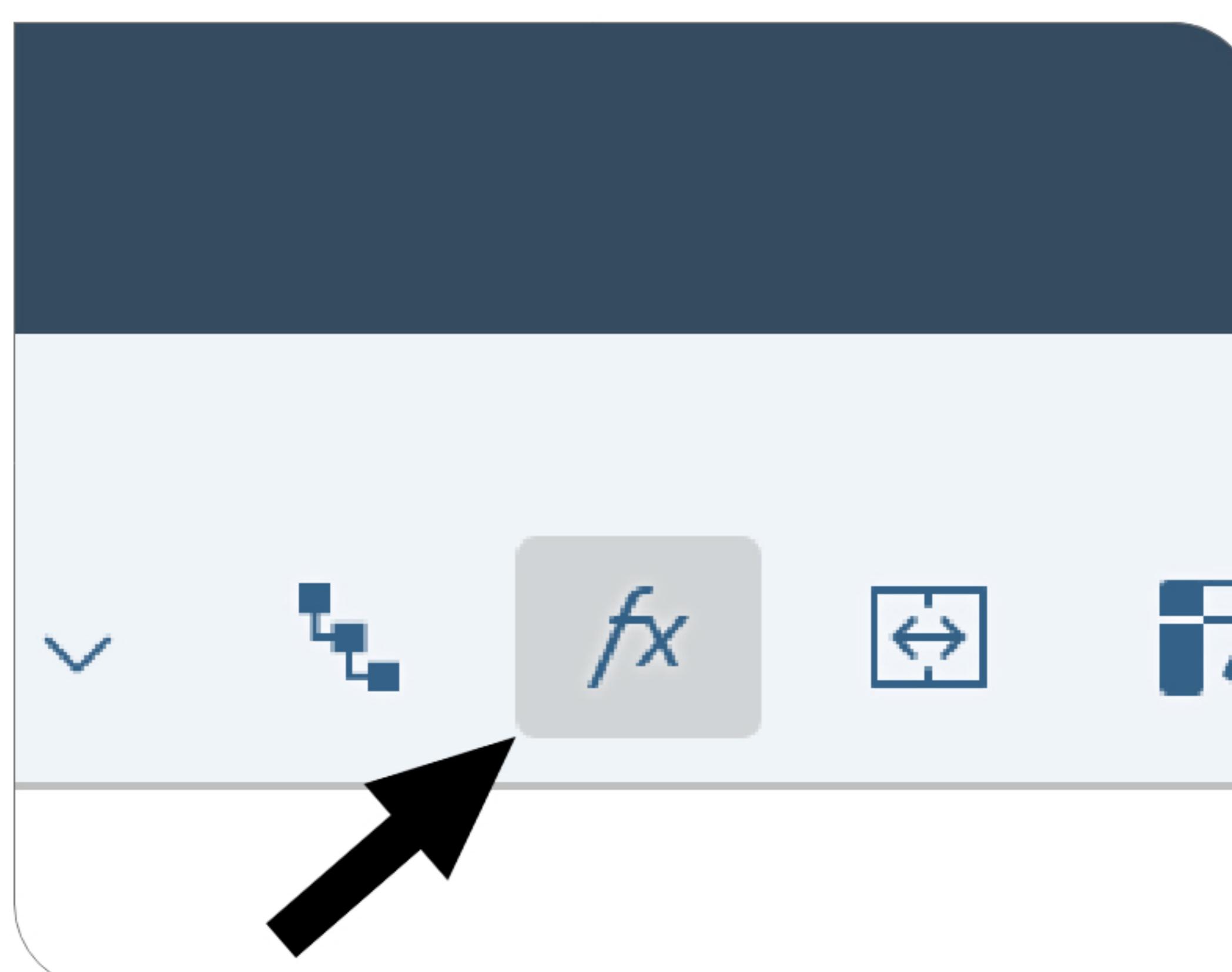
2. Fill the name of column and write down this formula.

Name	Revenue
Edit Formula <small>?</small>	
1	[Price] * [Quantity] - [Discount]

3. Press OK to save the column.

z2 Revenue	fx
398.63	
76.23	
143.05	
413.27	
566.2	

4. [Refund] Click again on the Calculated Columns tool.



5. Fill the name of column and write down this formula.

Name	Refund
Edit Formula <small>?</small>	
1	IF ([Status] = "RETURNED" ,
2	[Revenue] ,
3	0
4)

6. Press OK to save the column.

z2 Refund	fx
0	
0	
409.06	
36.28	
0	

Data Wrangling: Column Types

Most of the time SAC will do a good-enough job at guessing the right types of your columns, but sometimes you will have to manually assign whether something is a measure or a dimension and what's the exact type of it. For example - the Year_Month is actually a Date and not a Generic Dimension. Here is how to change it. After you go back to card view:

1. Select the Year_Month card.

2. In the Designer popover select the Date Type.

3. The icon of the card changes while the data quality bar stays green.

Here are the other columns needing a change of type:

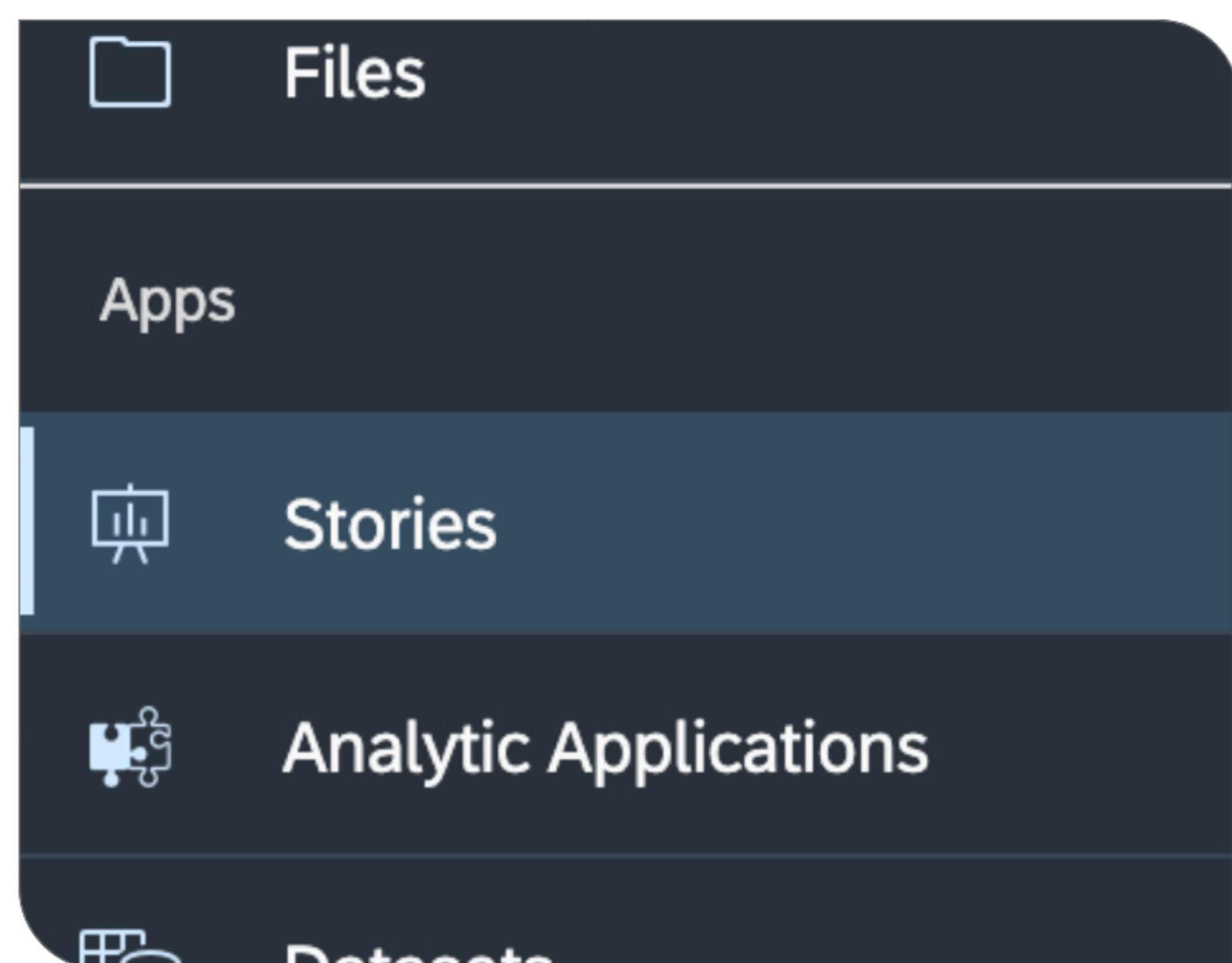
- Latitude & Longitude: Should be (Generic) dimensions not measures.
- Sentiment: Should be a measure.

Now you are ready to create the Model! Press Create Model (there may be a 2nd confirmation you need to give for the creation of the model) and if there aren't any issues with your data - you will choose a location for your new model and you are done with this long first phase! You can name it something as simple as "Model". Make sure to remember where in your Files you've saved it, as we will need to later find it and link it to the SAC Story we are going to build.

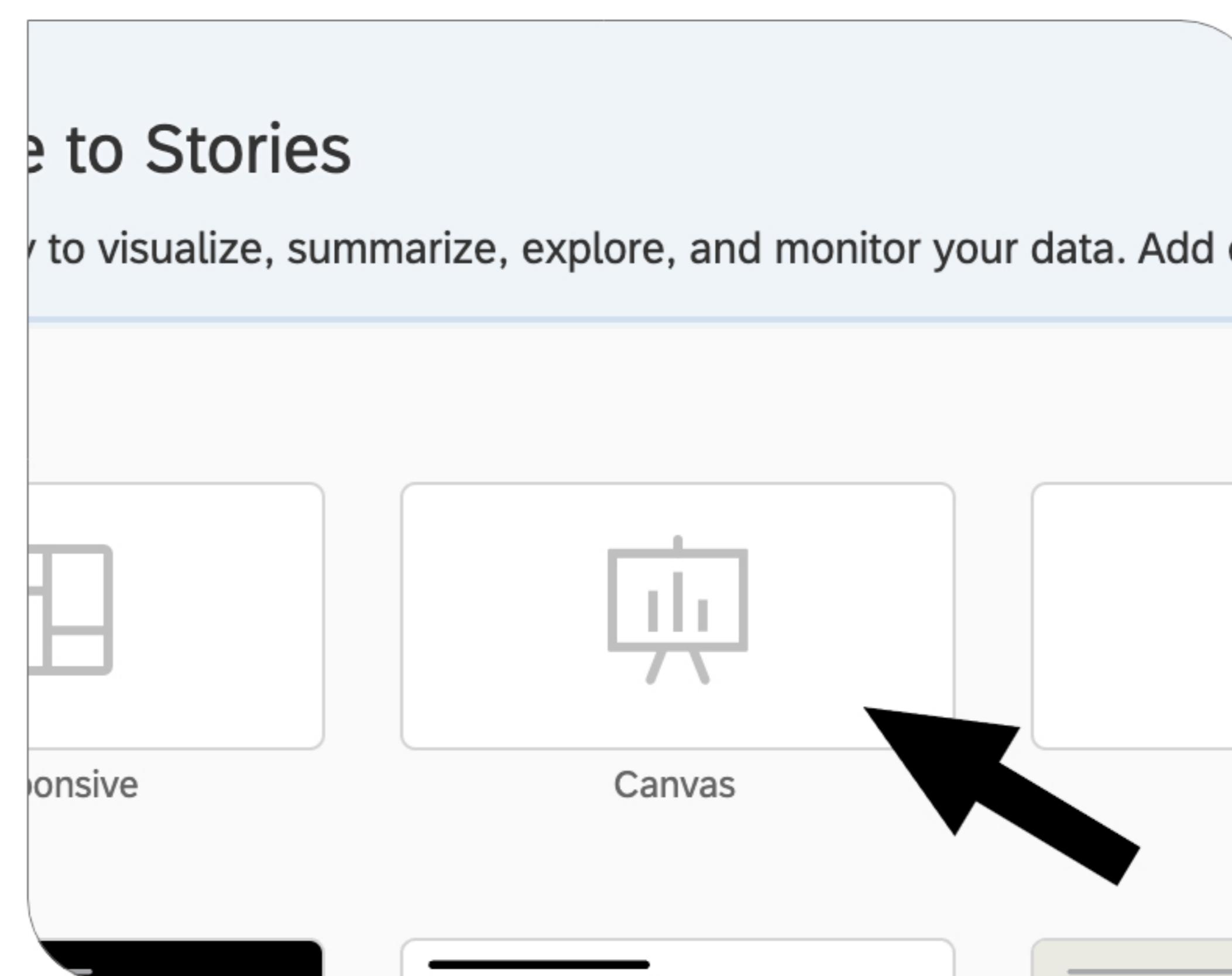
Building a Story

Let's create a story for Fond Rouge's data analysis.

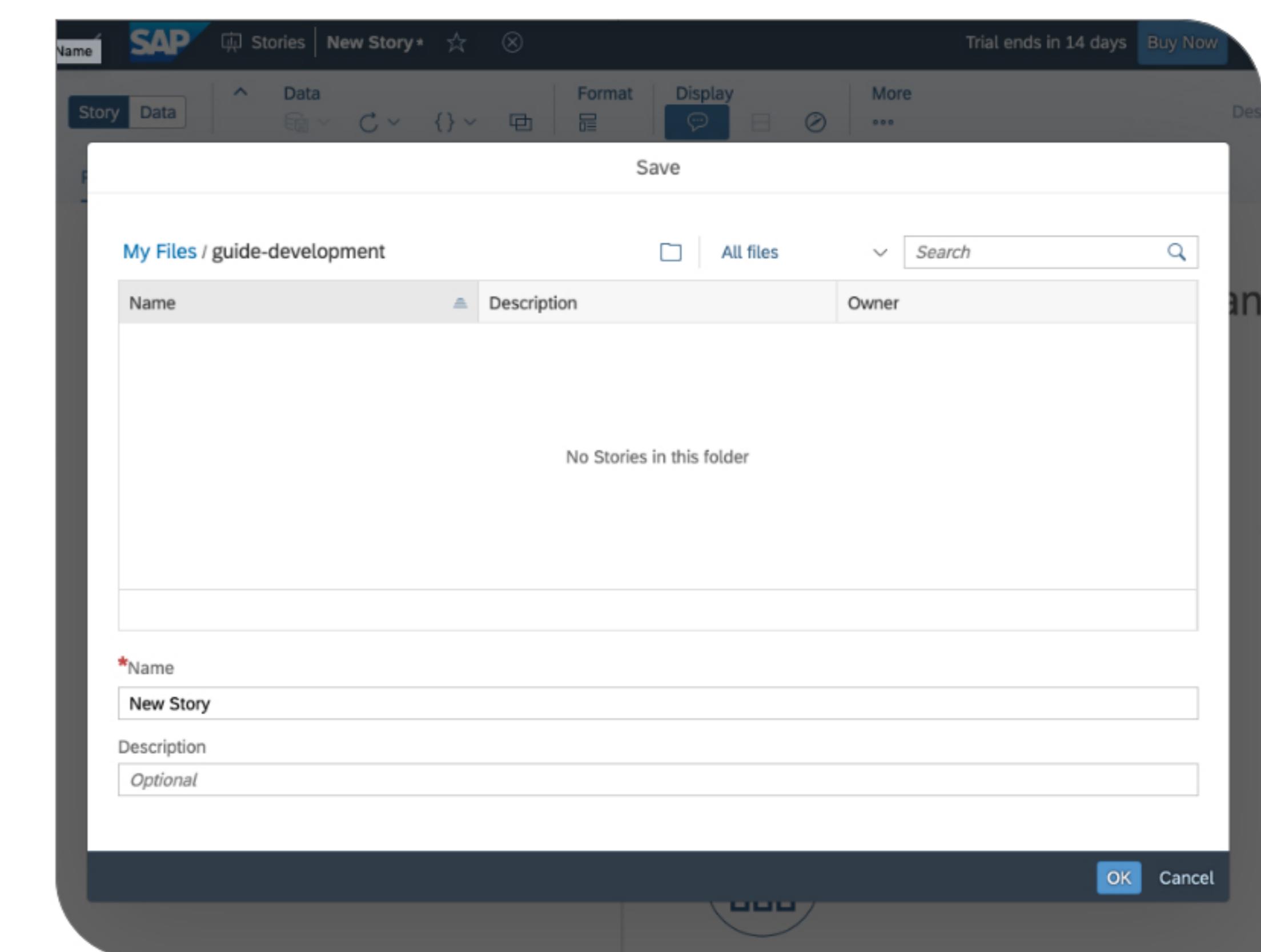
1. Go to Stories in the main menu of SAC (far left).



2. Select the Canvas template.



3. Ctrl/Cmd + S to save the story. Place the story in the same directory you put your model in.

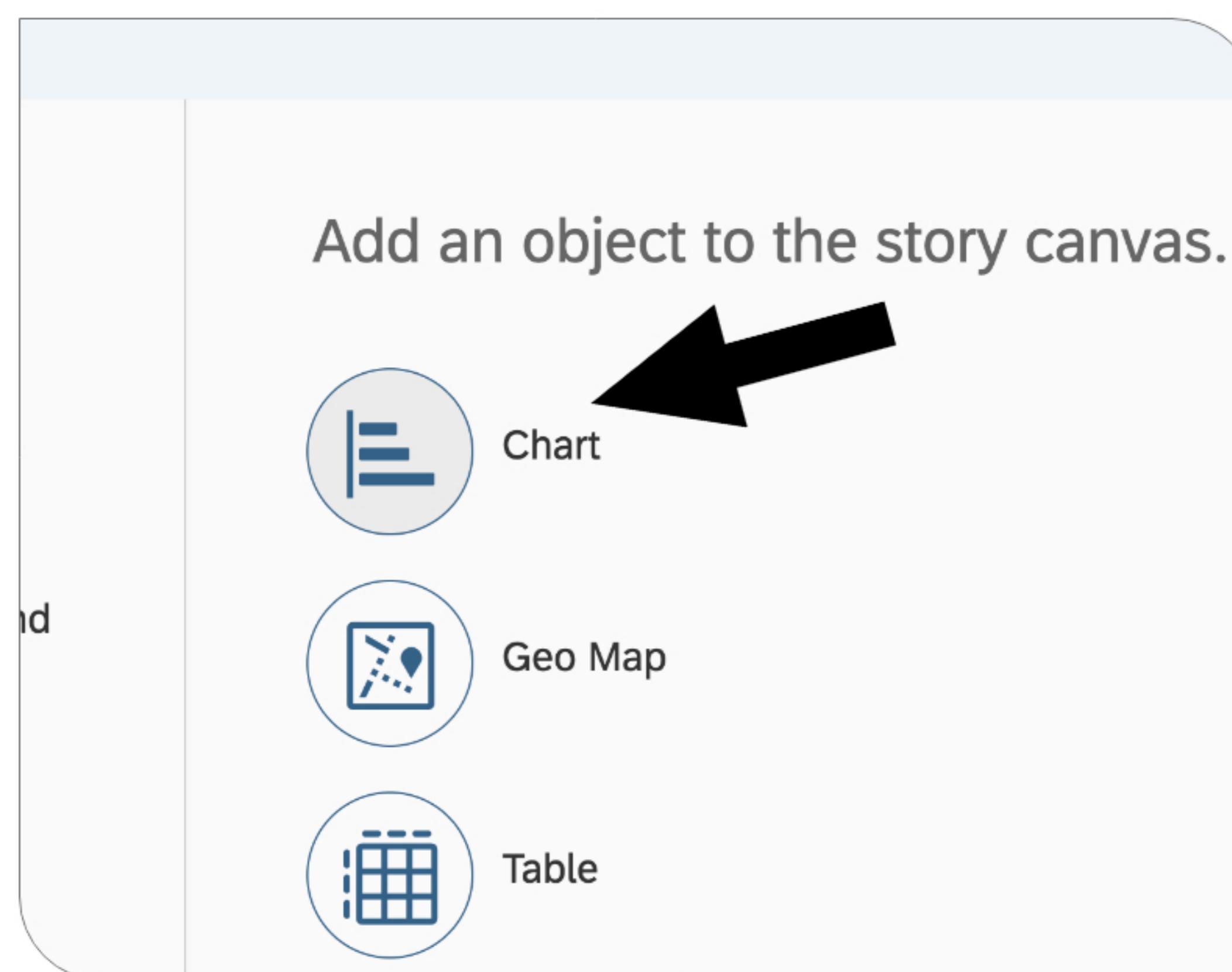


When choosing a location for the story, the model will not be visible in the dialog because it's from a different type - it's Model and not a Story. Now we can add our first chart and link the story to the model we created earlier.

Building a Story: Chart [Column & Line]

The first chart we will create is: [Column & Line] Revenue & Refund per country.

1. Add chart to the canvas.



2. Browse-to & select Model.

Name	Description
Model	-

3. Select the Column & Line Comparison.

Chart Structure

- Comparison
- Trend
- Distribution

Comparison

- Bar/Column
- Combination Column & Line
- Combination Stacked Column & Line
- Stacked Bar/Column
- Waterfall

At least 1 Measure required

4. Select Revenue as a Measure for the bars.

Measures

Column Axis

! At least 1 Measure required

Search

- Price
- Quantity
- Refund
- Revenue
- Sentiment

+ Create Measure Input Control...

Expand List...

5. Select Refund as a Measure for the line.

Line Axis

Search

ACCOUNT

- Discount
- Price
- Quantity
- Refund
- Revenue

Expand List...

6. Select City as Dimension and ensure Level 1 (Country) is selected.

Dimensions

City

+ Add Dimension

Set Hierarchy...

Color

Measures

- Member
- Revenue
- Refund

Choose Level

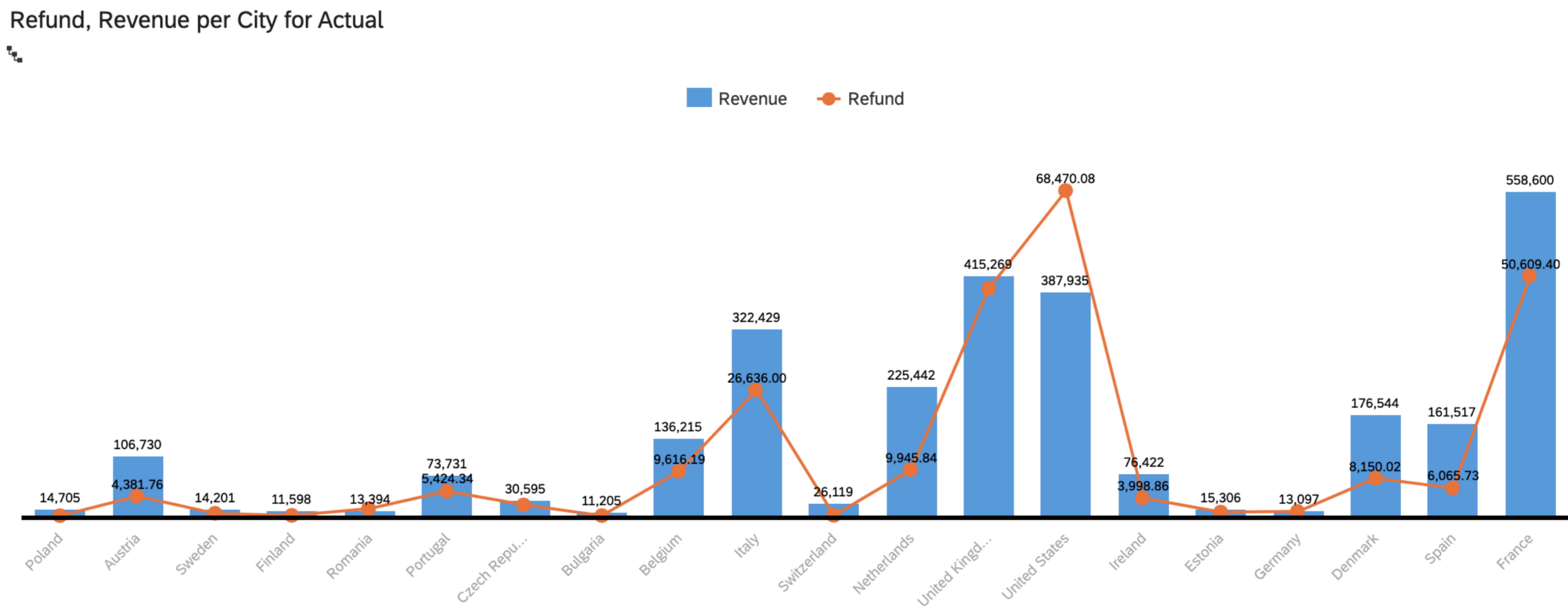
- Default
- Level 1
- Level 2

+ Add Dimension

Include Parent Levels

Building a Story: Chart [Column & Line]

The (unsorted) chart can look different in terms of country order, but you should see the same data for each country:

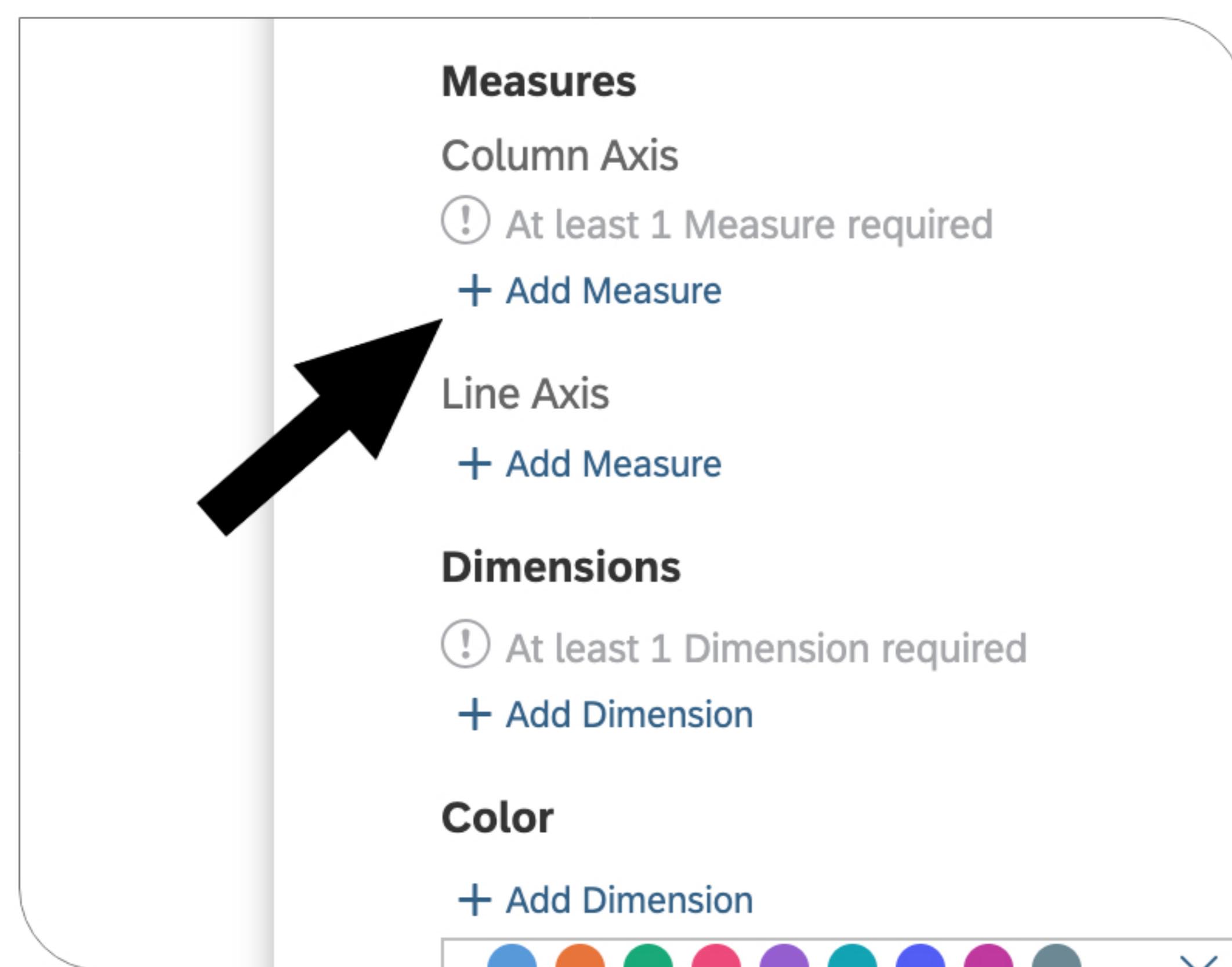


Remember to often press the Save button in the toolbar (or Ctrl/Cmd+S) to preserve your progress.

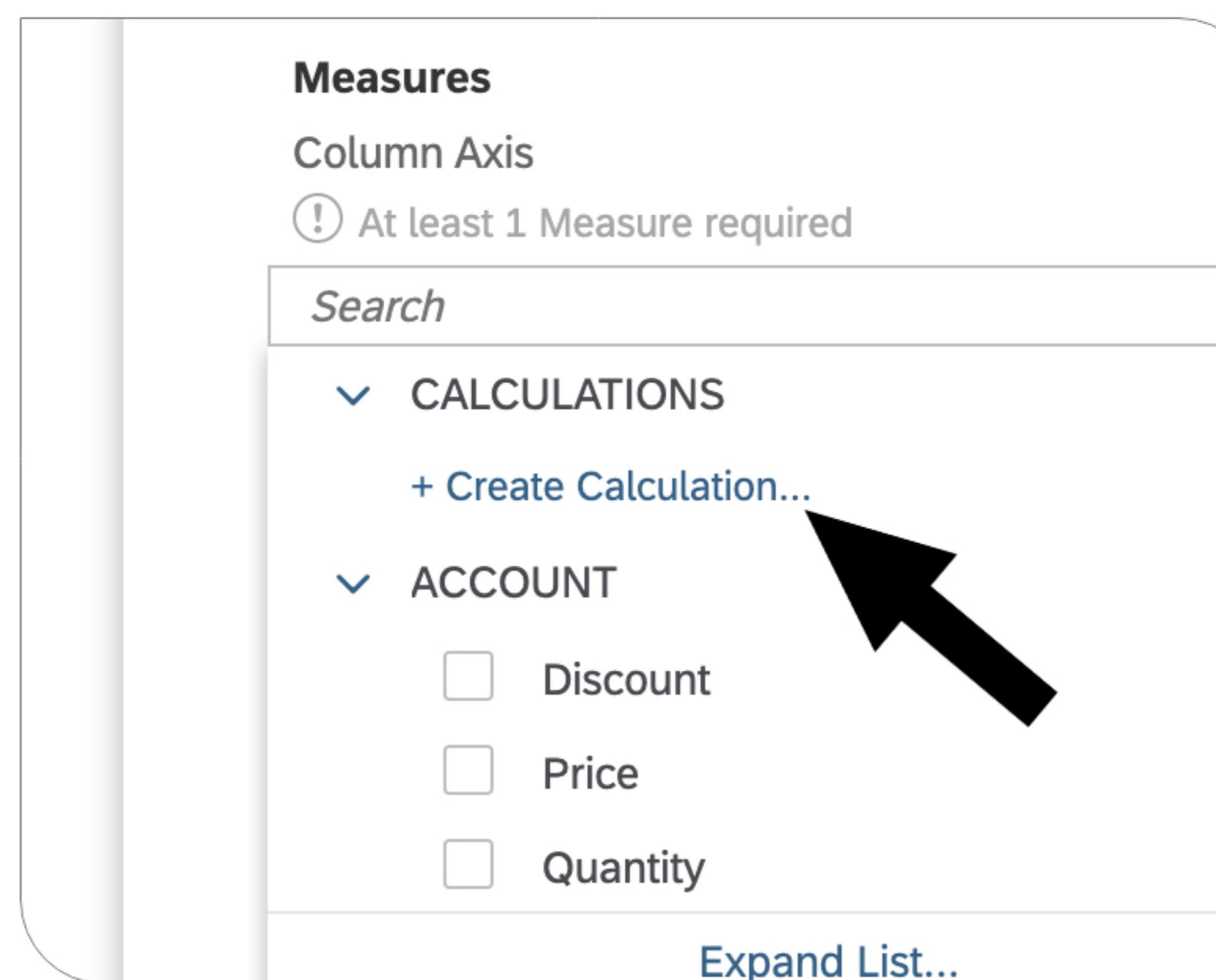
Building a Story: Calculated Measures

There are 2 calculated measures you need to create that will be used for some of the charts to be built - the **Refund/Revenue ratio** and **Avg. Sentiment**. Let's create both in a single chart - [Column & Line] Refund/Revenue & Avg Sentiment per US city. From the Toolbar -> Insert -> Chart (If it's not visible - find it under the last toolbar item named "More") -> select the Column & Line chart type once again.

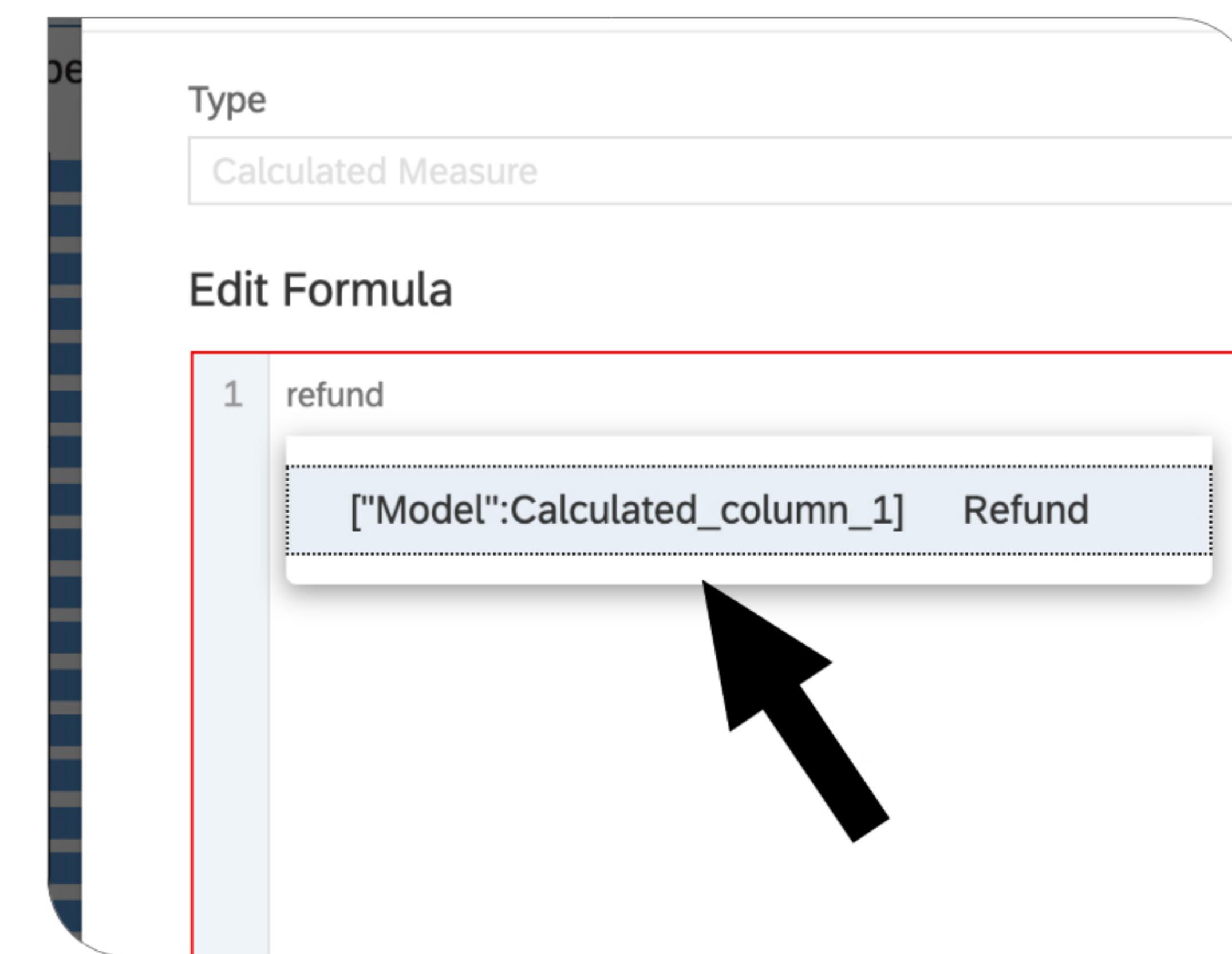
- 1. [Refund/Revenue] Add Column Axis Measure.**



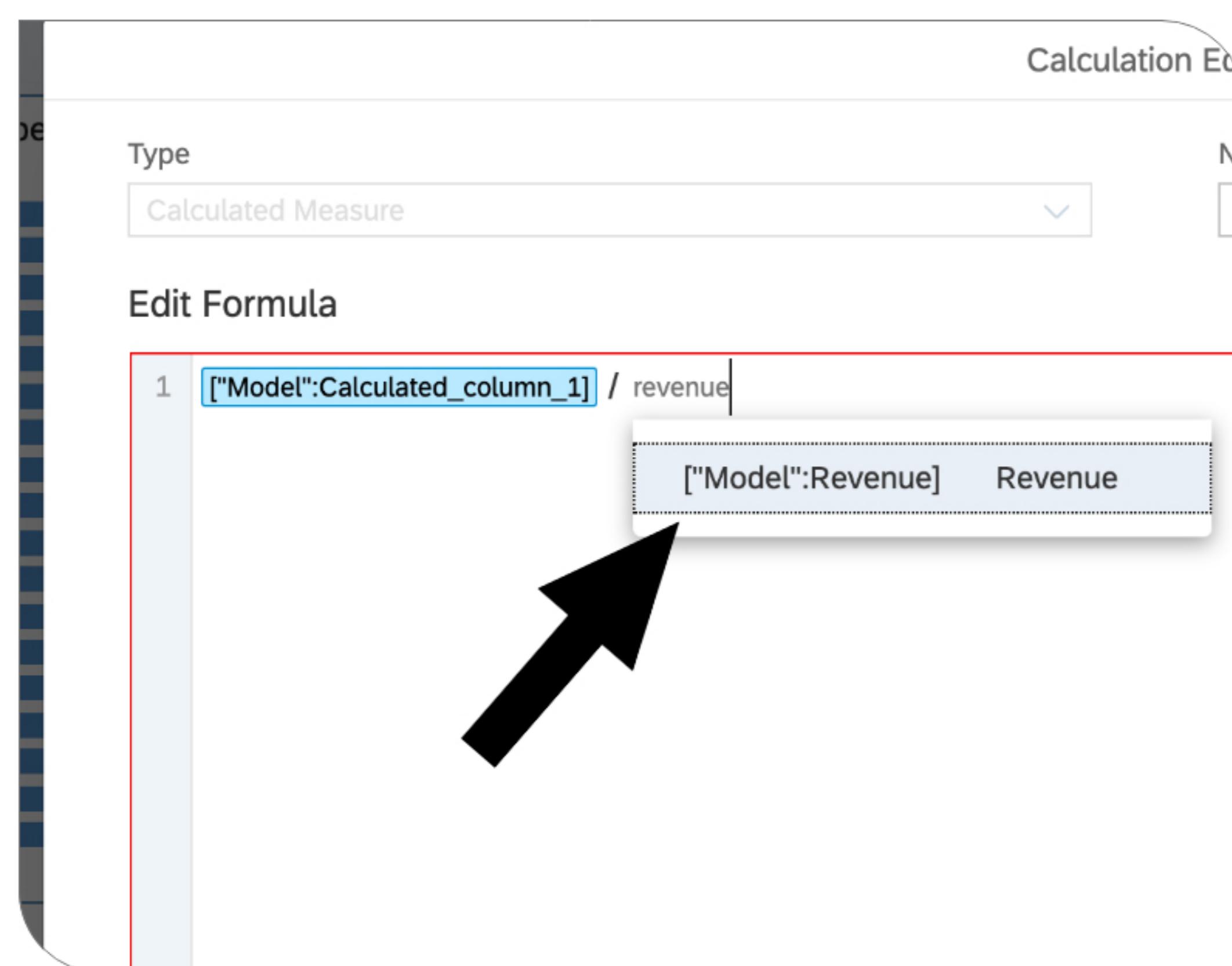
- 2. Click “+ Create Calculation”.**



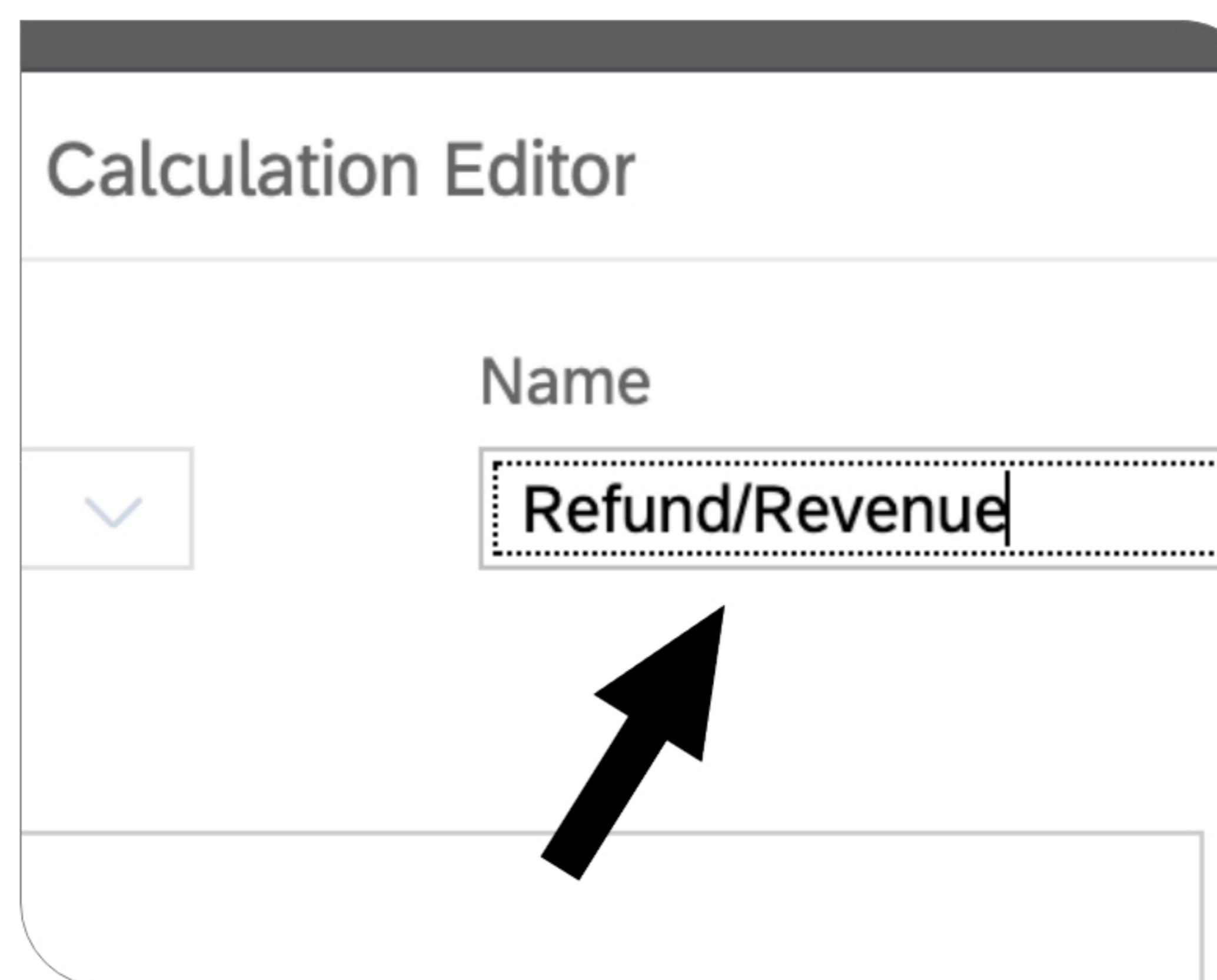
- 3. Type “refund” in the text area -> select the suggested item in the autocomplete menu that shows up.**



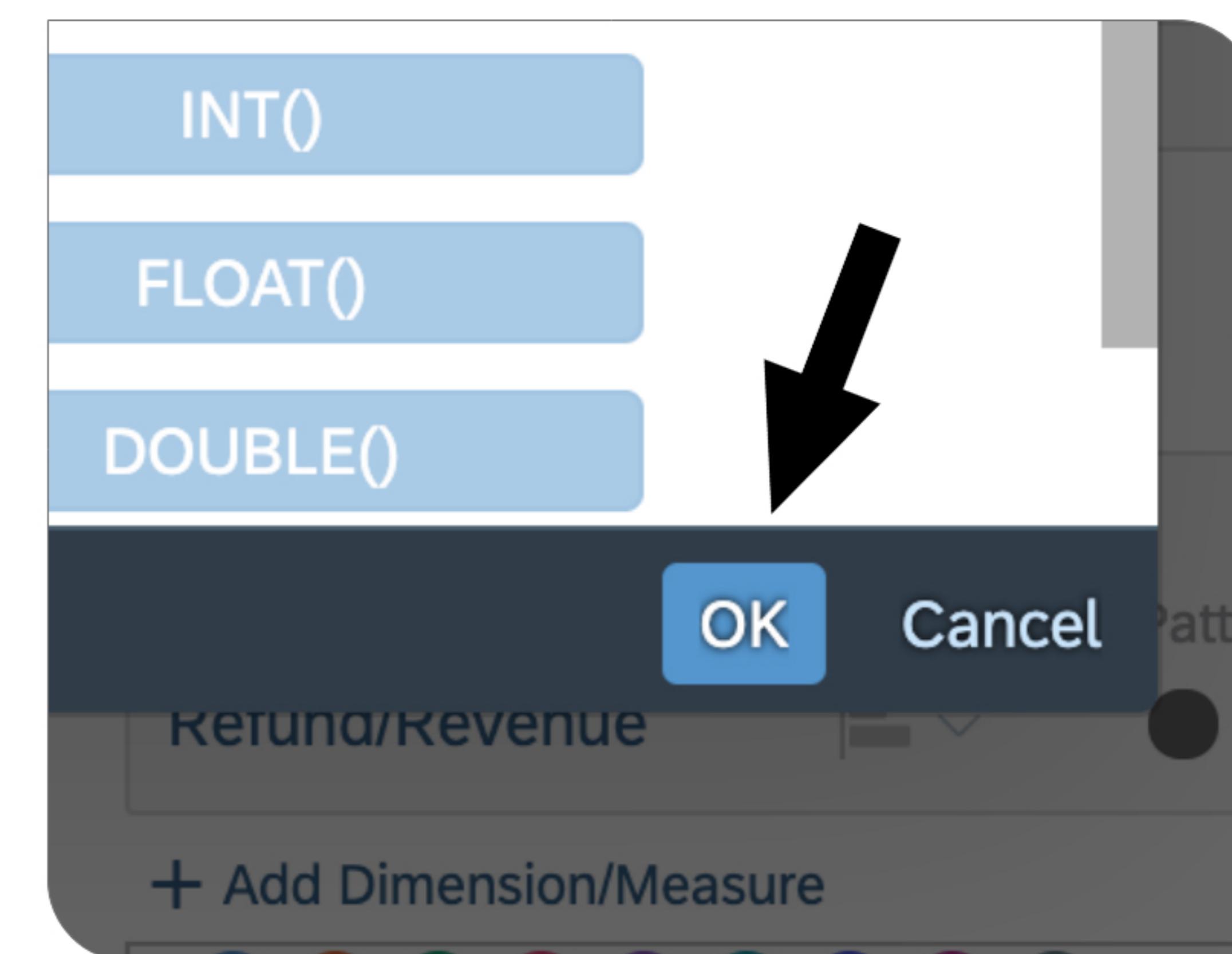
- 4. Type “/ revenue” and select the suggested item.**



- 5. Name the Measure “Refund/Revenue”.**



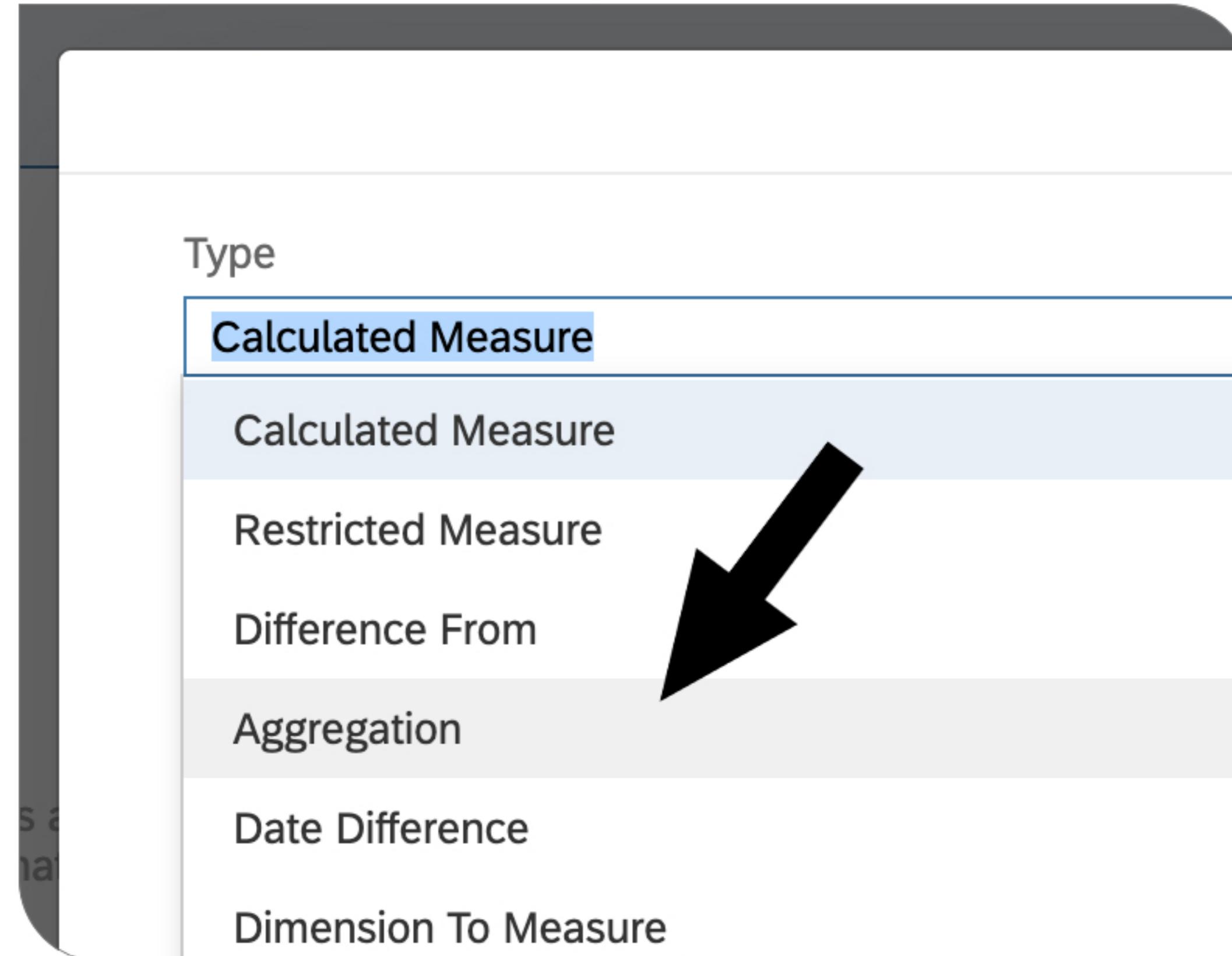
- 6. Press OK to save the measure.**



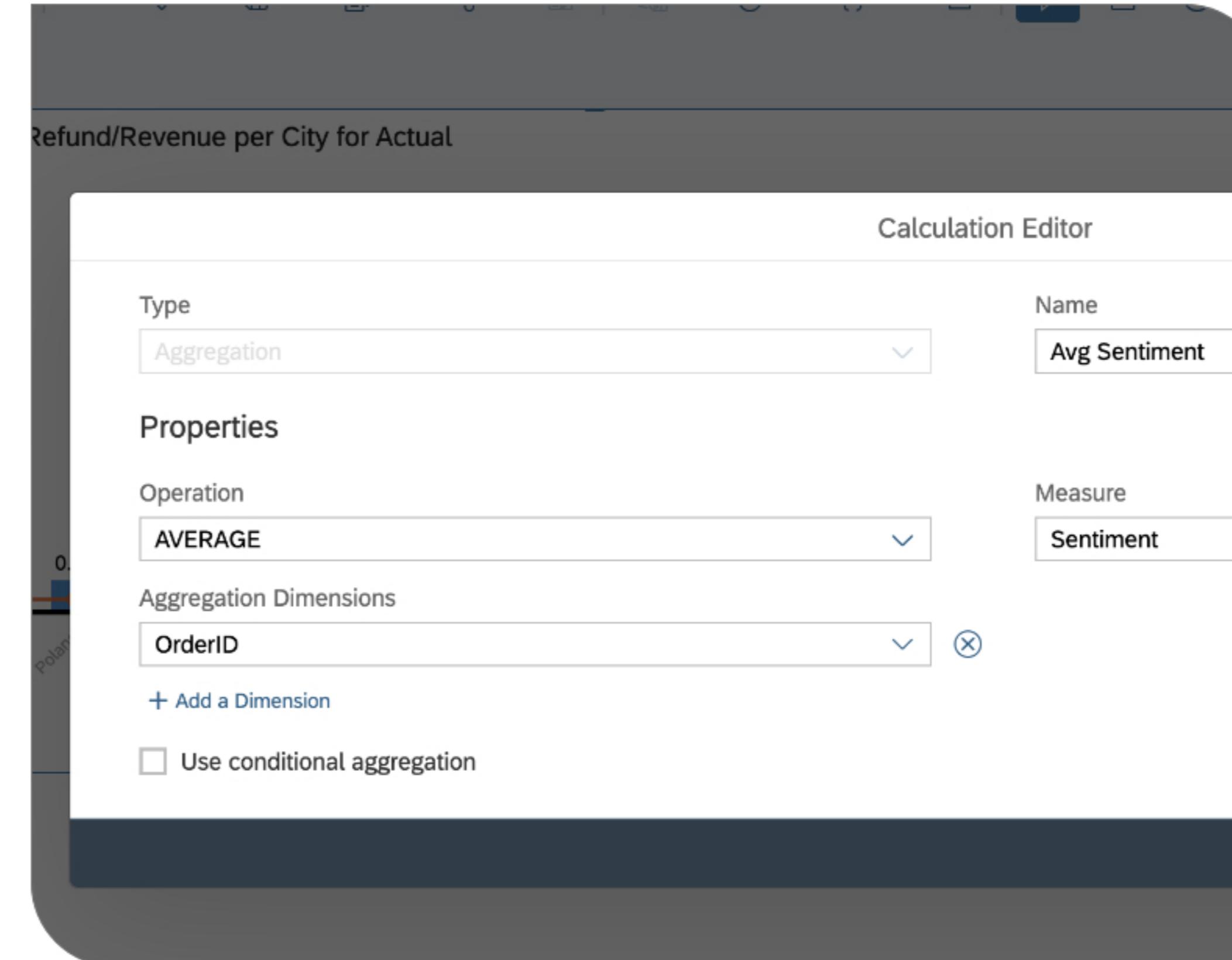
Building a Story: Calculated Measures

Now let's add the **Avg. Sentiment** and filter by location (US Cities only).

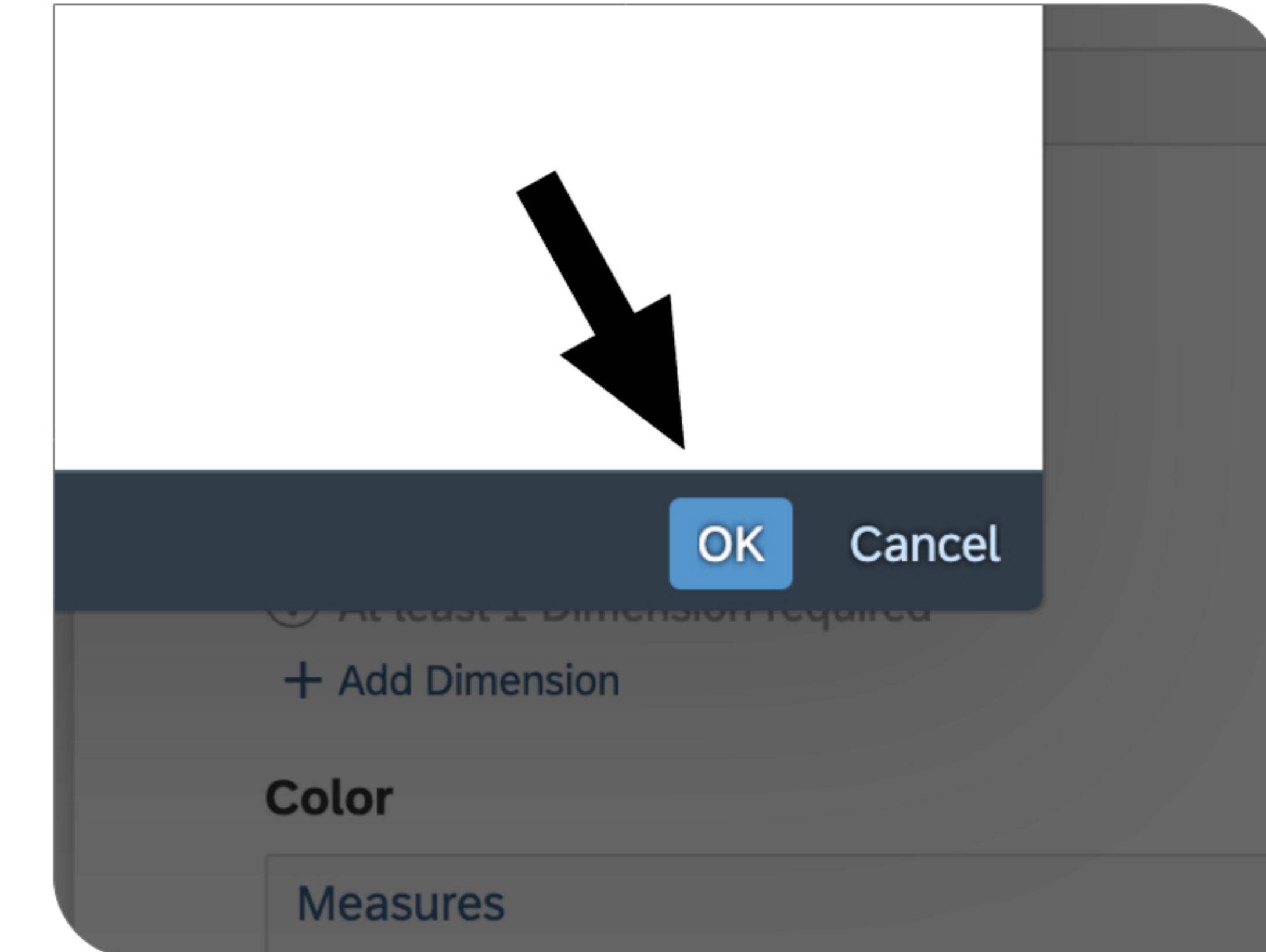
- [Avg. Sentiment] Add Line Axis Measure -> + Create Calculation. Change the Type to Aggregation.**



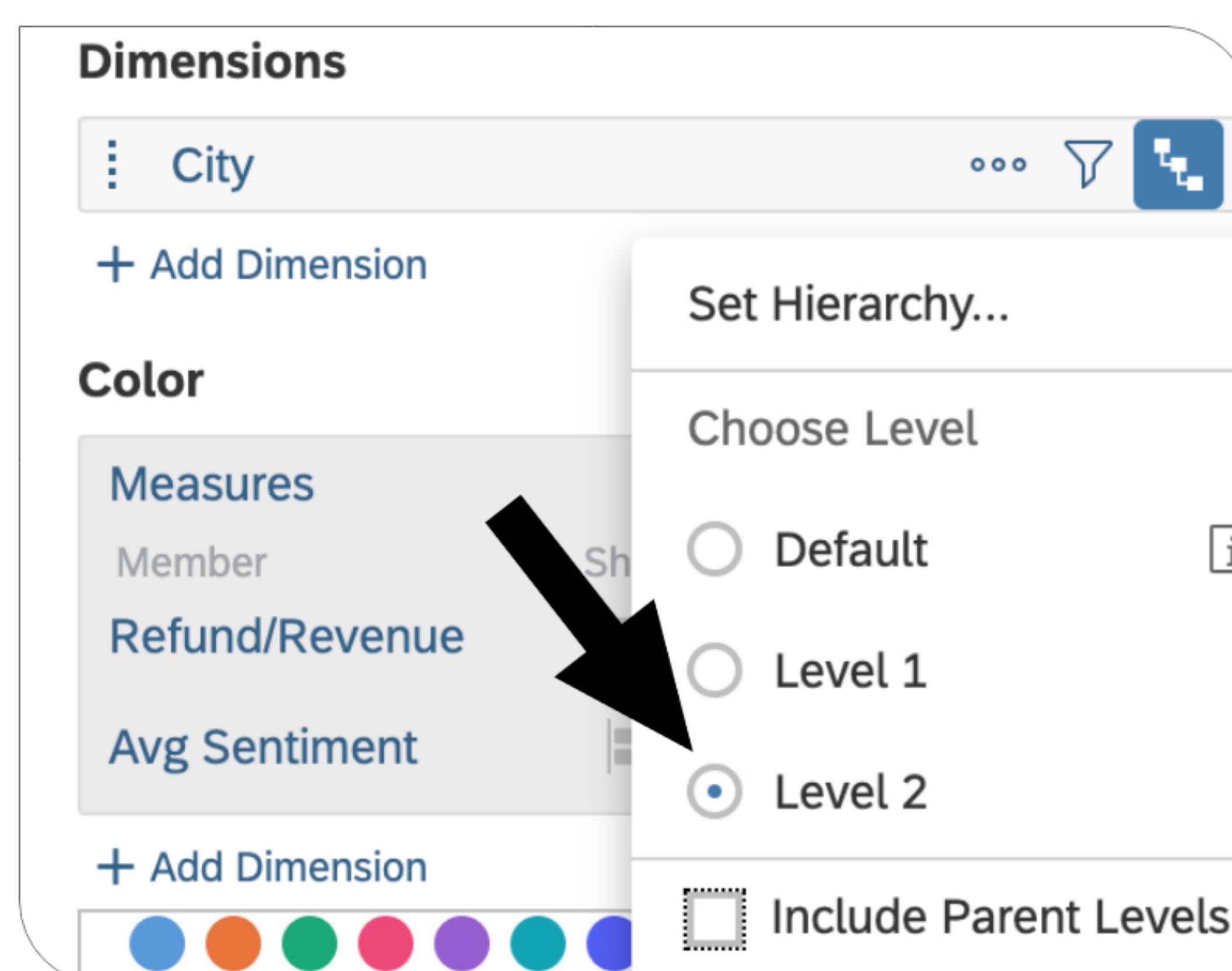
- Fill out the form as follows.
(Zoom-in to read all values)**



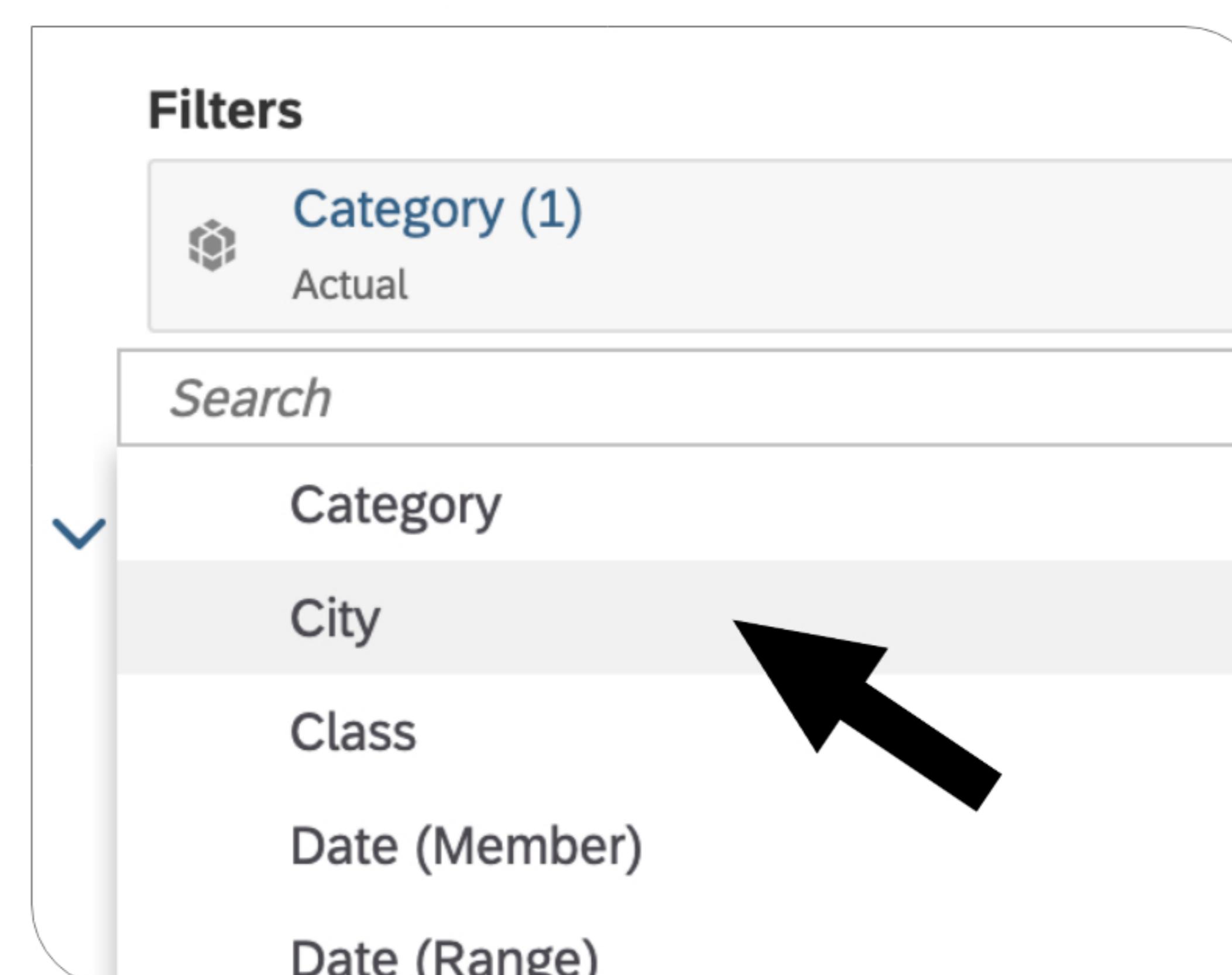
- Press OK to Save the Measure.**



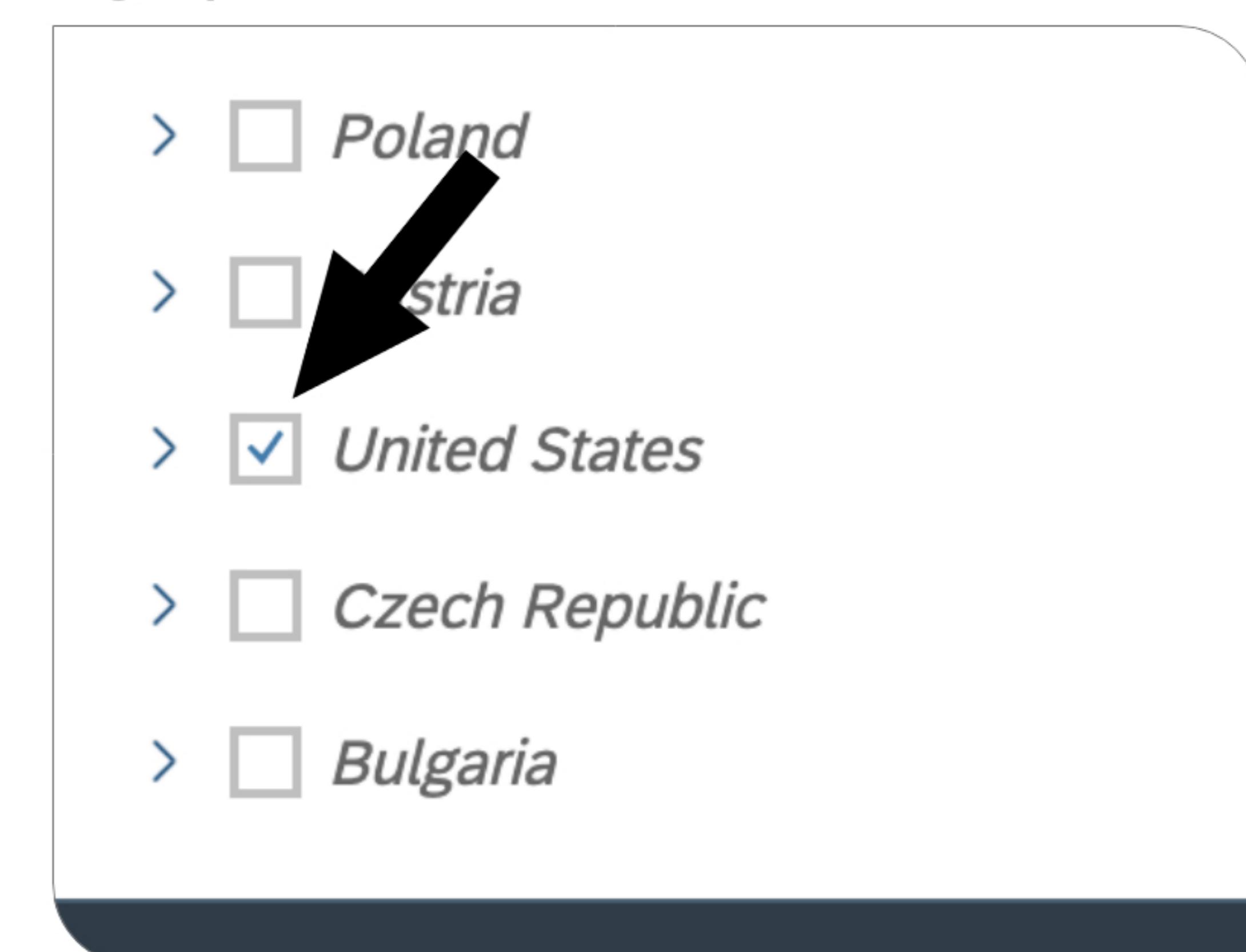
- Set City as Dimension and select Level 2 of the hierarchy to be used.**



- Add new Filter (towards the bottom of the panel) and select City from the dropdown.**

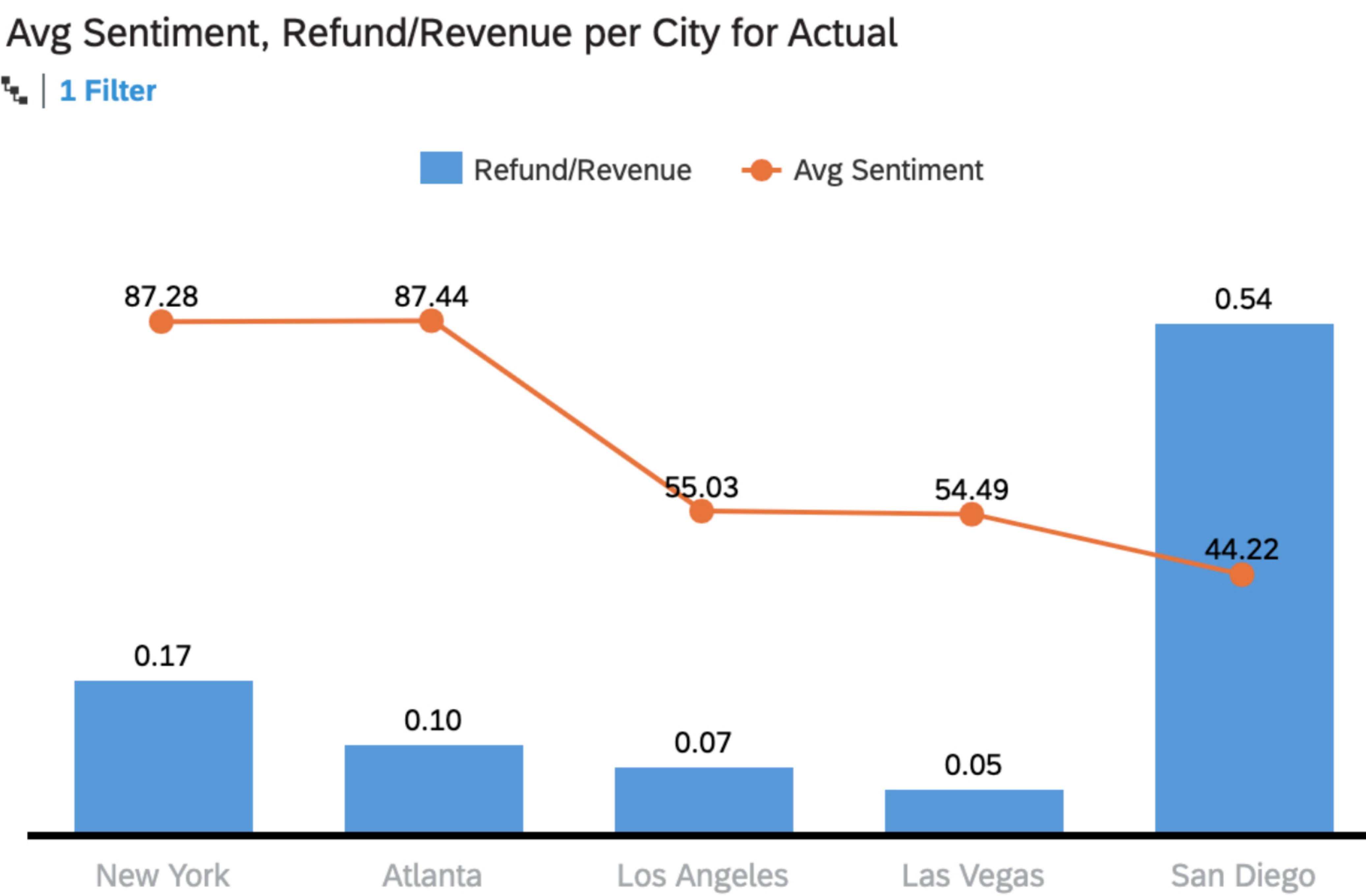


- Check the United States in the list and click the OK button (bottom right).**



Building a Story: Aggregates

The resulting chart should look similar to this.



Now you are ready to build the rest of the charts, independently from this guide. Have fun!