## 4.1 OLAP Operations
4.1.1 Pivot
SELECT
"Country",
COALESCE("2000", 0) AS "2000",
COALESCE("2006", 0) AS "2006",
COALESCE("2012", 0) AS "2012",
COALESCE("2021", 0) AS "2021"
FROM crosstab(
'SELECT "Country", "Year", "GlobalHungerIndex"
FROM public."Global_Hunger_Index" ORDER BY 1, 2'
) AS Country ("Country" text, "2000" numeric, "2006" numeric, "2012" numeric, "2021"
numeric);

For further information, you can go through the link in README.

The Global Hunger Index in year 2000, 2006, 2012 and 2021
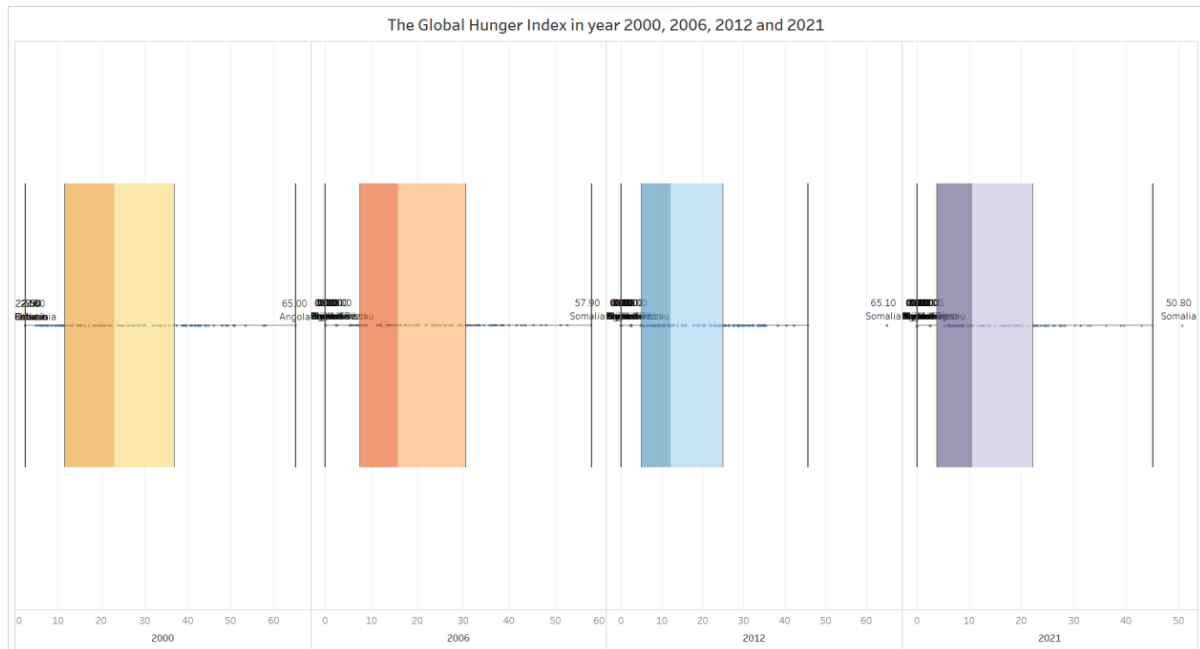
4.1.2 Slicing

```
SELECT
"MPI_National"."Country",
"MPI_National"."Intensity_of_Deprivation_Urban",
"MPI_National"."Intensity_of_Deprivation_Rural",
ROUND(AVG("Sub_National"."Intensity_of_deprivation_Regional"), 1) AS
"Total_Intensity_of_Deprivation"
FROM
public."MPI_National"
JOIN
public."Sub_National" ON "MPI_National"."Country" = "Sub_National"."Country"
GROUP BY
"MPI_National"."Country",
"MPI_National"."Intensity_of_Deprivation_Urban",
"MPI_National"."Intensity_of_Deprivation_Rural"
HAVING ROUND(AVG("Sub_National"."Intensity_of_deprivation_Regional")) > 50
ORDER BY "MPI_National"."Country" ASC;
```

For further information, you can go through the link in README.
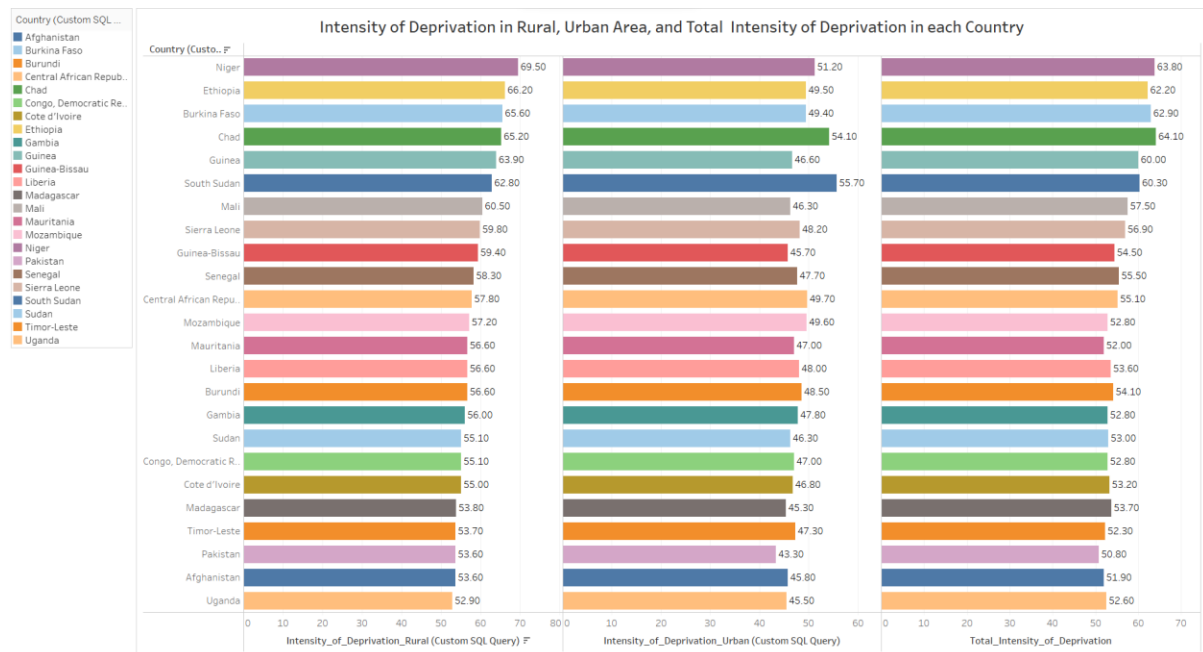
4.1.3 Slicing
SELECT
"Unemployment_Rate"."Country",
"Unemployment_Rate"."CountryCode",
ROUND((AVG("Unemployment_Rate"."2001") + AVG("Unemployment_Rate"."2002")
+
AVG("Unemployment_Rate"."2003") + AVG("Unemployment_Rate"."2004") +
AVG("Unemployment_Rate"."2005") + AVG("Unemployment_Rate"."2006") +
AVG("Unemployment_Rate"."2007") + AVG("Unemployment_Rate"."2008") +
AVG("Unemployment_Rate"."2009") + AVG("Unemployment_Rate"."2010") +
AVG("Unemployment_Rate"."2011") + AVG("Unemployment_Rate"."2012") +
AVG("Unemployment_Rate"."2013") + AVG("Unemployment_Rate"."2014") +
AVG("Unemployment_Rate"."2015") + AVG("Unemployment_Rate"."2016") +
AVG("Unemployment_Rate"."2017") + AVG("Unemployment_Rate"."2018")) / 18, 2)
AS "UnemploymentRate_from_2001_to_2018",
ROUND(AVG("Prevalence_of_Undernourishment"."PrevalenceofUndernourishment"), 2)
AS "Undernourishment_from_2001_to_2018"
FROM public."Unemployment_Rate"
JOIN public."Prevalence_of_Undernourishment"
ON "Unemployment_Rate"."Country" = "Prevalence_of_Undernourishment"."Country"
GROUP BY "Unemployment_Rate"."Country", "Unemployment_Rate"."CountryCode"
HAVING ROUND((AVG("Unemployment_Rate"."2001") +
AVG("Unemployment_Rate"."2002") +
AVG("Unemployment_Rate"."2003") + AVG("Unemployment_Rate"."2004") +
AVG("Unemployment_Rate"."2005") + AVG("Unemployment_Rate"."2006") +
AVG("Unemployment_Rate"."2007") + AVG("Unemployment_Rate"."2008") +
AVG("Unemployment_Rate"."2009") + AVG("Unemployment_Rate"."2010") +
AVG("Unemployment_Rate"."2011") + AVG("Unemployment_Rate"."2012") +
AVG("Unemployment_Rate"."2013") + AVG("Unemployment_Rate"."2014") +
AVG("Unemployment_Rate"."2015") + AVG("Unemployment_Rate"."2016") +
AVG("Unemployment_Rate"."2017") + AVG("Unemployment_Rate"."2018")) / 18,
2) >= 10
ORDER BY "Unemployment_Rate"."Country";

For further information, you can go through the link in README.

The Average of Undernourishment Rate and Unemployment Rate from Year 2001 to Year 2018 in each Country
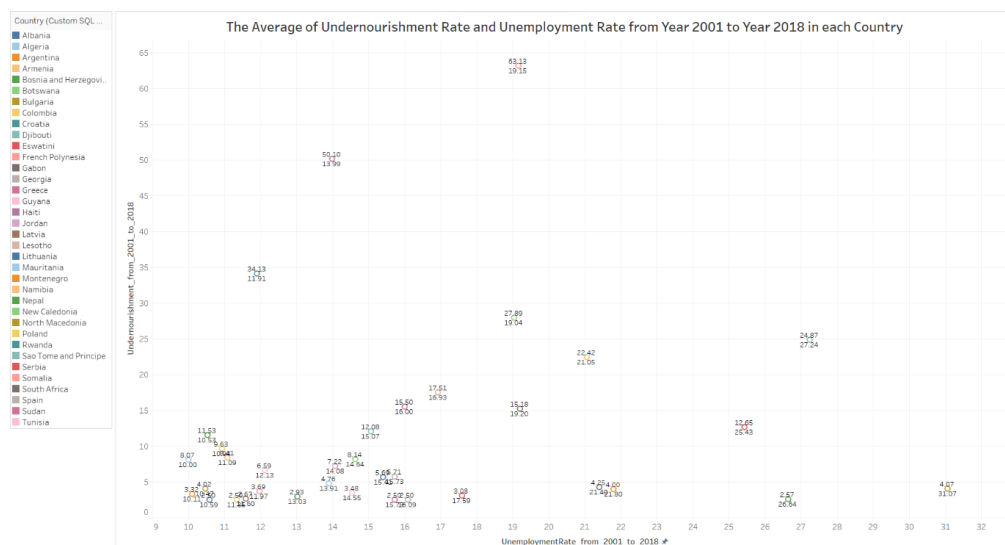
4.1.4 Dicing
```
SELECT
"Unemployment_Rate"."Country",
"Unemployment_Rate"."CountryCode",
ROUND((SUM("Unemployment_Rate"."2010" + "Unemployment_Rate"."2011" +
"Unemployment_Rate"."2012" + "Unemployment_Rate"."2013" +
"Unemployment_Rate"."2014" + "Unemployment_Rate"."2015" +
"Unemployment_Rate"."2016" + "Unemployment_Rate"."2017" +
"Unemployment_Rate"."2018") / 9), 2) AS "UnemploymentRate_from_2010_to_2018",
ROUND((SUM("Income_by_Country"."2010" + "Income_by_Country"."2011" +
"Income_by_Country"."2012" + "Income_by_Country"."2013" +
"Income_by_Country"."2014" + "Income_by_Country"."2015" +
"Income_by_Country"."2016" + "Income_by_Country"."2017" +
"Income_by_Country"."2018") / 9), 2) AS "IncomeCountry_from_2010_to_2018"
FROM public."Unemployment_Rate"
JOIN public."Income_by_Country"
ON "Unemployment_Rate"."Country" = "Income_by_Country"."Country"
GROUP BY "Unemployment_Rate"."Country", "Unemployment_Rate"."CountryCode"
HAVING ROUND((SUM("Unemployment_Rate"."2010" + "Unemployment_Rate"."2011"
+
"Unemployment_Rate"."2012" + "Unemployment_Rate"."2013" +
"Unemployment_Rate"."2014" + "Unemployment_Rate"."2015" +
"Unemployment_Rate"."2016" + "Unemployment_Rate"."2017" +
"Unemployment_Rate"."2018") / 9), 2) >= 4
AND ROUND((SUM("Unemployment_Rate"."2010" + "Unemployment_Rate"."2011" +
"Unemployment_Rate"."2012" + "Unemployment_Rate"."2013" +
"Unemployment_Rate"."2014" + "Unemployment_Rate"."2015" +
"Unemployment_Rate"."2016" + "Unemployment_Rate"."2017" +
"Unemployment_Rate"."2018") / 9), 2) <= 10
ORDER BY "Unemployment_Rate"."Country";
```

For further information, you can go through the link in README.

The Average Income and Unemployment Rate from Year 2010 to Year 2018 in each Country