

# Rakshit Sharma

## 19BCE2649

### VIT Vellore Campus

## SmartInternz Project

### Topic: World Population Data Analytics Using IBM Cognos

The 2019 Revision of World Population Prospects is the twenty-sixth round of official United Nations population estimates and projections that have been prepared by the Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat.

The main results are presented in a series of Excel files displaying key demographic indicators for each UN development group, World Bank income group, geographic region, Sustainable Development Goals (SDGs) region, sub region and country or area for selected periods or dates within 1950-2100.

List of sources of empirical data used or considered and the methods applied in revising past estimates of population and components of demographic change (fertility, child, adult and overall mortality, international migration) are presented in tabular form for each demographic component and country or area for the period 1950-2020.

#### Goal of the case study:

To find and analyze United Nations population estimates and projections and present in a visual format for better understanding.

#### Architecture:



Dataset link: <https://population.un.org/wpp/Download/Standard/CSV/>

## Project Objectives

By the end of this Project, we will:

Know fundamental concepts and can work on IBM Cognos

- Gain a broad understanding of plotting different graphs.
- Able to create meaningful dashboards

## Project Flow

- We will create multiple analysis graphs/charts.
- Using the analysed chart creation of Dashboard will be done.
- Saving and visualizing the final dashboard in the IBM Cognos Analytics.

To accomplish this, we have to complete all the activities and tasks listed below:

1. IBM Cloud Account
2. Login to Cognos Analytics
3. Working with the Dataset
  - Understanding the Dataset
  - Loading the Dataset
4. Data Visualization Charts
  - Building of Visualizations with Analysis of Top10 Pop Total by Location Using Tree Map
  - Building of Visualizations with Analysis of Pop Total By Time Using Line Chart
  - Building of Visualizations with Analysis of Pop Male by Location and Pop Female by Location Using Pie Charts
  - Building of Visualizations with Analysis of Pop Male by Time and Pop Female Using Packed Bubble Charts
  - Building of Dashboard
  - Building of Visualizations with Analysis of Pop Male and Pop Female by Time(Group) Using Line &Column Chart
  - Building of Visualizations with Analysis of Pop Male, Pop Female and Pop Total Using Summary

## Building Project:

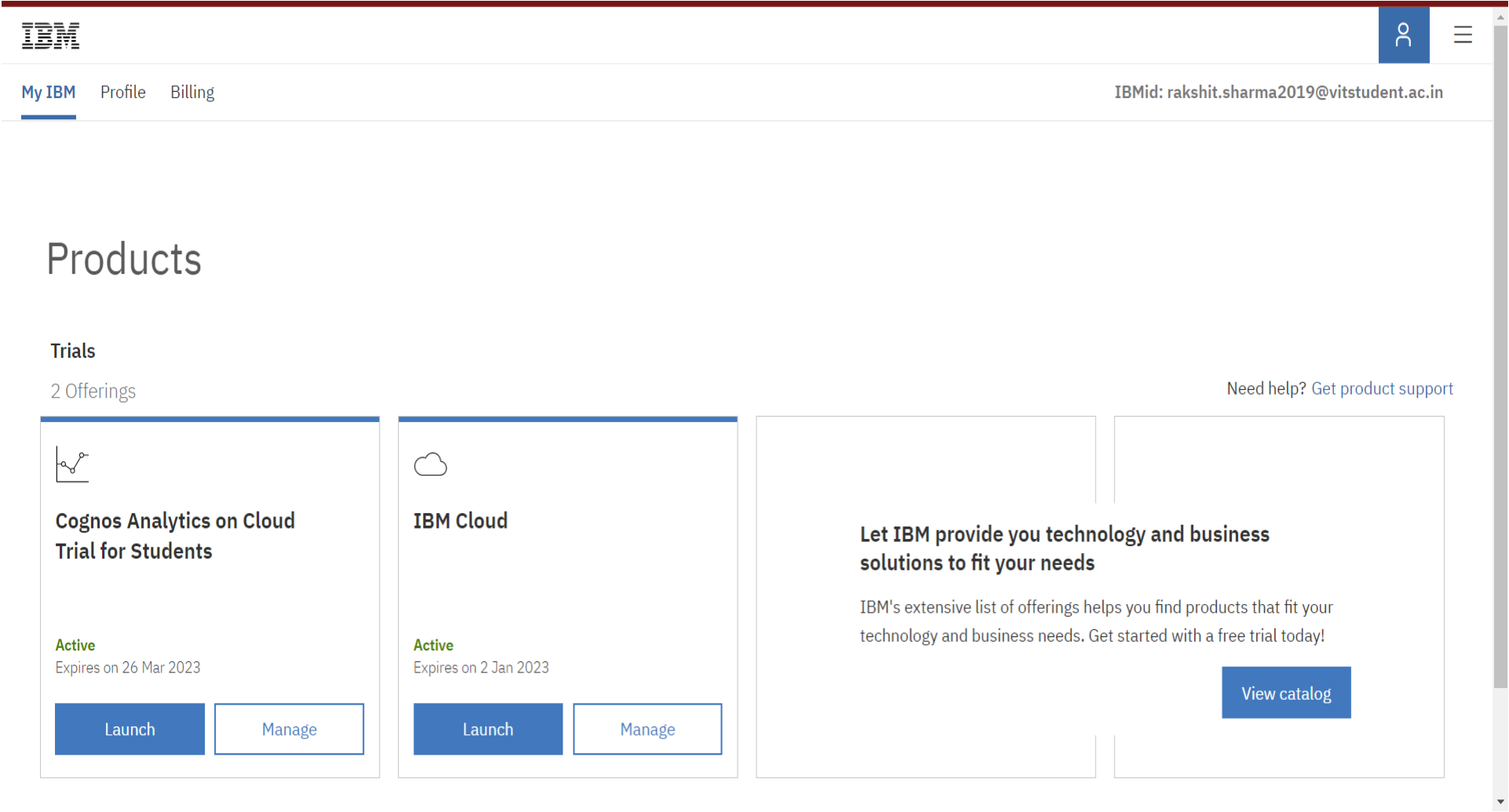


Fig: Logging into IBM Account

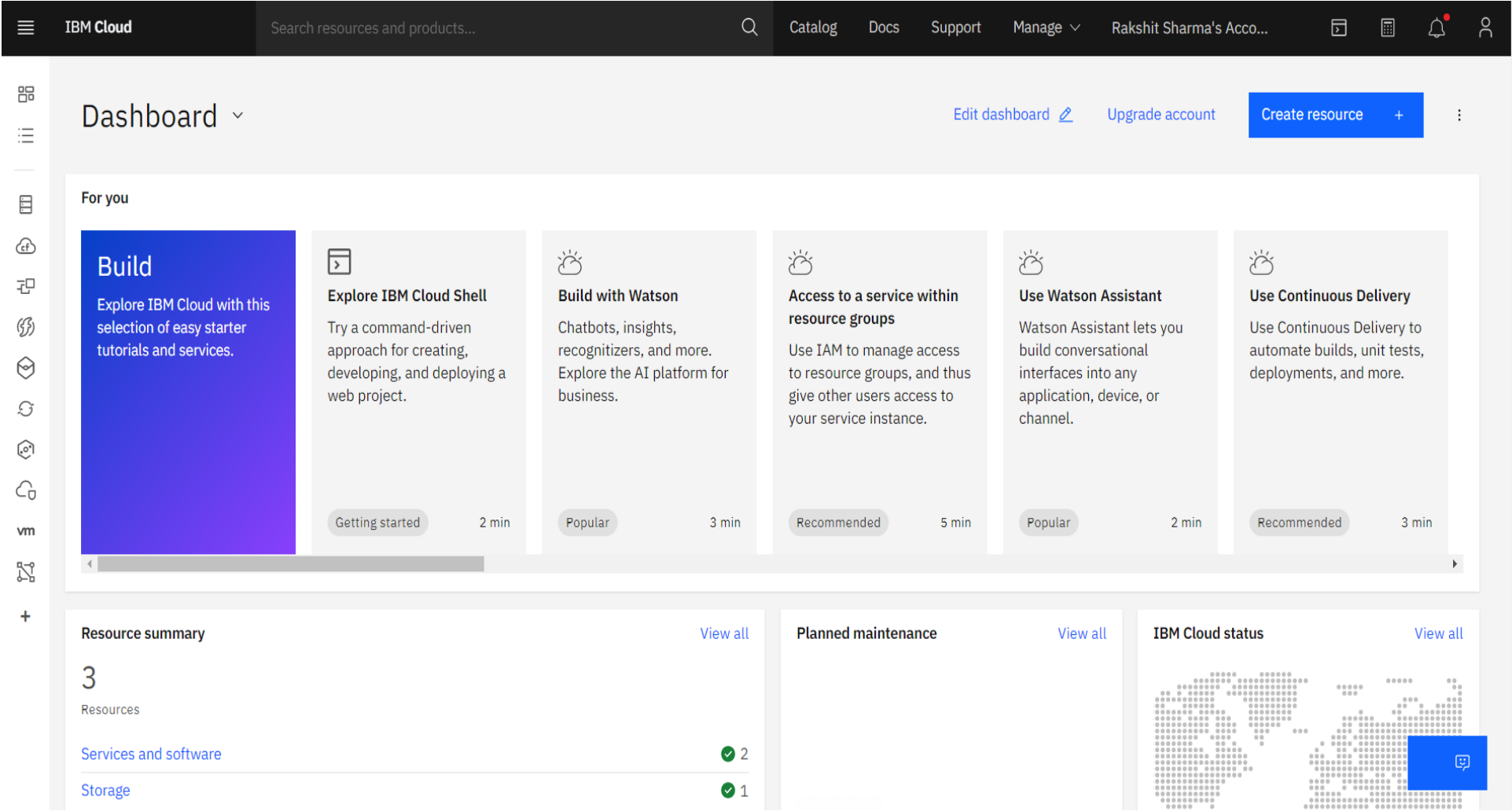


Fig: Launching IBM Cloud

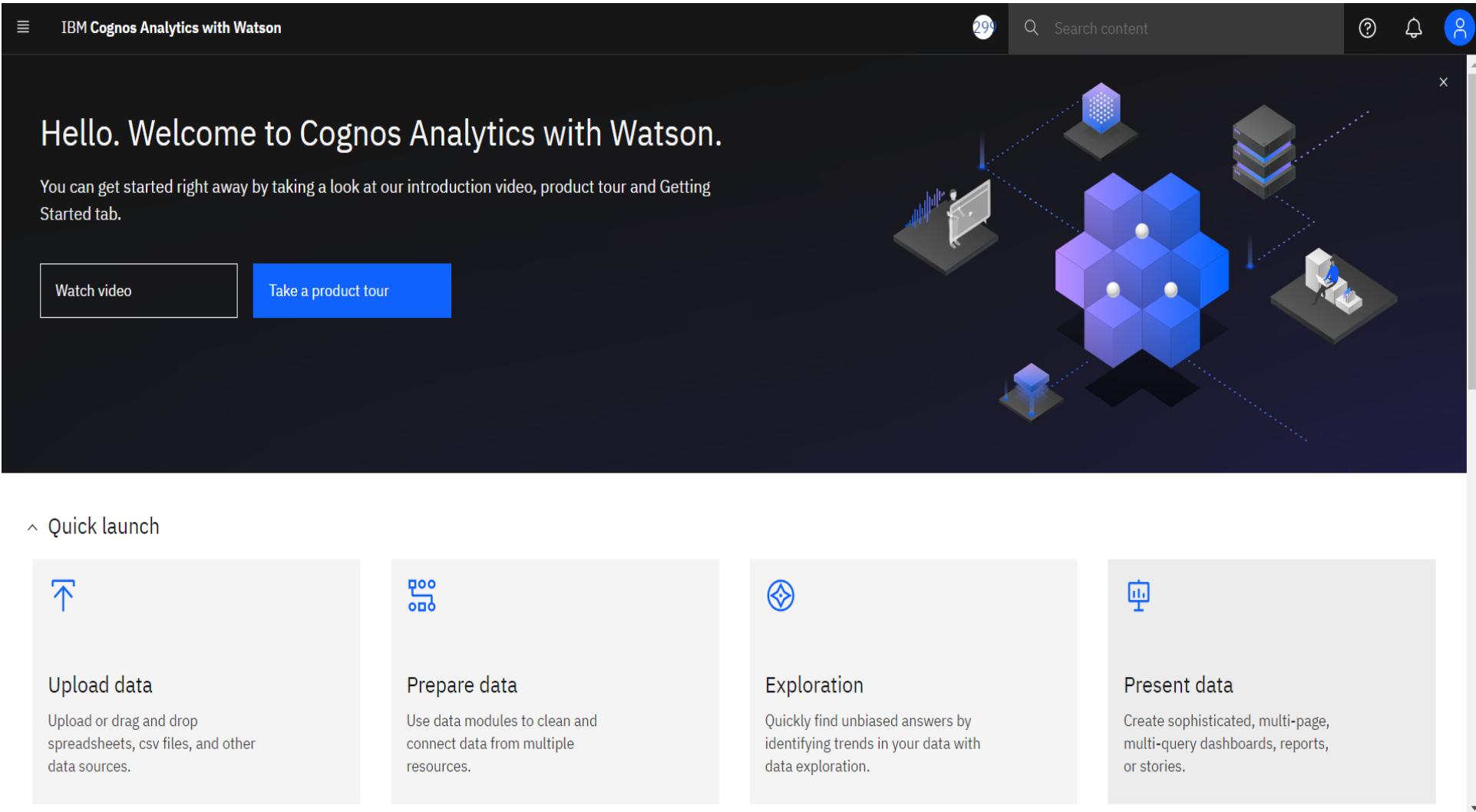


Fig: Launching IBM Cognos Analytics

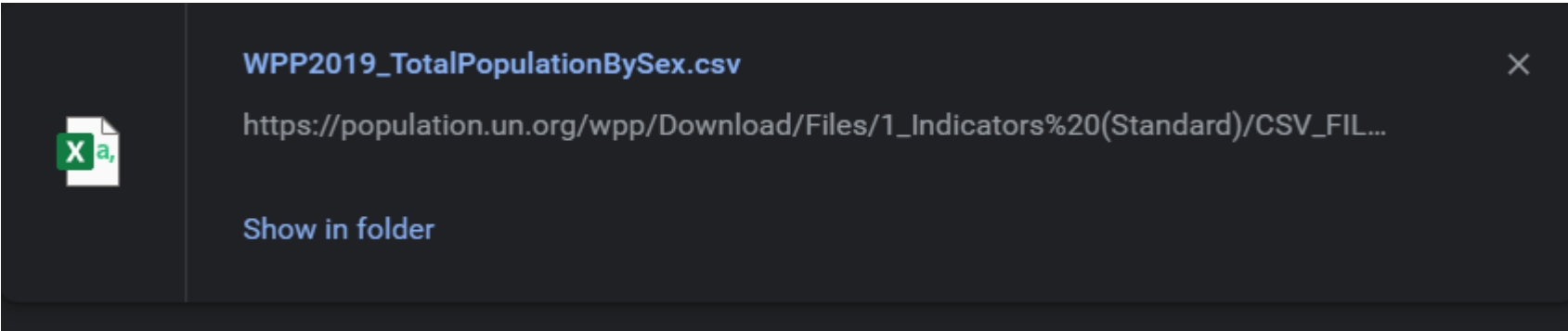


Fig: Download Dataset on which we will be working on  
Link: <https://population.un.org/wpp/Download/Standard/CSV/>

IBM Cognos Analytics with Watson

New data module

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Properties

Data module

🔍 Search

New data module

Navigation paths

WPP2019\_T...BySex.csv

# Row Id

# LocID

abc Location

# VarID

abc Variant

📅 Time

📅 MidPeriod

📅 PopMale

📅 PopFemale

📅 PopTotal

📅 PopDensity

Grid

Relationships

Custom tables

↕	Row Id	LocID	Location	VarID	Variant	Time	MidPeriod
	1	4	Afghanistan	2	Medium	1950	1950.5
	2	4	Afghanistan	2	Medium	1951	1951.5
	3	4	Afghanistan	2	Medium	1952	1952.5
	4	4	Afghanistan	2	Medium	1953	1953.5
	5	4	Afghanistan	2	Medium	1954	1954.5
	6	4	Afghanistan	2	Medium	1955	1955.5
	7	4	Afghanistan	2	Medium	1956	1956.5
	8	4	Afghanistan	2	Medium	1957	1957.5
	9	4	Afghanistan	2	Medium	1958	1958.5
	10	4	Afghanistan	2	Medium	1959	1959.5
	11	4	Afghanistan	2	Medium	1960	1960.5
	12	4	Afghanistan	2	Medium	1961	1961.5
	13	4	Afghanistan	2	Medium	1962	1962.5

Fig: Loading the Dataset

Working on the datasets:

IBM Cognos Analytics with Watson

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Navigation paths

WPP2019\_T...BySex.csv

# Row Id

# LocID

abc Location

# VarID

abc Variant

📅 Time

📅 MidPeriod

📅 PopMale

📅 PopFemale

📅 PopTotal

📅 PopDensity

Grid

Relationships

Custom tables

↕	Time	MidPeriod	PopMale	PopFemale	PopTotal	PopDensity
	1950	1950.5	4,099.24	3,652.87	7,752.12	11.874
	1951	1951.5	4,134.76	3,705.40	7,840.15	12.009
	1952	1952.5	4,174.45	3,761.55	7,936.00	12.156
	1953	1953.5	4,218.34	3,821.35	8,039.68	12.315
	1954	1954.5	4,266.48	3,884.83	8,151.32	12.486
	1955	1955.5	4,318.95	3,952.05	8,270.99	12.669
	1956	1956.5	4,375.80	4,023.07	8,398.87	12.865
	1957	1957.5	4,437.16	4,098.00	8,535.16	13.073
	1958	1958.5	4,503.16	4,176.94	8,680.10	13.295
	1959	1959.5	4,573.91	4,260.03	8,833.95	13.531
	1960	1960.5	4,649.57	4,347.39	8,996.97	13.781
	1961	1961.5	4,730.25	4,439.16	9,169.41	14.045
	1962	1962.5	4,816.05	4,535.39	9,351.44	14.324

Fig: Adding new field (PopTotal = PopMale + PopFemale)

IBM Cognos Analytics with Watson

New data module

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📁 Navigation paths

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📄 WPP2019\_T...BySex.csv

📄 PopTotal

▶ # Row Id

▶ # LocID

▶ abc Location

▶ # VarID

▶ abc Variant

📄 Time

📄 MidPeriod

📄 PopMale

📄 PopFemale

📄 PopDensity

📄 Grid

🔗 Relationships

📄 Custom tables

↕	Variant	Time	MidPeriod	PopMale	PopFemale	PopDensity
	Medium	1950	1950.5	4,099.24	3,652.87	11.874
	Medium	1951	1951.5	4,134.76	3,705.40	12.009
	Medium	1952	1952.5	4,174.45	3,761.55	12.156
	Medium	1953	1953.5	4,218.34	3,821.35	12.315
	Medium	1954	1954.5	4,266.48	3,884.83	12.486
	Medium	1955	1955.5	4,318.95	3,952.05	12.669
	Medium	1956	1956.5	4,375.80	4,023.07	12.865
	Medium	1957	1957.5	4,437.16	4,098.00	13.073
	Medium	1958	1958.5	4,503.16	4,176.94	13.295
	Medium	1959	1959.5	4,573.91	4,260.03	13.531
	Medium	1960	1960.5	4,649.57	4,347.39	13.781
	Medium	1961	1961.5	4,730.25	4,439.16	14.045
	Medium	1962	1962.5	4,816.05	4,535.39	14.324

Fig: Formatting PopMale and PopFemale Data types  
(Used Number formatting to separate 1000 places and restrict decimal places to 2)

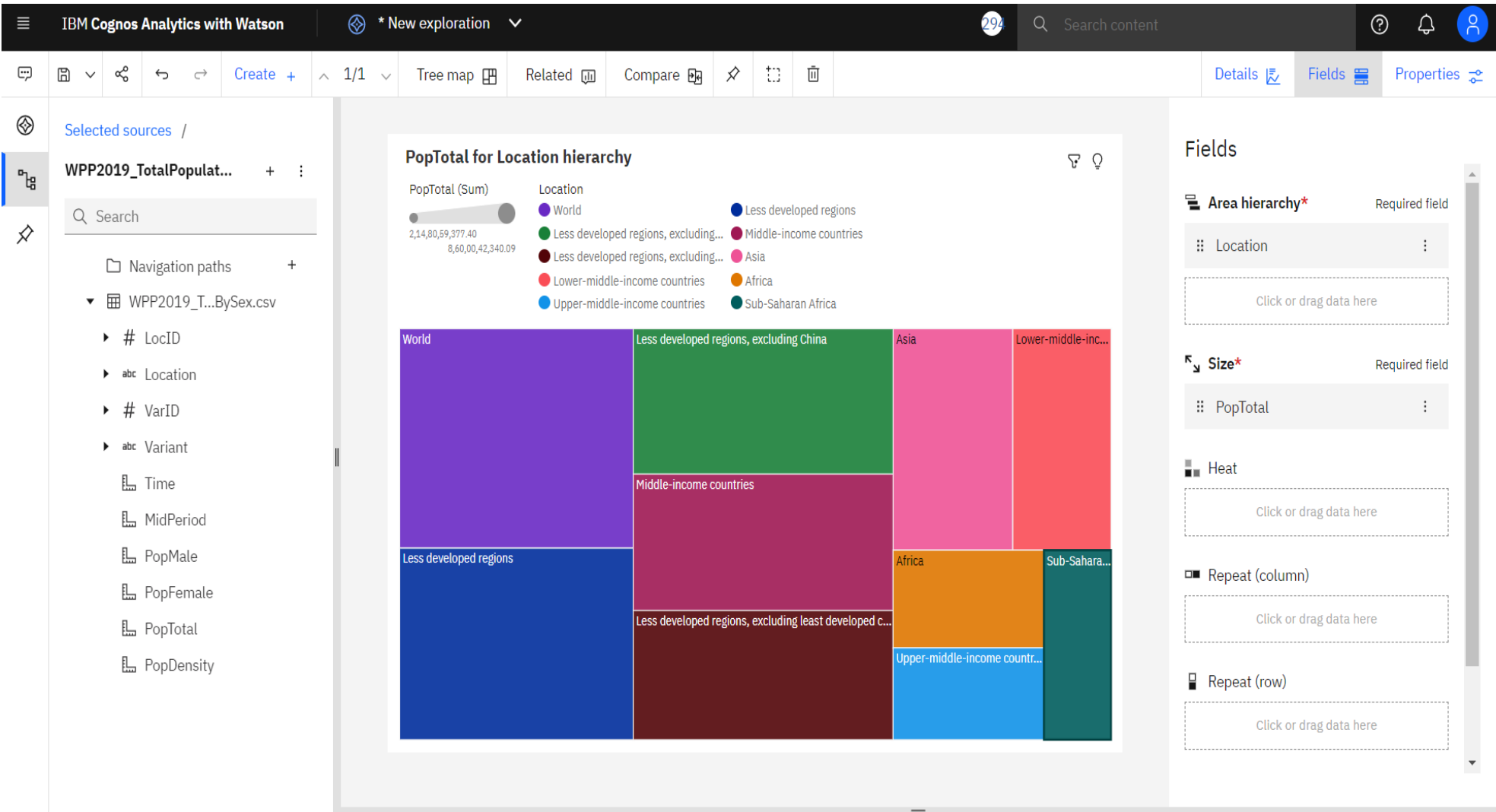


Fig: Tree Map Analysis

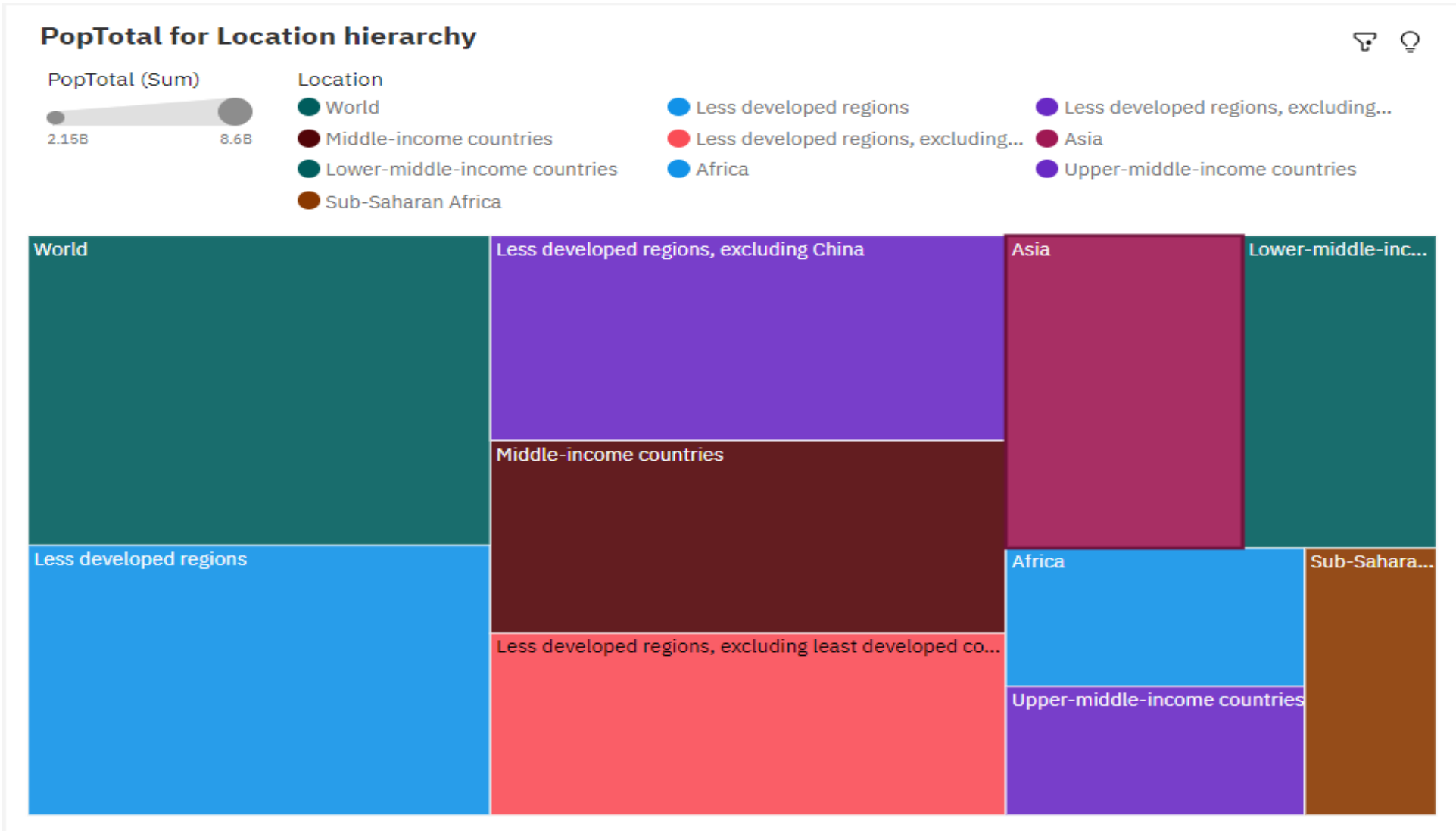


Fig: Top10 Pop Total by Location Using Tree Map

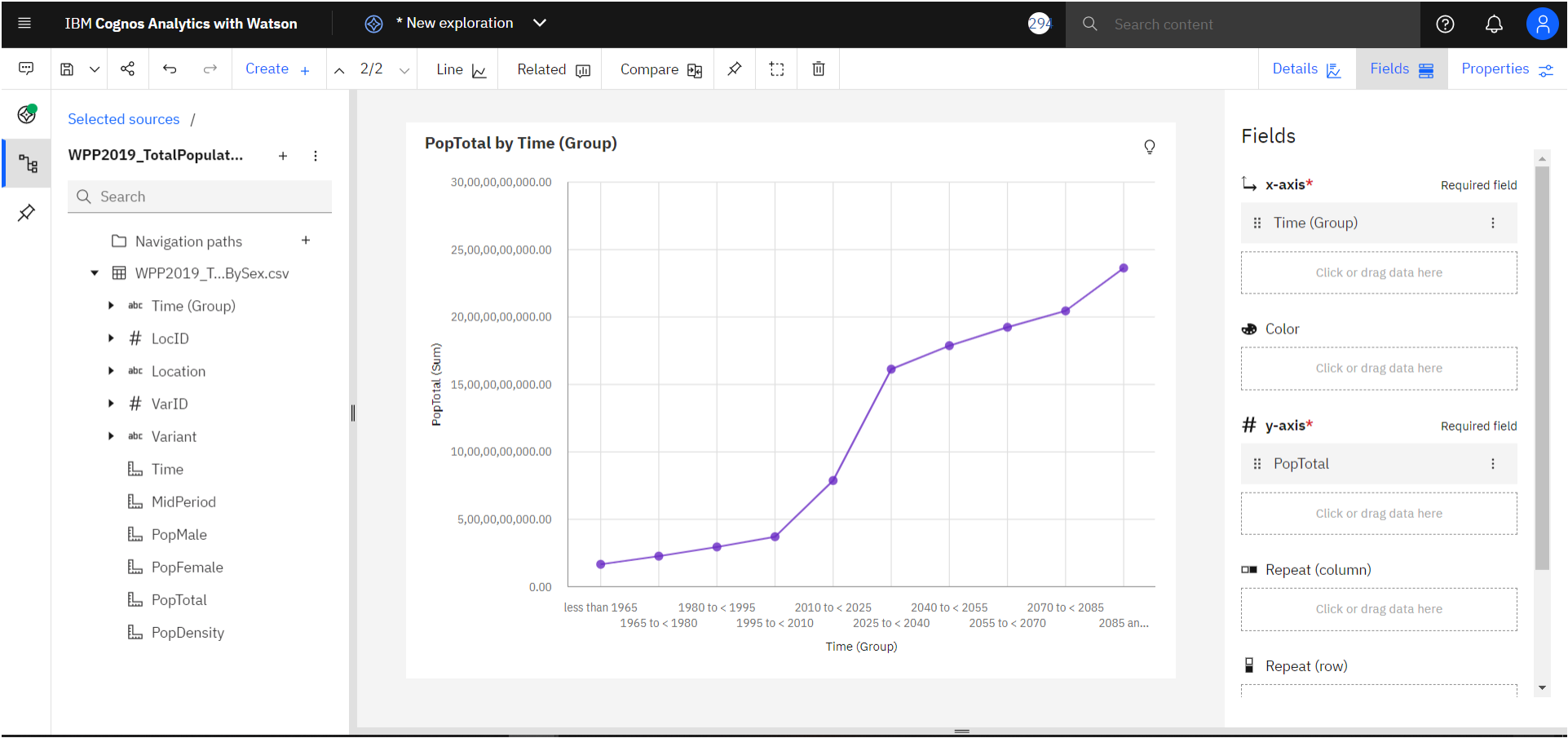


Fig: Time and Population relation



PopTotal by Time (Group)

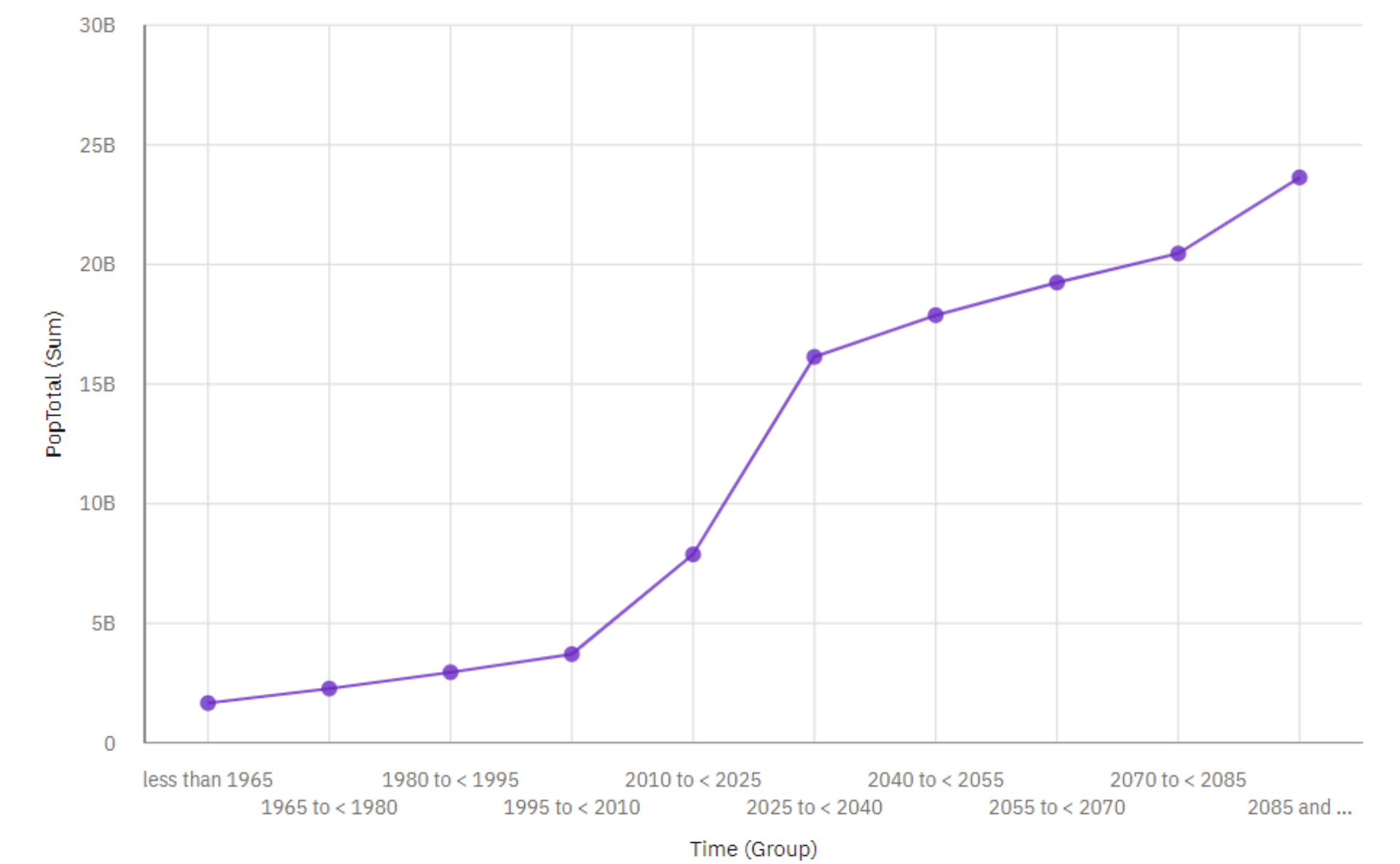


Fig: Pop Total by Time Using Line Chart

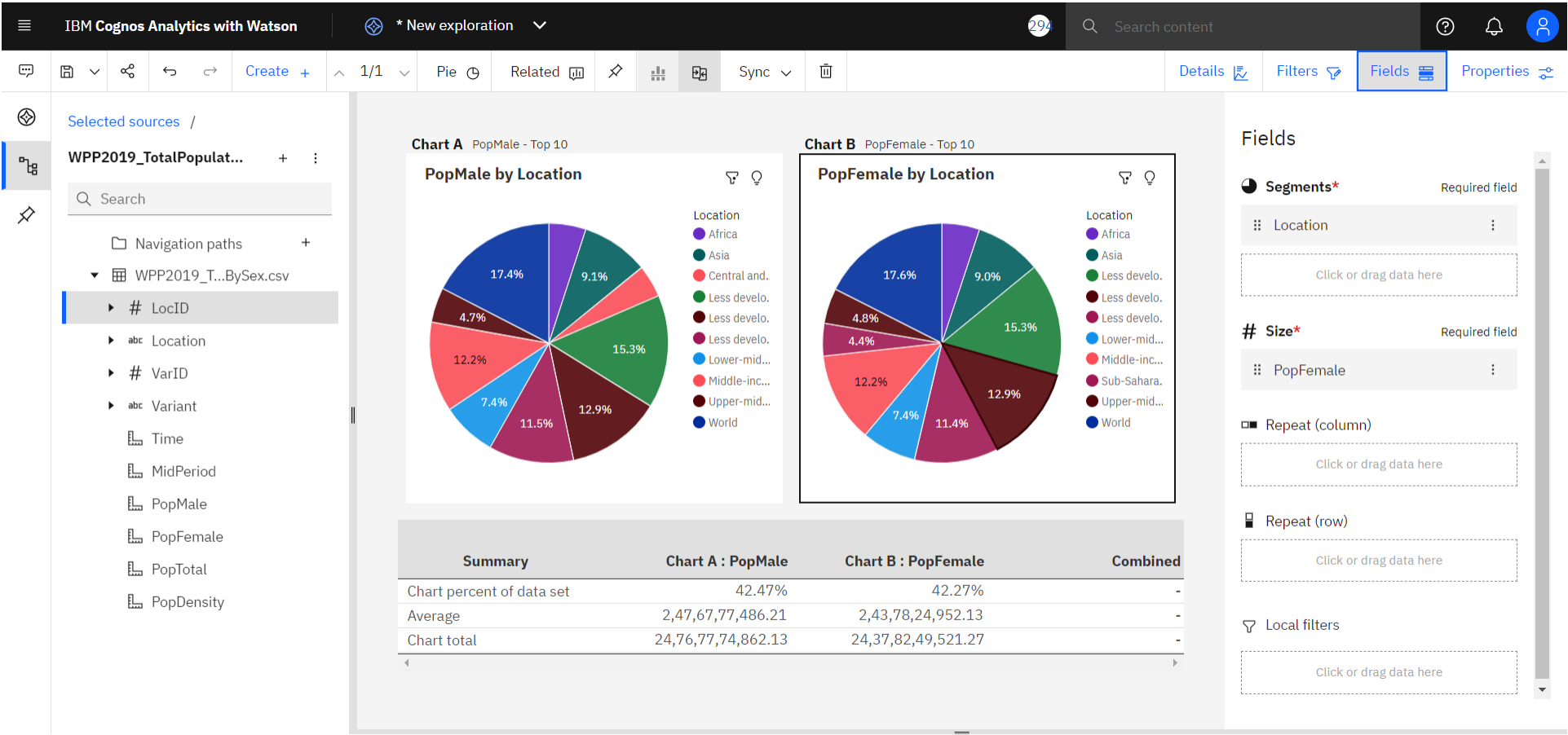


Fig: Pie-Chart of Male Population by location and Female Population by location

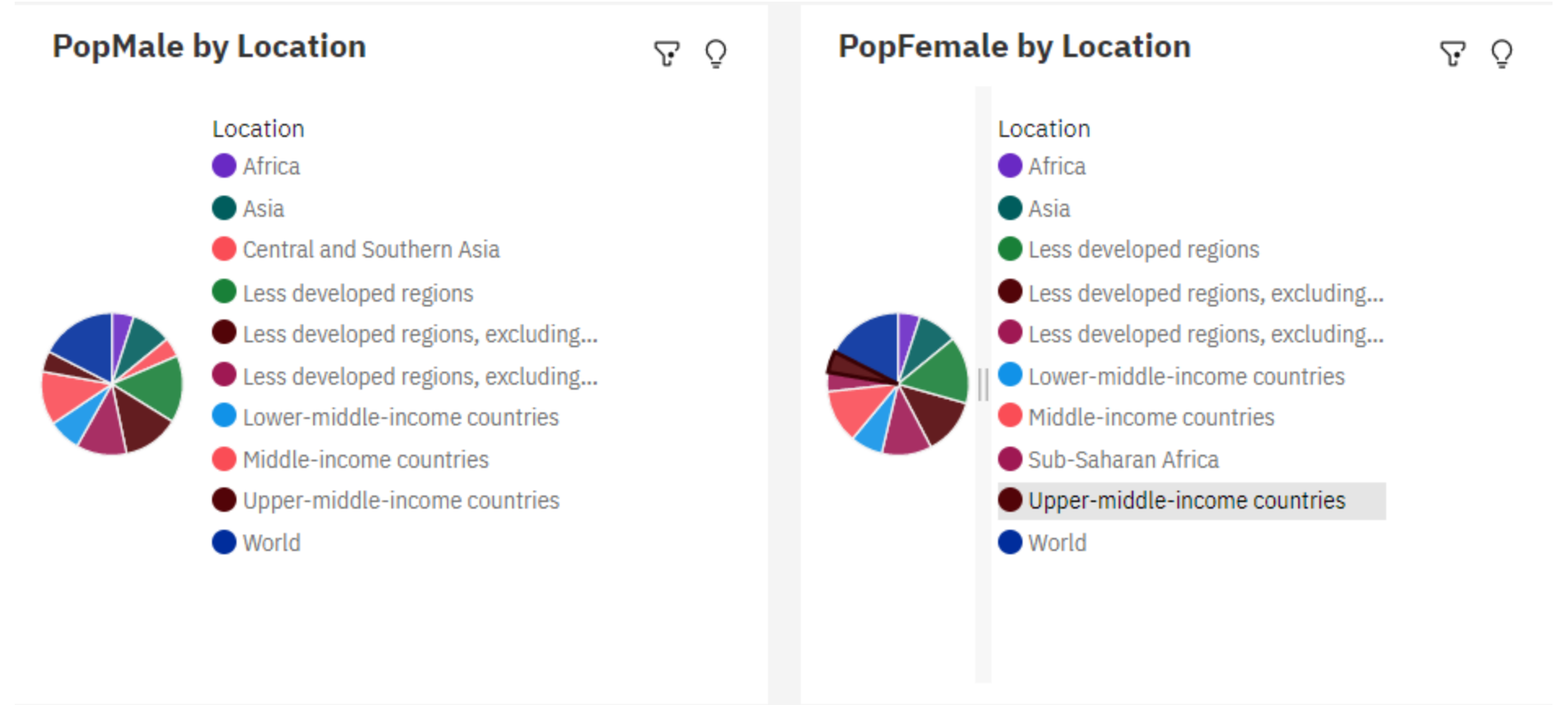
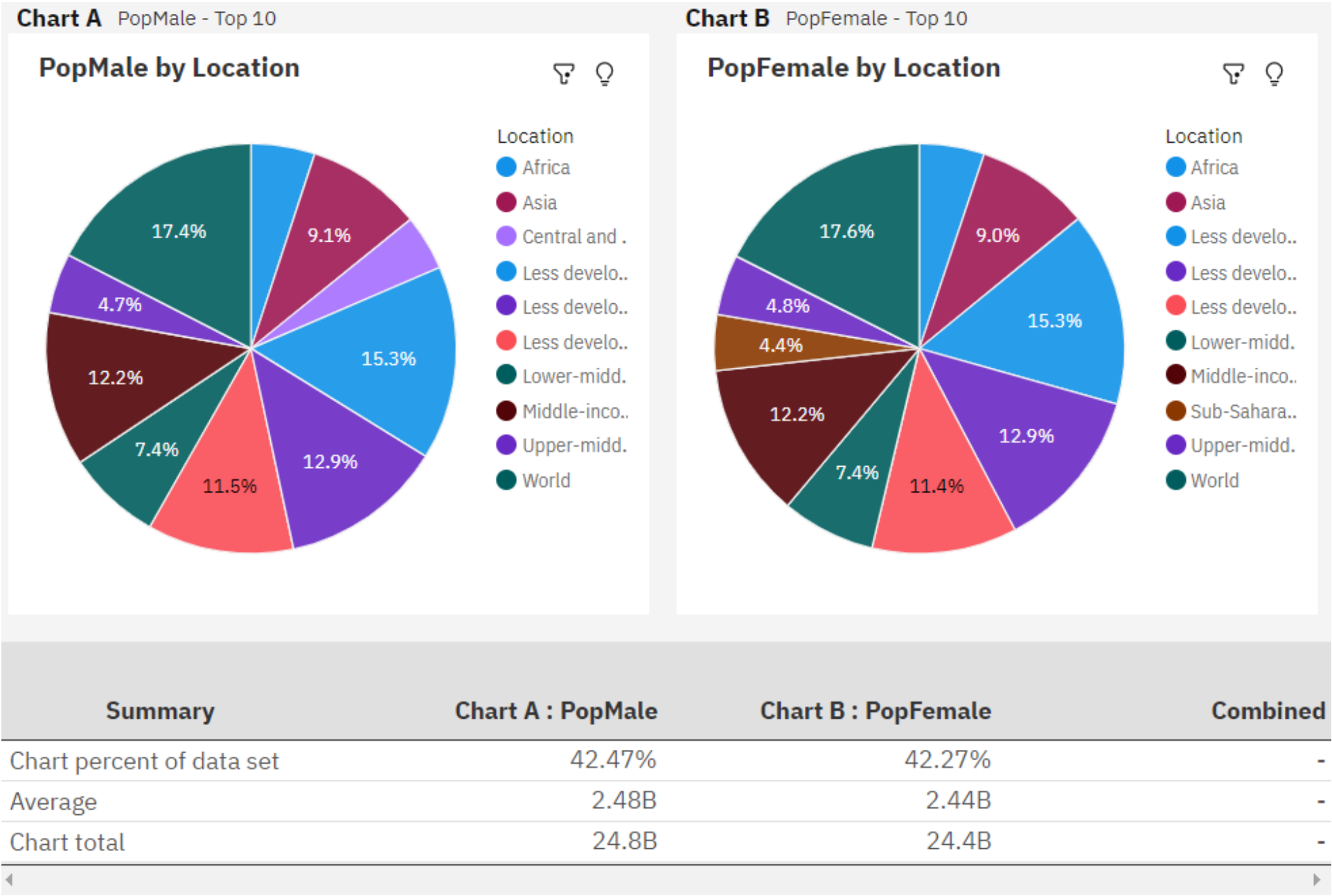


Fig: Pie chart description for distribution





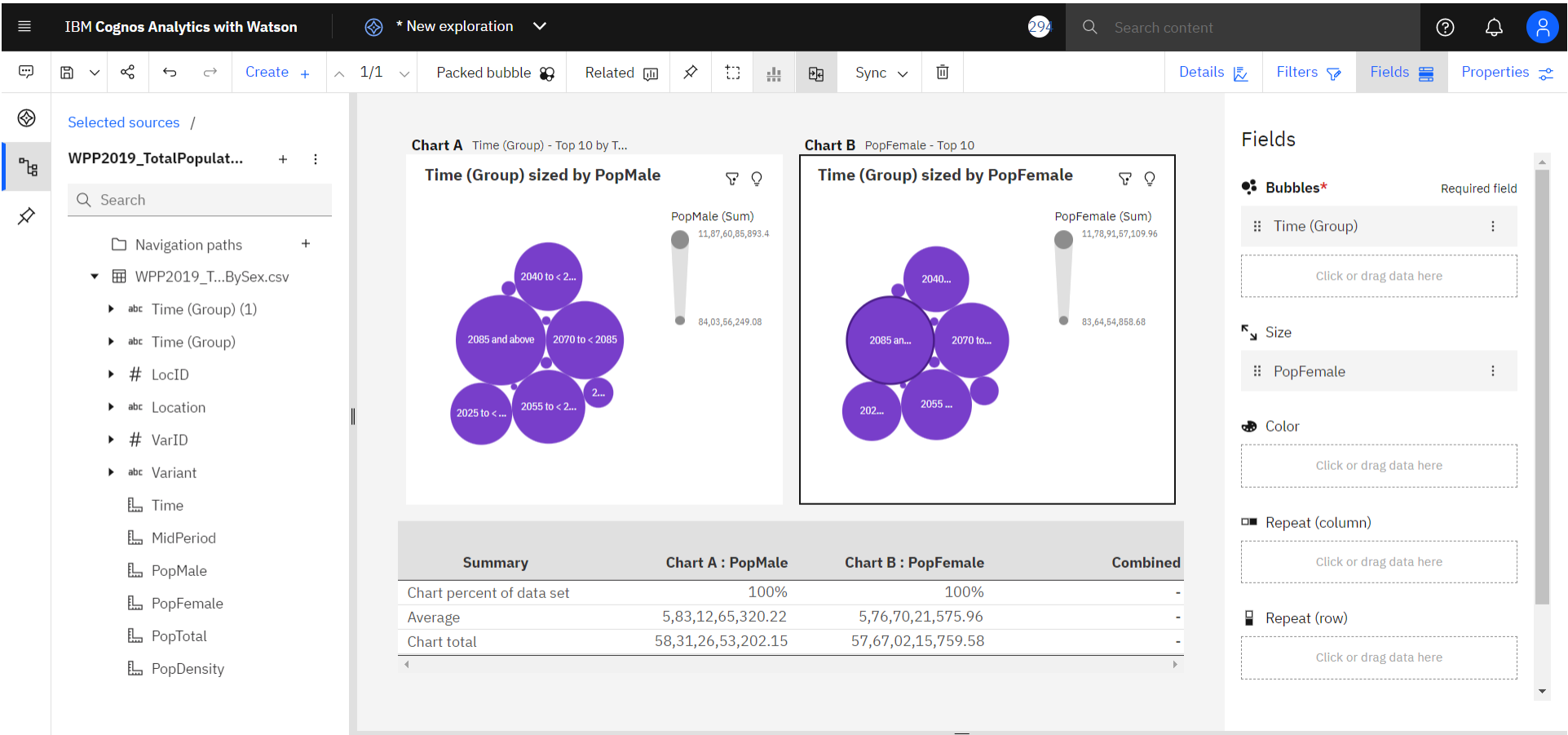


Fig: Bubbled Data for Male and Female compared with time

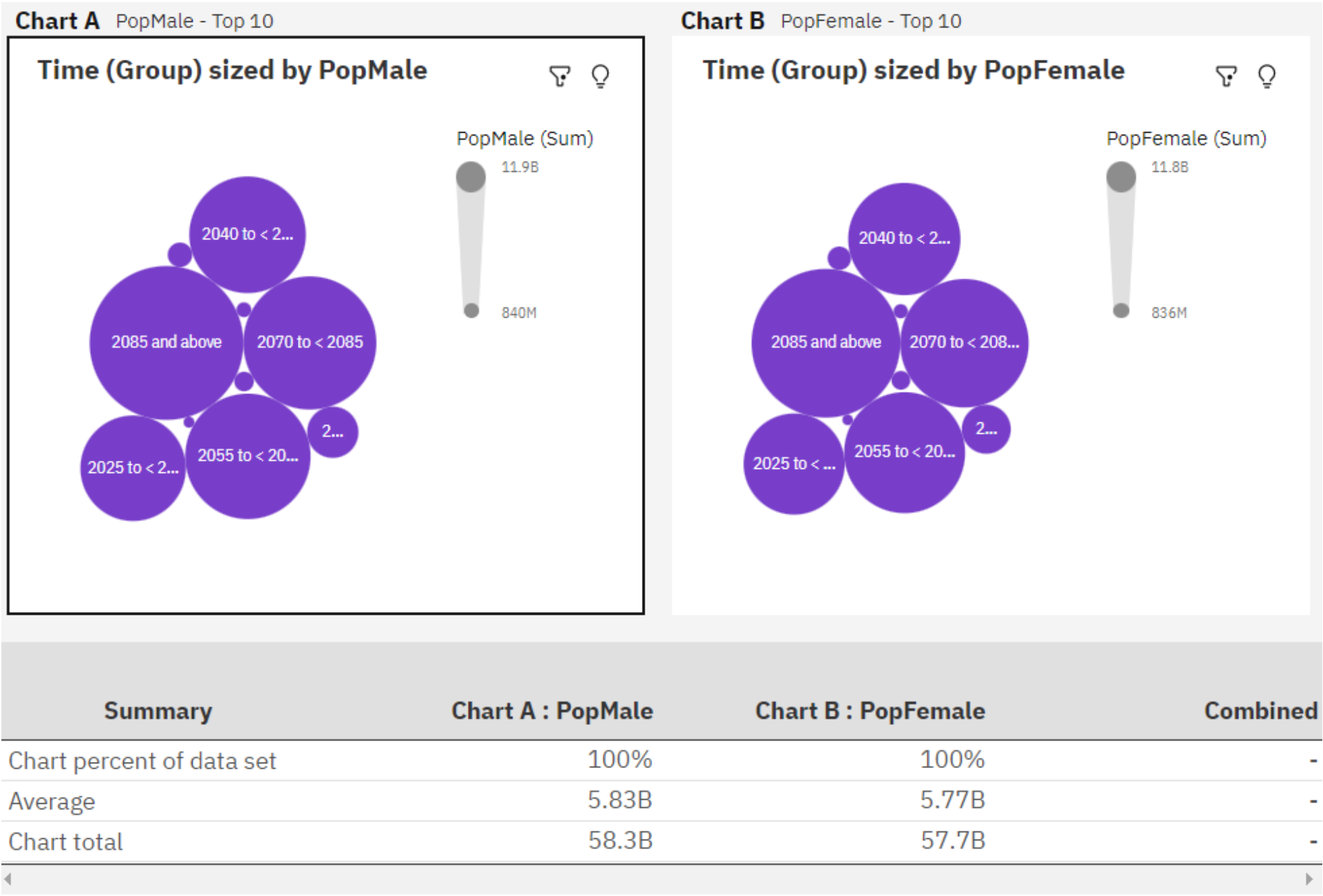


Fig: Pop Male by Time and Pop Female Using Packed Bubble Charts

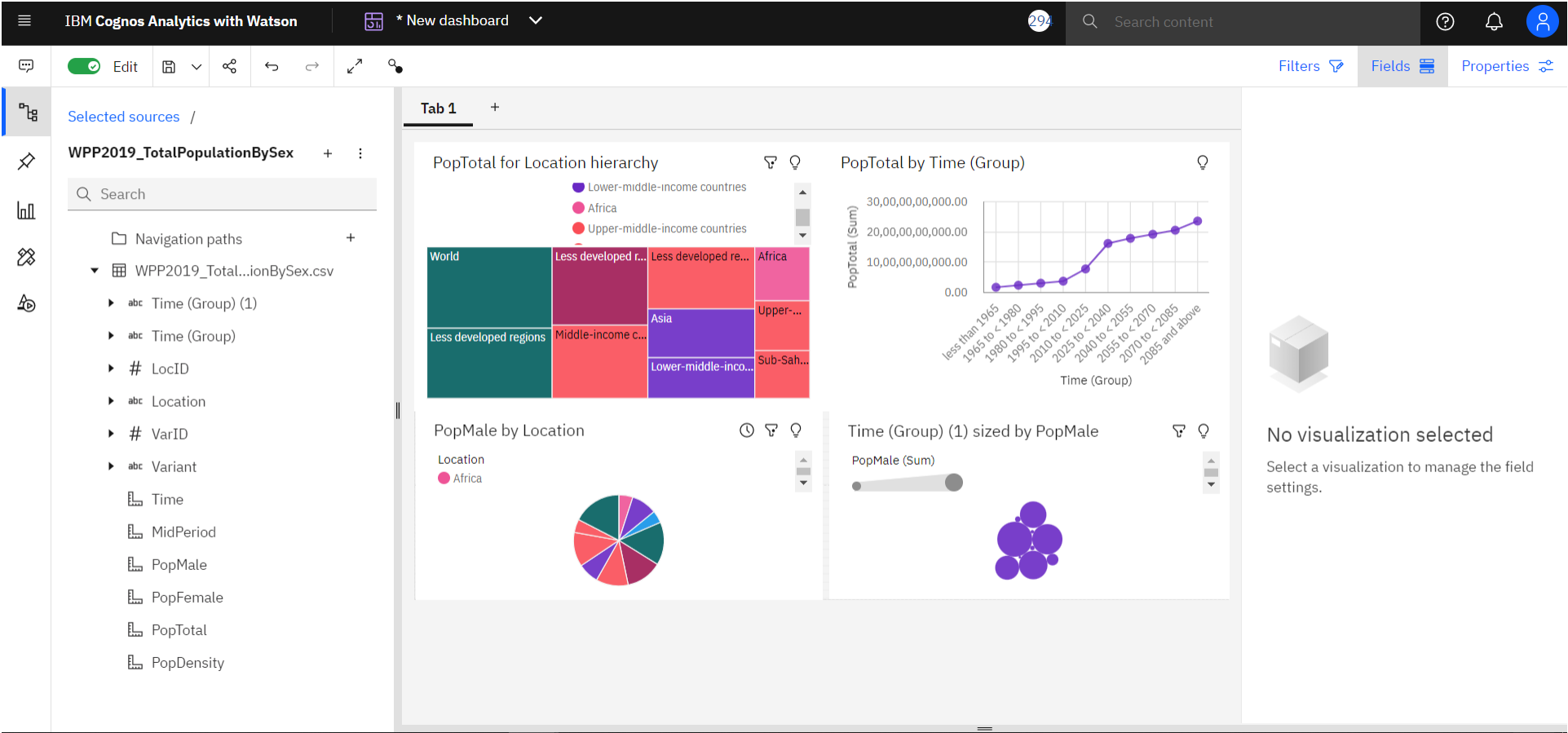


Fig: Creation of Dashboard

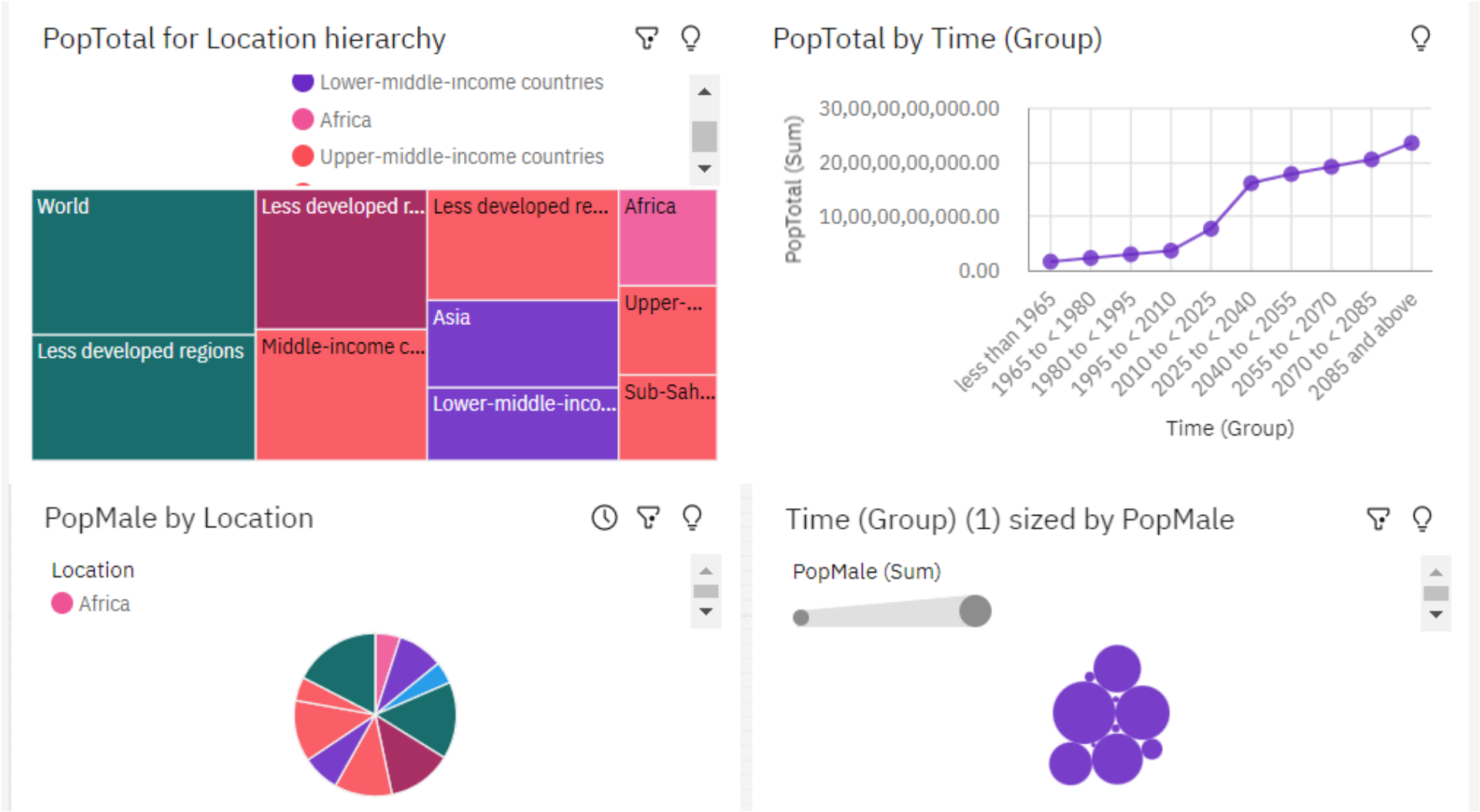


Fig: Dashboard containing all four Exploration done

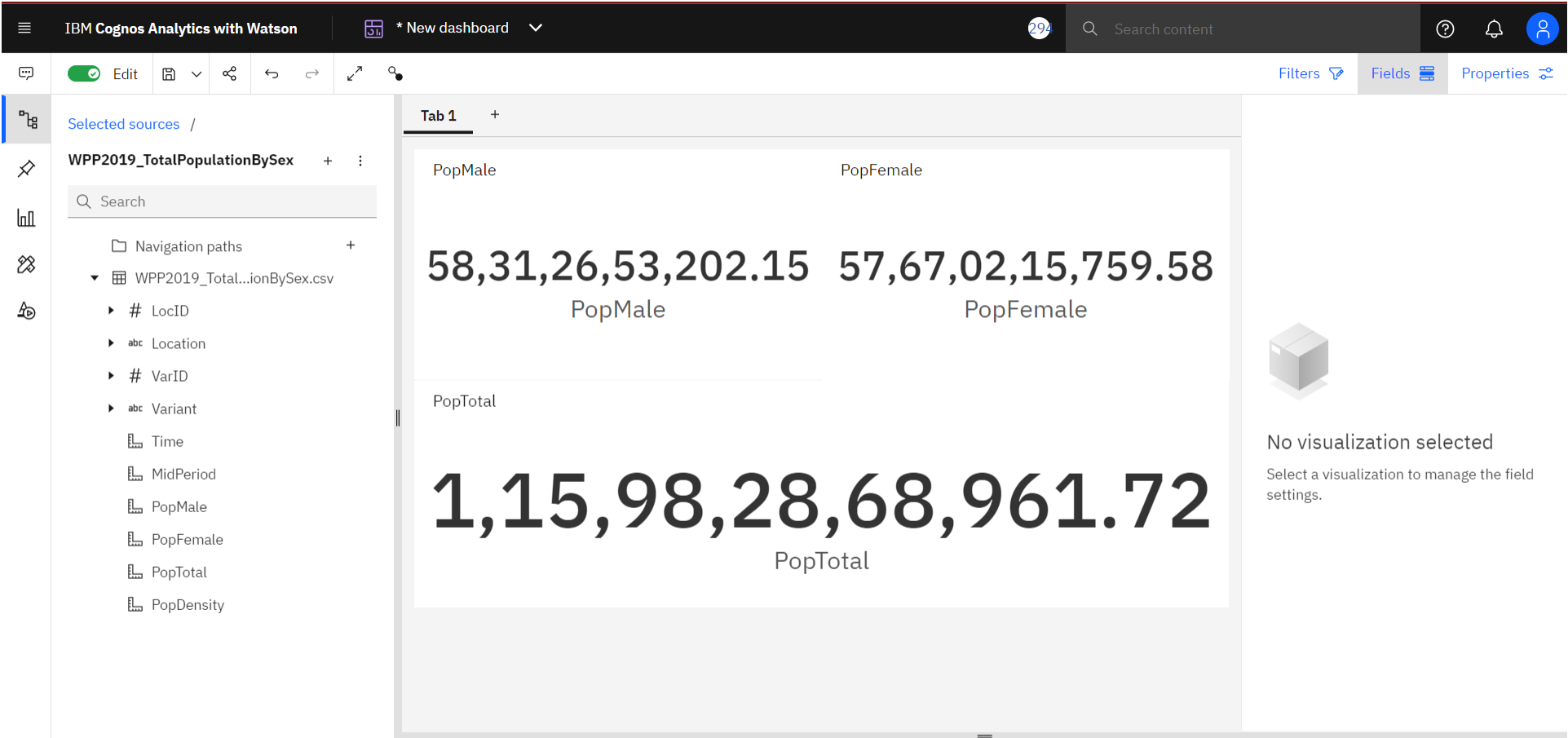


Fig: Summary Creation

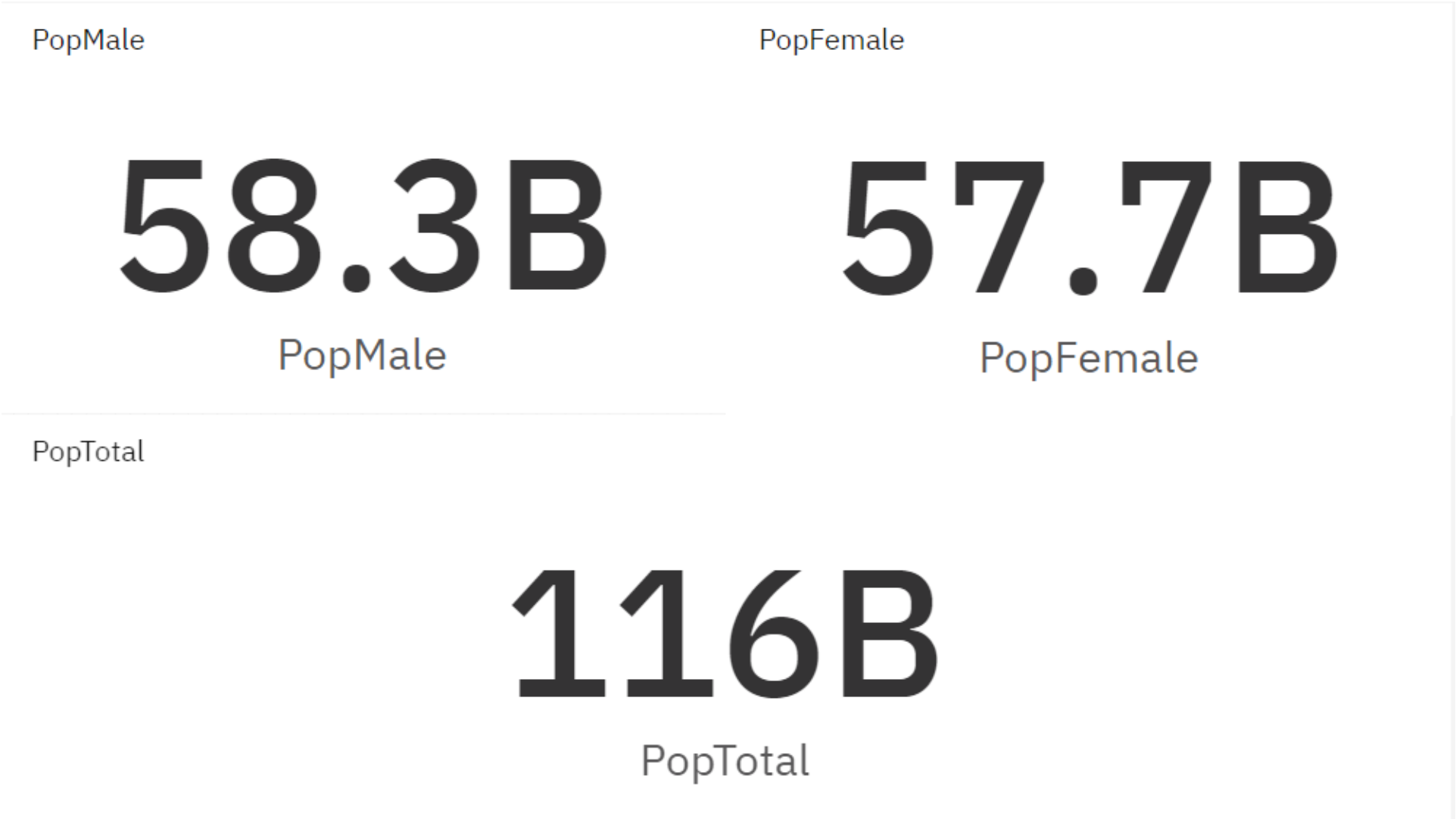


Fig: Summary

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