

Business Intelligence Visual Analytics Tools

Group 3

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Overview

- Tableau
- Qlik
- Power BI
- Spotfire

Tableau



Price (different price brackets)

- At least \$70 per user per month (for companies)
- Tableau Public, 14 day free trial, 1 year student license



Privacy

- Locally run
- Cloud version (Tableau online)



Features

- Excellent visualizations, customizable
- A lot of different import possibilities
- Windows, MacOS



Export & Extensions

- PNG, CSV, Powerpoint, PDF, Excel
- No SVG



Popularity

- The most popular BI tool, appealing to a lot of users

Tableau - Import

Connect

Search for Data

Tableau Server

To a File

Microsoft Excel

Text file

JSON file

Microsoft Access

PDF file

Spatial file

Statistical file

More...

To a Server

Microsoft SQL Server

MySQL

Oracle

Amazon Redshift

More... >

Saved Data Sources

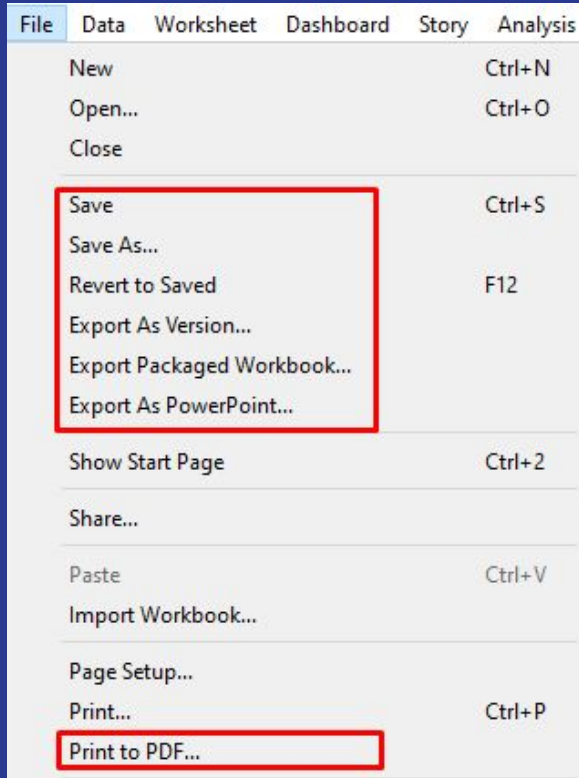
Sample - Superstore

World Indicators

Import formats

- Excel
- Text
- JSON
- Microsoft Access
- PDF
- CSV
- others

Tableau - Export



Export formats

- Tableau version
- Powerpoint
- PDF
- Image
- Excel
- No SVG

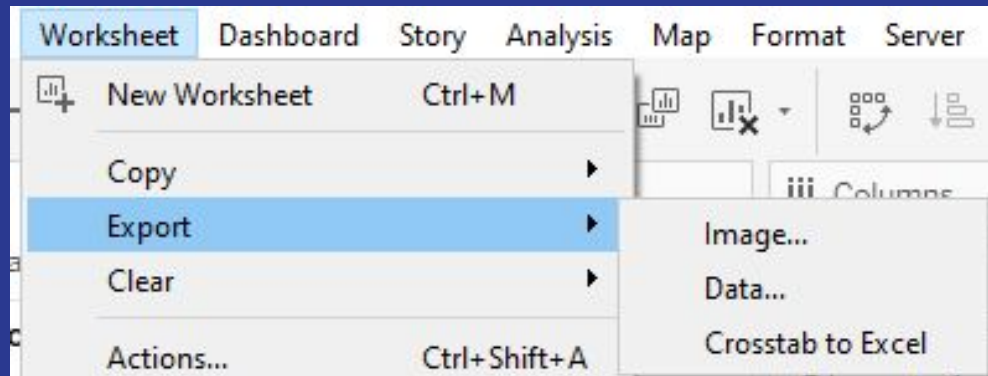


Tableau - UI Overview

Data Analytics

formatted_world_pop_s...

Dimensions

- Country
- Country Code
- Year
- Measure Names

Measures

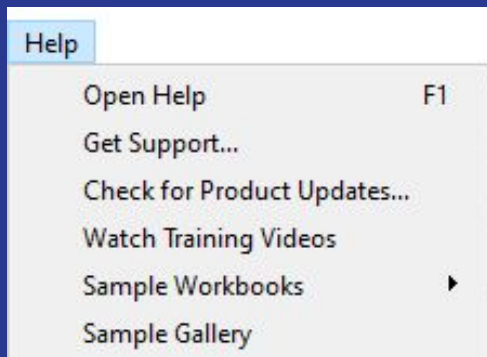
- Population
- Latitude (generated)
- Longitude (generated)
- Number of Records
- Measure Values

Show Me



- Takes some time to get used to interface
- Drag-and-drop to create columns and row for charts
- Shows which data is needed for specific chart

Tableau - Support & Community



- Help and support accessible from the software
- Active online community (forum)

Welcome to the Community Forums

Learn, connect, and enjoy Tableau with over 150,000 passionate users

Search the Community Forums

Search

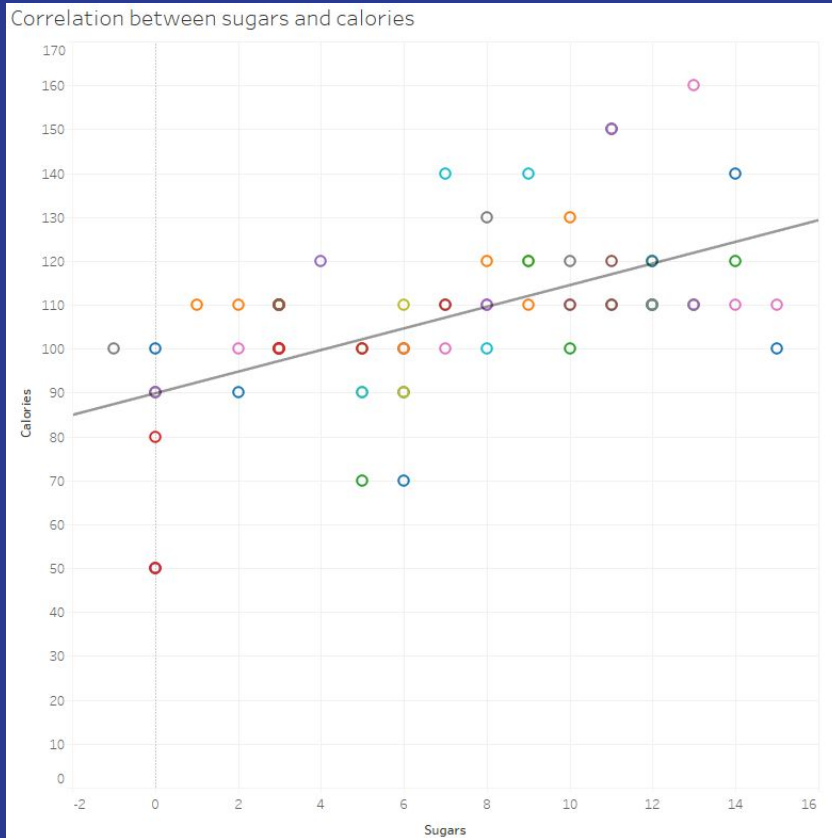


[Sign In](#) or [Create your Account](#)

Become a Viz Whiz on the Forums!
Support the Community and master Tableau.

COMMON TOPICS: [ACTUAL VS BUDGET](#), [CUSTOM ADMIN VIEWS](#), [DATEDIFF AGE](#), [LAST DAY OF MONTH](#), [CUSTOM WEEK START](#)

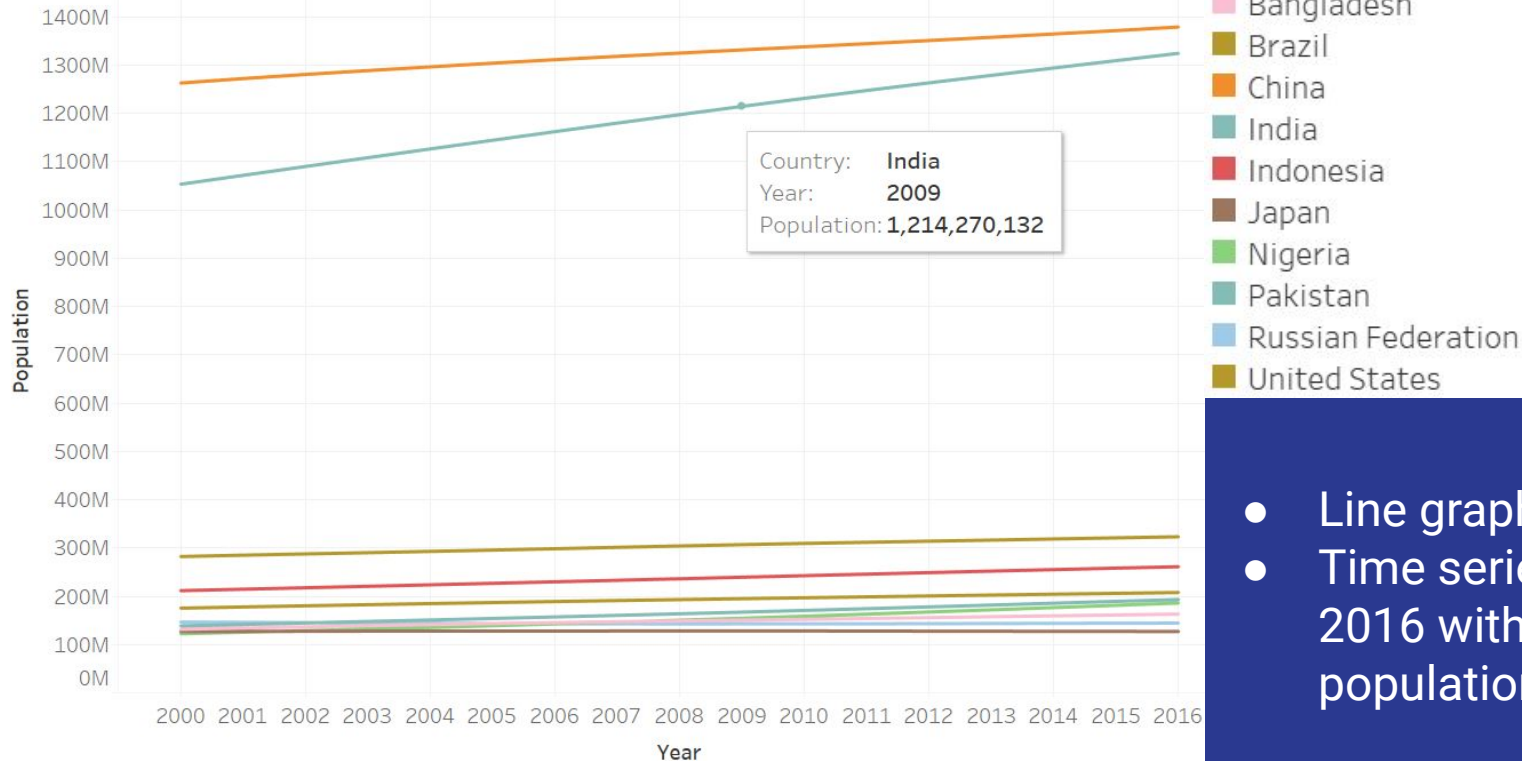
Tableau - Cereal Dataset



- Simple scatter plot
- Do sweeter cereals have more calories?

Tableau - Population Per Country

Population of top 10 countries



- Line graph
- Time series from 2000 to 2016 with change in population count

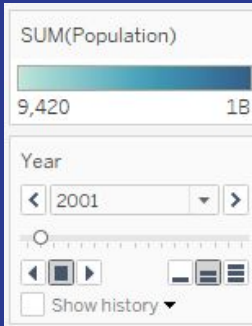
Tableau - Population Per Country

Population per country - 2001



© 2020 Mapbox © OpenStreetMap

34 unknown



- Map graph
- Population of each country in a specific year

Link to full tutorial:

<https://youtu.be/VI09rPx37go>

Qlik



Price (different price brackets)

- \$30 per user per month (up to \$70)
- 30 day free trial; Student version (year)



Privacy

- SaaS, hybrid multi-cloud, on-premise deployment



Features

- One-of-a-kind associative analytics engine (in-memory data indexing)
- AI suggests insights and automatically processes while understanding your questions in natural language
- True scalability



Export & Extensions

- Image & PDF, live interactable report can be shared with collaborators (Qlik users)
- Lots of extensions (e.g. SVG reader that can read data from SVG maps)




Popularity

- Getting more popular by the day; active community

Qlik - Import



















Upload files to this app



Drop a file here or click to select a file

Connect to a new data source

Q Search connectors

 Amazon Redshift	 Amazon S3	 Apache Drill	 Apache Hive	 Apache Phoenix	 Apache Spark
 Azure Storage	 Cloudera Impala	 Dropbox	 Google BigQuery	 Google Drive	 Microsoft SQL Server
 MySQL Enterprise Edition	 Oracle	 PostgreSQL	 Presto	 REST	 Salesforce

Import formats

- CSV
- Text files
- HTML tables
- Excel
- XML
- DIF
- Even manual entry
- Possible to load data through scripting as well

Qlik - Export

Export formats

- Image
- PDF
- Embedded HTML (iframe)
- Sharing a live interactable report & presentation only possible with other Qlik Sense users
- No SVG

Download

Image PDF Data

Preview

Population by Country

1828 x 850 px

Details

Current view

Download

Make sheet public

Download sheet as PDF

Copy link

Link

<https://mauroj.eu.qlikcloud.com/share/c38d46ea-a2c0-4ae8-b805-9dfa6f8cb26d> Copy

The link includes your current selections.

Open in a new tab

Qlik - UI Overview

Prepare Data load editor | Analyze Insights | Narrate Storytelling

Find new insights in your data

Ask us a question

Ask questions such as "What was our revenue last year?" or "Show me total products sold in Germany this year".

You can also let the Qlik cognitive engine generate insights by analyzing your data.

Generate insights

Open Hub | Population

Search

My new sheet

Population by Country

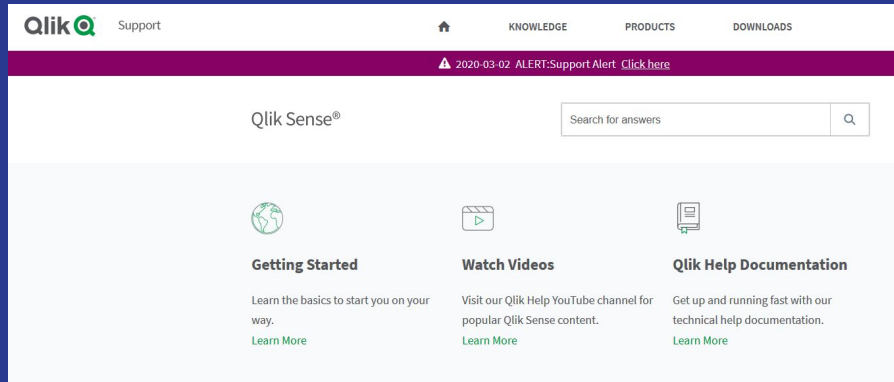
Poland, Kenya, Argentina, Tanzania, Spain, Colombia, Ukraine, Korea, Rep., Myanmar, South Afr..., Italy, Congo, D..., United Ki..., France, Thailand, Turkey

Population by year and c

1.5B, 1B

- Left to right order: Prepare > Analyze > Narrate
- Interactive
- Automatic findings of insights in data
- UI follows the three-click rule

Qlik - Support & Community



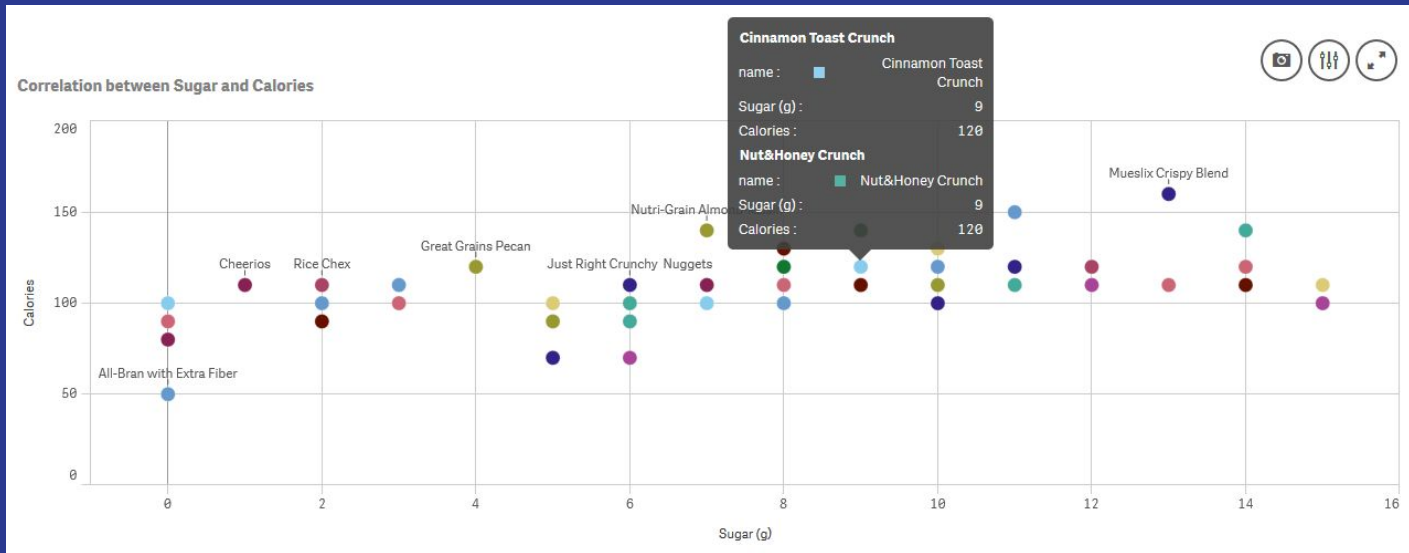
The screenshot shows the Qlik Support website. At the top, there is a navigation bar with the Qlik logo and 'Support' text, followed by links for 'KNOWLEDGE', 'PRODUCTS', and 'DOWNLOADS'. Below this is a purple banner with an alert: '2020-03-02 ALERT:Support Alert Click here'. The main content area features a search bar labeled 'Qlik Sense®' with the placeholder text 'Search for answers'. Below the search bar are three columns of content: 'Getting Started' with a globe icon, 'Watch Videos' with a play button icon, and 'Qlik Help Documentation' with a document icon. Each column includes a brief description and a 'Learn More' link.

- Tutorials and docs accessible online
- Ability to develop extensions directly on the Qlik's Associative Engine



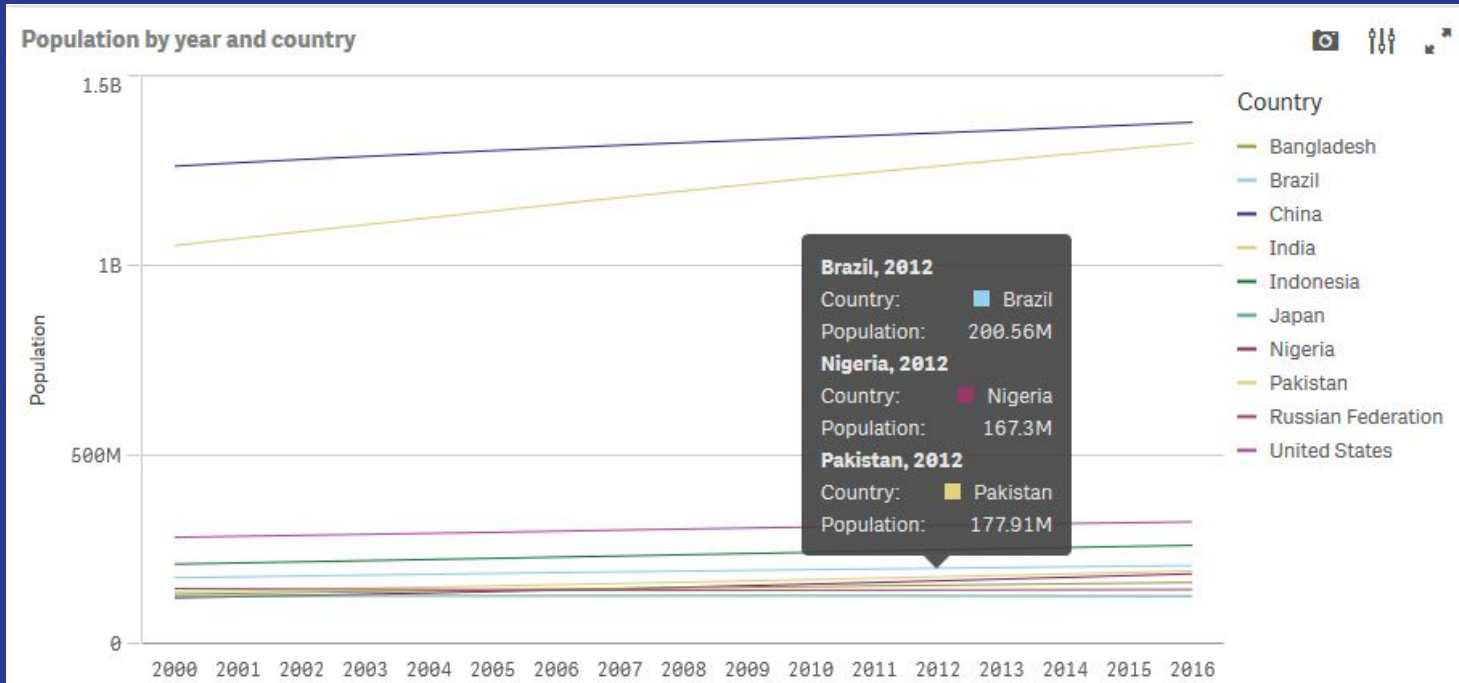
The banner features a background image of a diverse group of people. Overlaid on the image is the text 'Welcome to Qlik Community' in large white font. Below this is a white search bar with a magnifying glass icon and the text 'Search the community...'. At the bottom of the banner, there is a black bar with three statistics: '102,827 Members' (with a group of people icon), '1,134 Online' (with a single person icon), and '1,567,862 Posts' (with a speech bubble icon).

Qlik - Cereal Dataset



- Clean presentation on hover
- No option for a trend line without manually inputting convoluted formulas

Qlik - Population Per Country



- World population from 2000 to 2016
- Difficult to mouse over the right area

Qlik - Population Per Country

Distribution of Population across countries



- Map graph
- Population for 2016

Link to full tutorial:

https://youtu.be/D9ro3XvwJ_w

Power BI



Price

- \$9.99 per user per month
- Free version (Power BI Desktop), 60 day free trial for Pro version



Privacy

- Locally run
- Cloud version



Features

- Excellent visualizations
- Simple user interface
- Windows only



Export & Extensions

- CSV, Powerpoint, PDF, HTML
- No SVG or image export
- Ability to create custom JS visualisations



Popularity

- Used widely- included with Office 365

Power BI - Import

formatted_world_pop_subs.csv

File Origin

1252: Western European (Windows) ▾

Delimiter

Comma ▾

Data Type Detection

Based on first 200 rows ▾



Country	Country_Code	year	Population
Aruba	ABW	2000	90853
Afghanistan	AFG	2000	20093756
Angola	AGO	2000	16440924
Albania	ALB	2000	3089027
Andorra	AND	2000	65390
United Arab Emirates	ARE	2000	3154925
Argentina	ARG	2000	37057452
Armenia	ARM	2000	3069588
American Samoa	ASM	2000	57521
Antigua and Barbuda	ATG	2000	83584
Australia	AUS	2000	19153000
Austria	AUT	2000	8011566
Azerbaijan	AZE	2000	8048600

Load

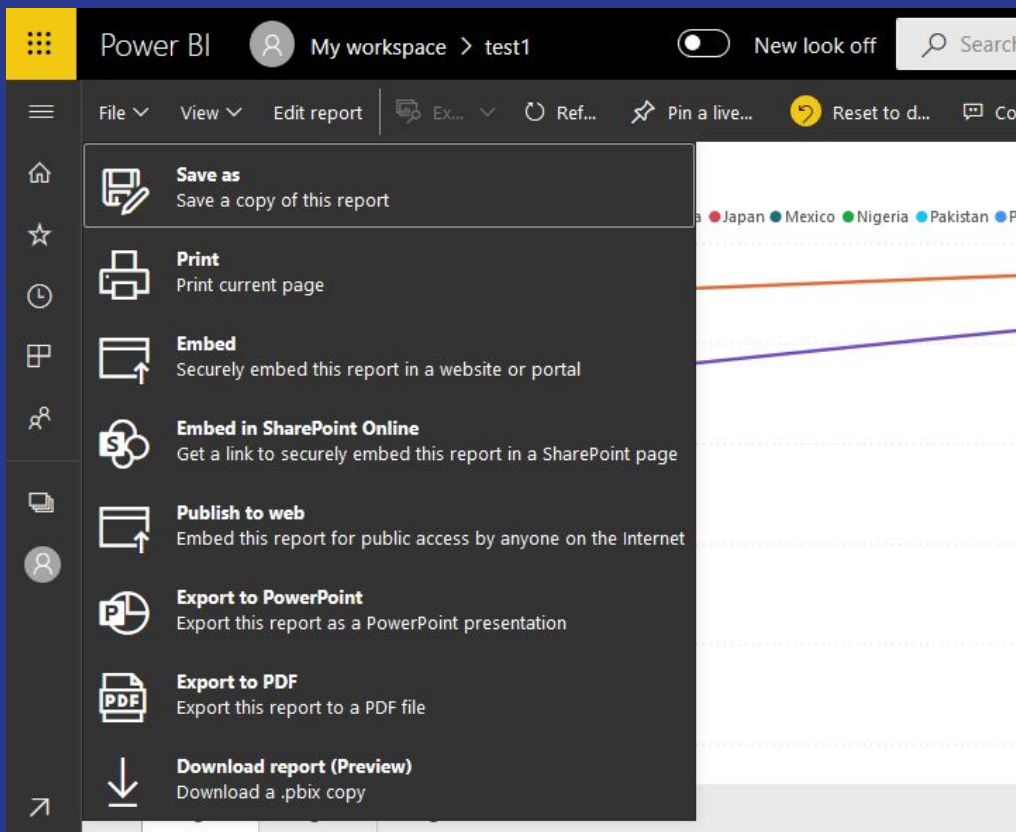
Transform Data

Cancel

Import formats

- CSV
- Excel
- JSON
- XML
- Text
- Others

Power BI - Export

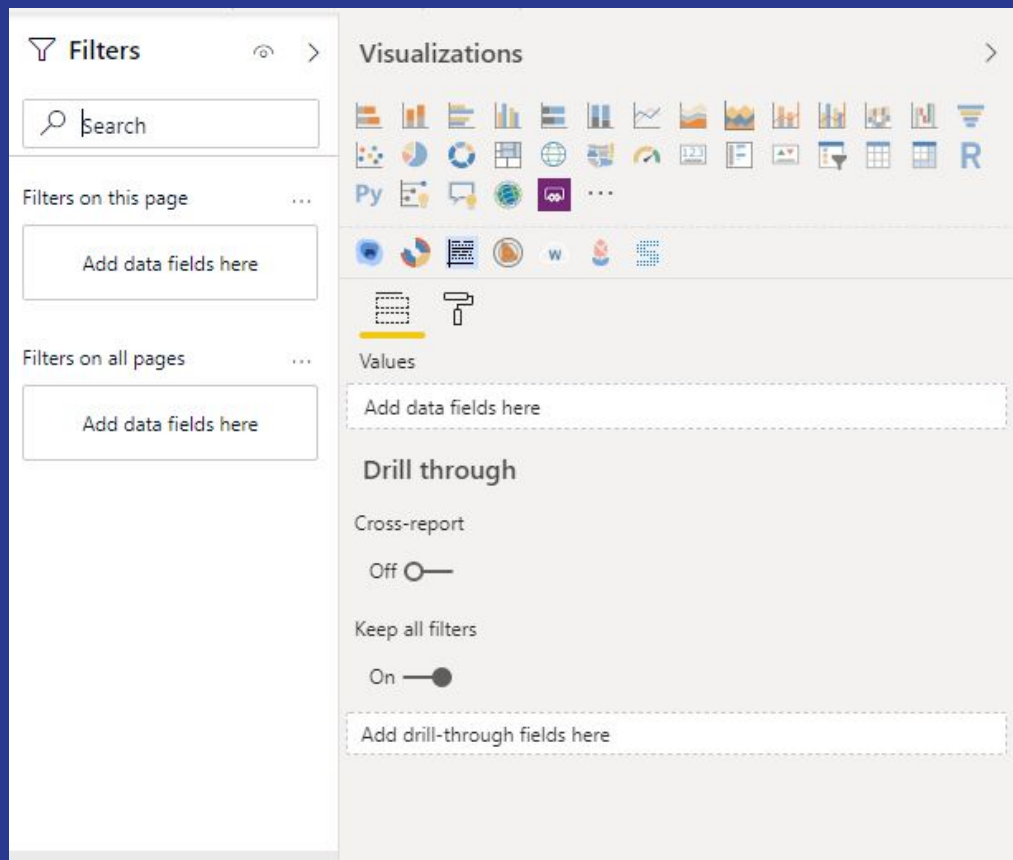


Export formats

- Powerpoint
- PDF
- Embedded HTML
- Shareable links with other Power BI users

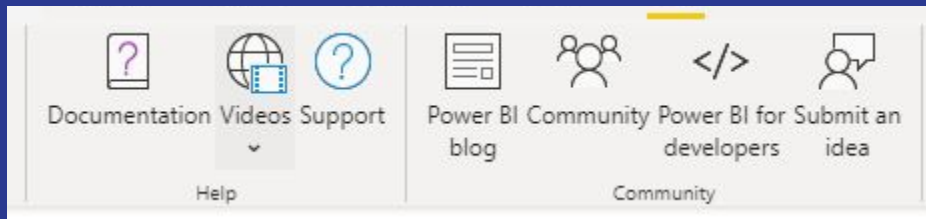
- No SVG
- No image export

Power BI - UI Overview



- Familiar MS-office like UI
- Suggests different kinds of plots and charts

Power BI - Support & Community



- Tutorials and docs accessible from client
- Active online community (~500k forum posts)
- Community custom visualisations

Welcome to Microsoft Power BI Community

Connect, learn and discuss with business intelligence experts and peers.

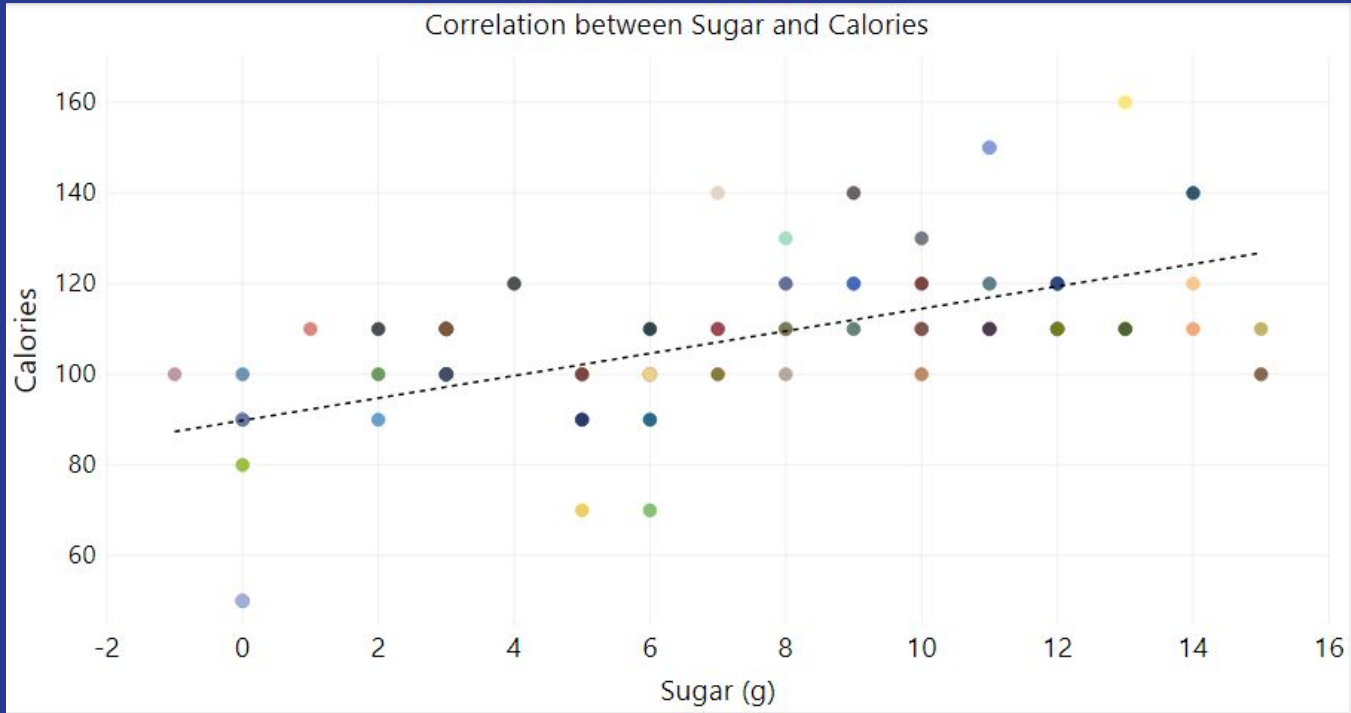
All community



Search all content

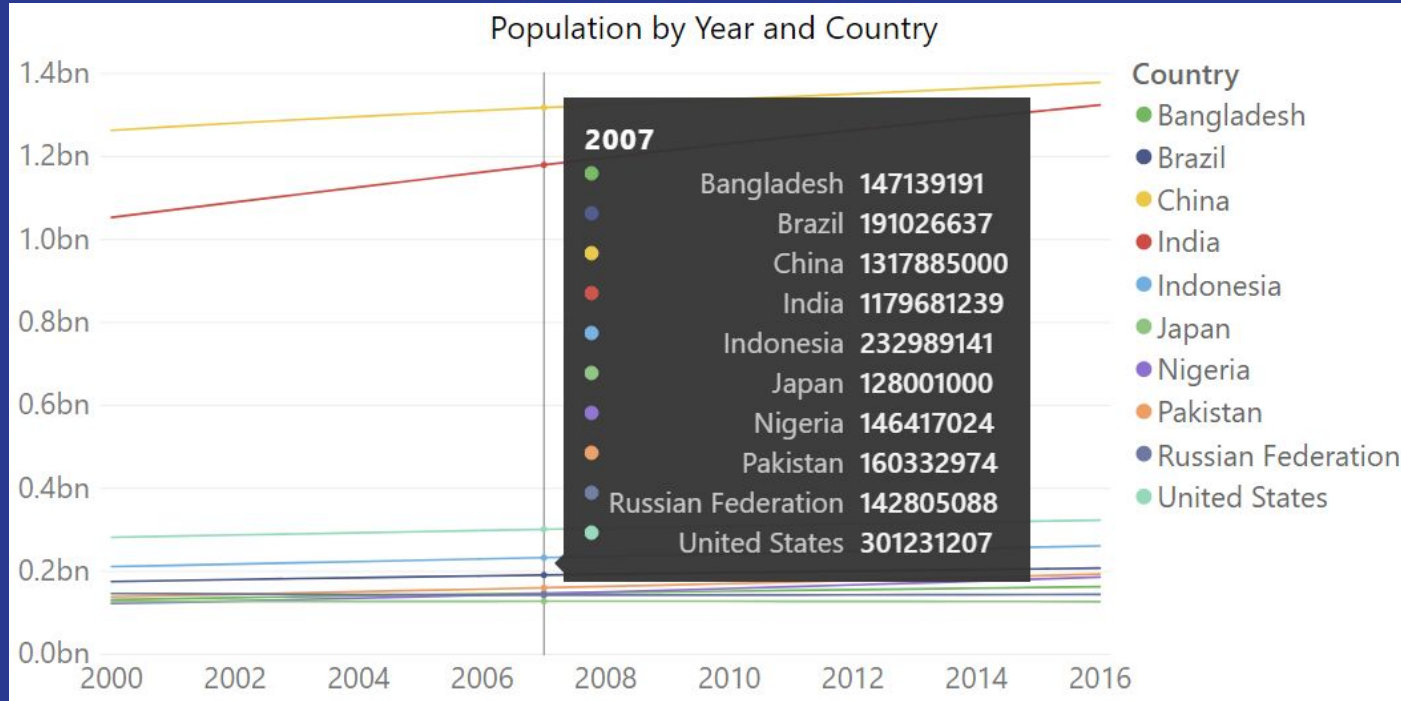


Power BI - Cereal Dataset



- Scatter plot with trend line
- Do sweeter cereals have more calories?

Power BI - Population Per Country



- World population from 2000 to 2016

Power BI - Population Per Country



- Map graph
- Population for 2016
- Unable to color the countries, just circles

Link to full tutorial:

<https://youtu.be/pGkRwzUYGnI>

Spotfire



Price (different price brackets)

- (\$1250, \$650, \$250)/year
- Student version or 30 day trial



Privacy

- Locally run
- Cloud version



Features

- Excellent visualizations, customizations
- Ease of integration with other softwares
- Simple and easy user interface
- Windows, Linux, MacOS



Export & Extensions

- CSV, Excel, PDF
- Addition of the scripts widens the export possibilities (Python, R, SVG, JS)



Popularity

- One of the oldest and most widely used by the big companies
- Big community support

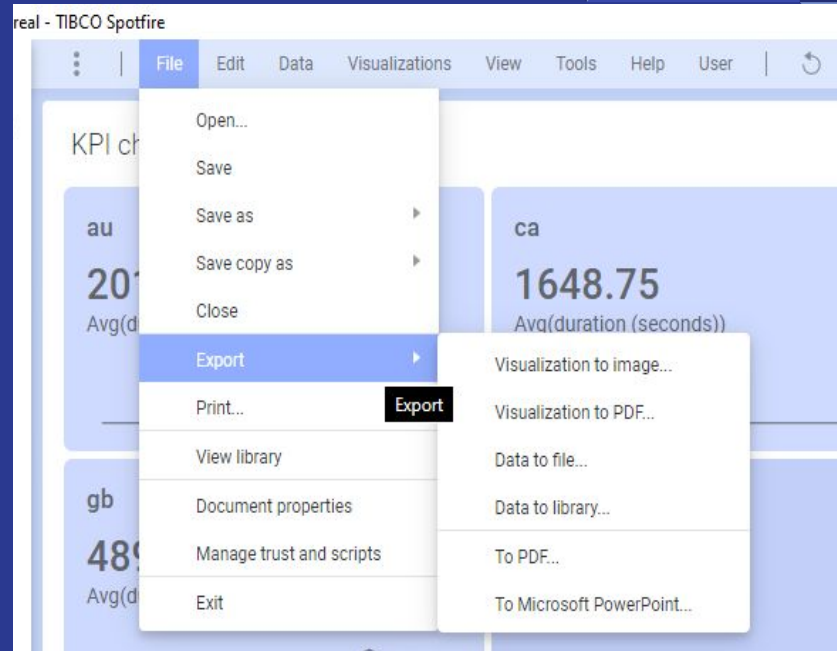
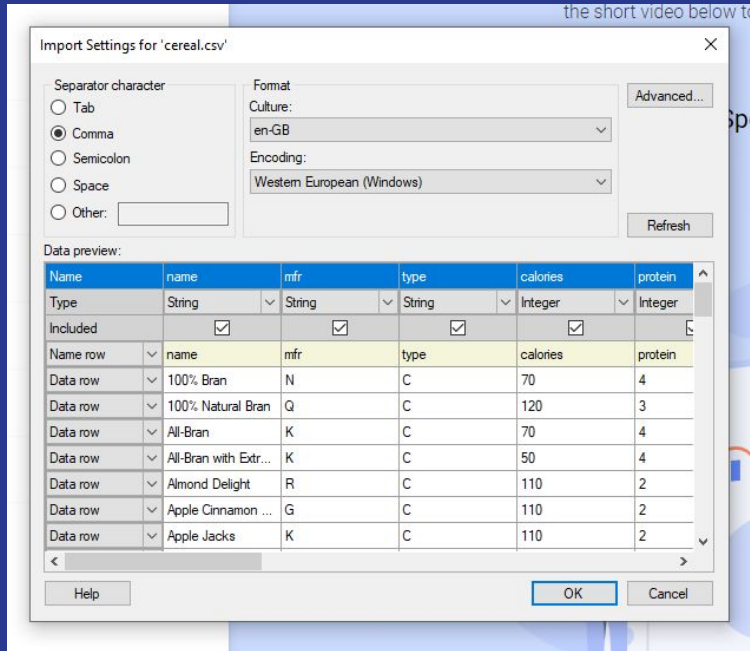
Spotfire - UI Overview

The screenshot displays the Spotfire interface with a search bar at the top containing "Data in analysis...". On the left, a sidebar shows a list of variables under "NUMBERS" and "CATEGORIES". Under "NUMBERS", "carbo", "fat", "protein", and "sugars" are selected with blue bars. Under "CATEGORIES", "name" is selected. The main workspace shows three suggested chart types:

- Create parallel coordinate plot**: Compare protein and fat and carbo and sugars over name. The visualization shows four line plots for "100% Bran", "100% Natural Bran", "All Bran", and "All Bran with Extra Fiber", with axes for protein, fat, carbo, and sugars.
- Create bar chart**: Compare protein and fat and carbo and sugars per name and (Column Names). The visualization shows a grouped bar chart with green and yellow bars.
- Create cross table**: Show protein and fat and carbo and

- Simple user interface
- Leads the user from left to right
 - Import data
 - Choose what data to use
 - Choose graph
- Suggests different kinds of plots and charts

Spotfire - Import/Export



- Editing import data on the spot
- Different data type imports

- Export in elementary data types
- Possibility of connection with custom scripts

Spotfire - Support & Community

Sample analyses



Introduction to Spotfire



Sales and Marketing



Streaming Race Car Data



Analyzing Stock Performance



Configuring Advanced Visualizations



Expense Analyzer Dashboard



Advanced Analytics

- Start menu options to begin with ease
- Simple analysis examples
- Video tutorials
- Tibco Community

3,922 companies

Companies using **Tibco Spotfire**. We have found 3,922 **companies** that use **Tibco Spotfire**.

Start exploring your data

Choose what to work with from the flyout to the left, or check out the short video below to get an introduction.

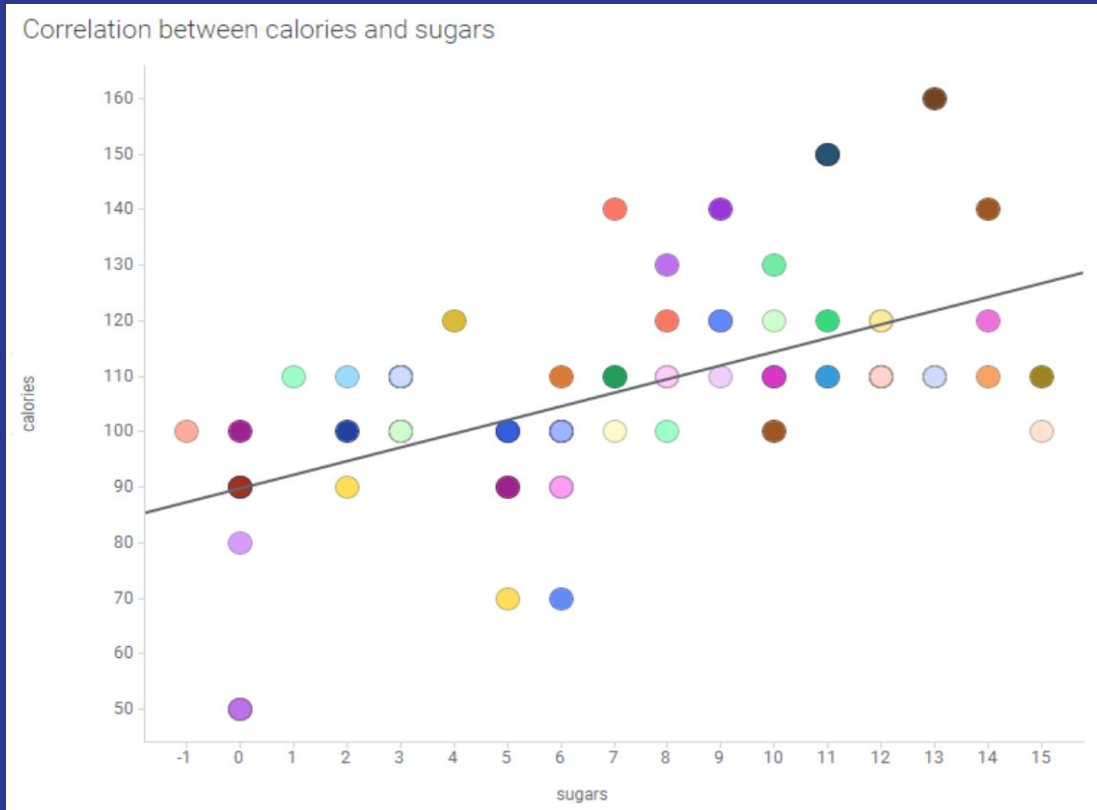


This is Spotfire

- 3 MIN

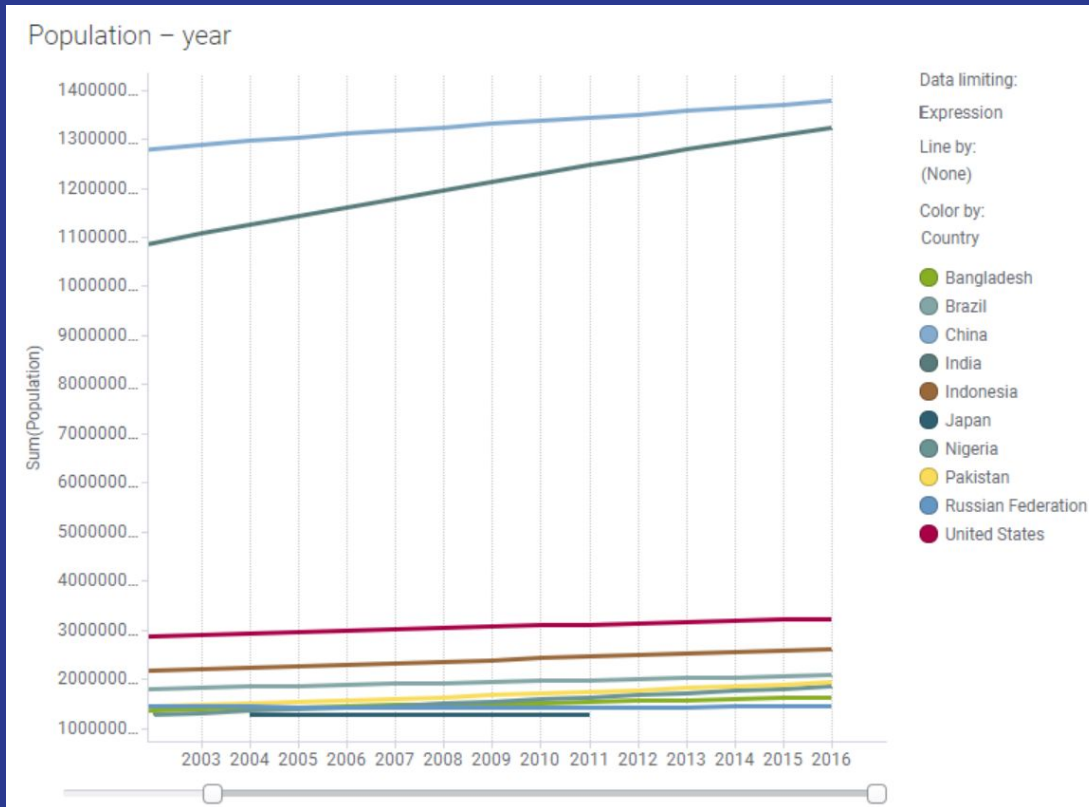
TIBCO[®]Community

Spotfire - Cereal Dataset



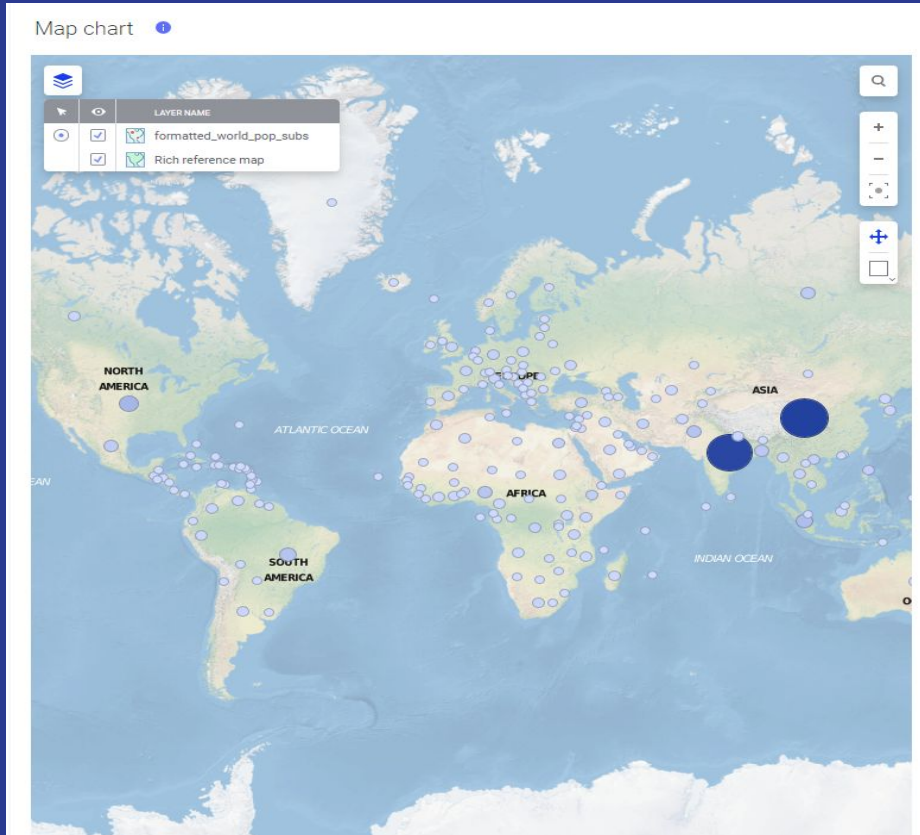
- Simple scatter plot with trend line
- Calories and sugars correlation for every cereal brand

Spotfire - Population Per Country



- Line graph
- Time series from 2003 to 2016 with change in population count

Spotfire - Population Per Country



- Map graph
- Population for each country in a span of a year
- Unable to color the countries, just circles

Link to full tutorial:

<https://youtu.be/0v0sB0JZMW0>

Comparison

Name	Cost	Import/Export	Usability	Community and Support	Overall
Tableau	3	2	4	1	3
Qlik	2	3	2	2	2
Power BI	1	4	3	2	3
Spotfire	4	1	1	1	1

Conclusion

- Spotfire
 - Even with a high price, at least 3,922 companies use it
 - Most often it is companies with 50-200 employees and more than a \$1B dollars in revenue
 - Simple user interface, wide range of import and export, possibilities of adding scripts
- Power BI
 - Included with Office 365
 - More practical for smaller companies
 - Used by over 15,000 small-medium companies
- Qlik
 - Easy to get started with
 - High performance cloud solutions
 - 3,712 companies use it, with 688 of them having more than \$1B in revenue
- Tableau
 - Around 40,000 companies use it, most often with 50-200 employees and \$1M-\$10M in revenue
 - Harder to master, but gives a wide variety of possibilities and customization



Thank you for your time!