

User manual



*Map animation application
of population census data*

Contents

<i>Introduction</i>	3
<i>Default view of the application</i>	4
<i>General functions</i>	5
<i>Visualization windows</i>	6
Map	6
Scatter Matrix.	7
Scatter Plot	7
Table Lens.	8
Data Table.	8
Histogram	8
Time Histogram	8
Distribution Plot.	8
Time Graph	8
Parallel Coordinates	9
Time Series Animation	9
Content Browser.	9
Local Stories	9



Inquiries:

http://www.tilastokeskus.fi/tup/vl2010/kartat_en.html

Kim Huuhko

tel. +358 9 17 341

tietokannat@stat.fi



Introduction

The map animation application of population census data compiles some 60 key variables from population census data that can be viewed through an interactive user interface offering many different ways of visualization. The data can be viewed as maps, scatter plots, histograms, time graphs or data tables. Usually the variable data are available from 1987, so the data can also be viewed through an animated time series.

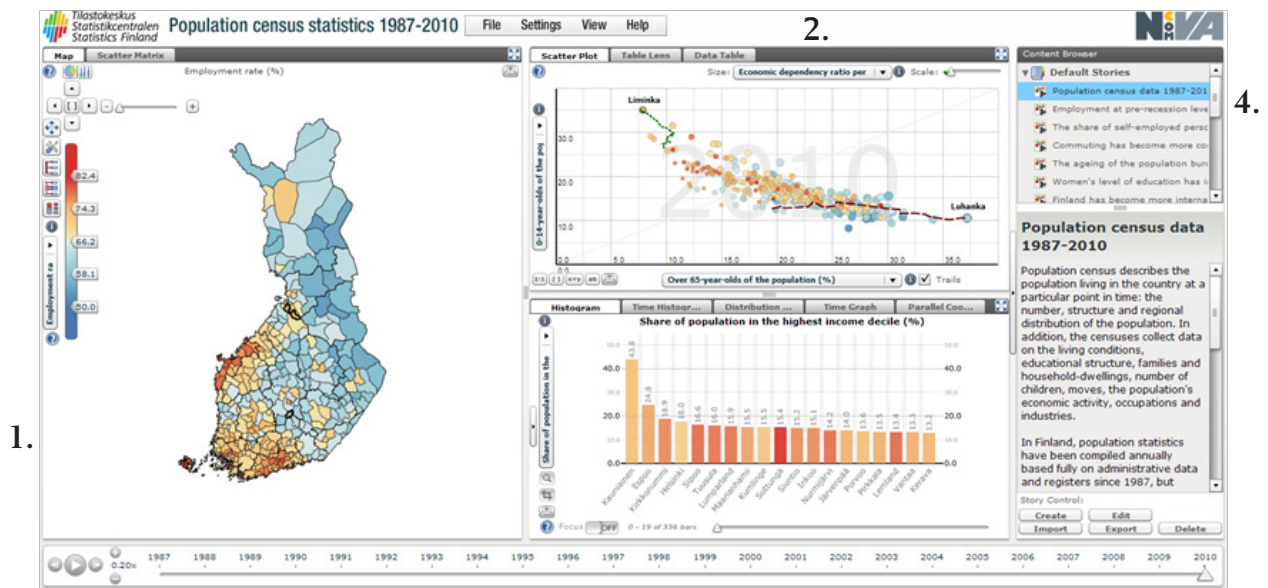
All visualization windows are dynamically connected to one another, so the choices you make in one window are inherited to other windows. Thus you can view the data from many different viewpoints at the same time. This in turn enables you to conceive the dependencies between different variables (also in terms of time and place). The data can also be limited and thus you can focus on particular municipalities or regions.

The map animation application also includes a number of short analyses in which Statistics Finland's experts describe the key changes to the variables related to their field.

The functioning of the application requires that the latest [Adobe Flash Player](#) is installed on the user's browser.



Default view of the application



1.

2.

4.

3.

1. In the default view of the service, the map shows the employment rate for the entire population by municipality for 2010. The colours of the colour scale show how the municipalities rank in terms of the employment rate. In the blue municipalities, the employment rate is low and in the red municipalities it is high.
2. The scatter plot in the top right-hand corner shows the distribution of municipalities in terms of "Over 65-year-olds of the population" on the x axis and "0–14-year-olds of the population" on the y axis. The diagram shows, for instance, that there was a large number of persons aged 0 to 14 in Liminka in 2010 and only a few persons aged over 65, while in Luhanka there was a large number of over 65 year-olds and a few 0 to 14 year-olds.

The relative size of the dots indicating the municipalities is determined by the variable selected from the menu at the top of the chart, in this case "Economic dependency ratio". The colour of the dots is inherited from the variable presented in the map, in this case the "Employment rate" variable. So, from the same scatter plot you can also conclude that both Liminka and Luhanka have a high economic dependency ratio and that Liminka has a higher employment rate than Luhanka.

3. The histogram in the bottom right-hand corner shows the municipalities that have the most high-income earners in relative terms ("Share of population in the highest income decile"). You can see more municipalities in the histogram by scrolling the button at the bottom of the chart. Just like in the scatter plot, the colours in the histogram are inherited from the variable presented in the map.
4. In the "Content Browser" window in the right margin, you can chose to read other short analyses written by Statistics Finland's experts that describe the principal changes in these population census data variables and the social phenomena that affect them. The views in the visualization windows have been tailored by experts to support these analyses.



General functions

Every visualization window has its own drop-down menu where you can choose any of the approximately 60 data variables to view.

Each window has several visualization methods. In the left-hand window, you can select the Scatter Matrix instead of the Map. In the top window, you can select either the Scatter Plot, Table Lens or Data Table view. In the bottom window, you can select either the Time Histogram, Distribution Plot, Time Graph or Parallel Coordinates chart, instead of the Histogram.

All windows can be resized either by using the arrows in the right-hand corner:



or by using the left mouse button to click on the tabs between the windows:



and by dragging them to the desired position.

The content in the windows can be stored as png or jpg images using the print button:



There is a bar at the top of the page, whose menu can be used to limit the data, change the window layout or their settings:



In the "File" menu ("Manage Data"), you can limit the data to review, either by removing variables or by shortening the time series of the variables. The time period to be reviewed can be determined as all data years, only the latest year, the overlapping years for the selected variables, or you can define your own specific start and end years for the time series. The selection is accepted by clicking the "Build" button.

Under "Save Data", the data can be saved on your own computer in text format. In view of further processing, however, it is recommended that you load data from the PX-Web based [database table](#) in connection with the map animation that contains the entire data of the map animation. In PX-Web, data processing, limiting and storing functionalities are clearly more efficient and versatile than in the map animation application itself.

You can change the language of the user interface under "Language" in the "Settings" menu. However, the content of the map animation itself is only available in English in this version.

You can use the "Filter" section to filter data by choosing only the municipalities of one or certain regions for review.

You can change the colour scale of the variable presented in the map under the "Color Legend" -> "Settings".

You can build pie charts or bar charts on top of the map using the "Map Settings" section.

In the "View" menu you can, for instance, change the window layout.

Please note that any time you close or update the browser window, the application returns to the default view and any selections and settings you have made disappear. If you wish, you can also save your own views in the application either into the session memory or on your own computer for more long-term use. (See Local Stories p. 9).

Visualization windows

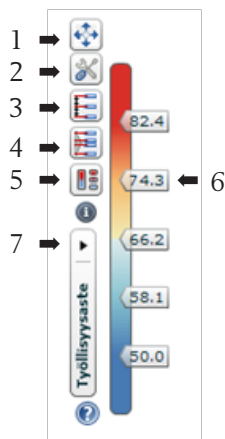
Map

There is a zooming tool in the top left-hand corner of the map:



You can move the map with the arrows in the zooming tool. You can also drag the map with your mouse by holding the left mouse button. The - button zooms out and the + button zooms in. The scroll bar between the buttons can also be used for zooming. The [] button restores the map to the default view.

There is a color legend bar next to the map:



1. You can move (drag) the color legend from the arrow button.
2. The second icon allows you to define the colour scheme used in the colour scale.



3. The third icon allows you to define the colour scale to correspond with the uniform distribution, which means that the scale is divided evenly between the variable's minimum (dark blue) and maximum values (red). This is an efficient and clear way to present the data, especially in cases where the variable distribution is stable. Using the uniform distribution can cause problems if the variable values are not divided evenly (e.g. if there are deviating observations or if the variable distribution is strongly skewed). In this case, a majority of the colour scale represents a small set of data and a large portion of the data is located in a small area on the colour scale. The default scale for this map animation service is a uniform distribution divided into six sections.
4. The fourth icon can be used to define the colour scale to correspond with the percentile distribution, which means that the colour scale is divided into intervals in accordance with the data value distribution (e.g. the 10th, 50th and 90th percentiles). This often results in a better colour scale that is based on the distribution of the data. This improves the visual image of the map so that the differences between different areas can be more easily detected in cases where the variable distribution is strongly skewed or otherwise uneven.

The danger when using the percentile distribution is that if a majority of the variable values are close to one another, the visual image of the map can overemphasise these differences. Which of these two classifications of the colour scale is better is determined by the variable to be viewed and, on the other hand, by which characteristics of the data you want to emphasise in the map.

5. The fifth icon only changes the appearance of the scale.
6. The values of the colour scale can also be changed dynamically by moving (dragging) the handles (scale values) of the color legend bar. The user can also click on a value in the scale and determine the value from a pop-up field. This method is suitable, for instance, for determining the zero value in the colour scale where colours that differ from one another are used (e.g. blue and red).
7. The variable to be shown on the map can be changed from the black arrow in the color legend bar.

Scatter Matrix

The Scatter Matrix shows the dependencies between all the variables selected from the data. Each window shows the municipality distribution in terms of the selected variables. You can select any individual Scatter Plot with the left mouse button, which will open up the diagram in the top right-hand corner as an individual Scatter Plot. The variables presented in the Scatter Matrix can be selected under "Indicators".

Scatter Plot

The Scatter Plot in the top right-hand corner shows the distribution of municipalities in terms of the variables chosen for the x and y axes. The colour of the dots representing the municipalities is inherited from the colour scale of the variable presented on the map. The size of the dots can be determined from the drop-down menu on top of the diagram to correspond with the values of some other data variable. From the slider scale above the diagram, you can determine the general size scale that applies to all dots. From the buttons below the Scatter Plot:





you can scale the view included in the window. You can also determine the window yourself by holding the left mouse button while moving the mouse. When the window shows the desired section, just release the mouse button. You can return to the default view by clicking the button at the bottom of the window.

You can select individual municipalities by clicking the left mouse button in the Map window or Scatter Plot. You can select several municipalities at once by holding down the ctrl key. By selecting "Trails", you can see the trails of the selected municipalities in terms of time.

Table Lens

In the Table Lens, you can sort and filter municipalities based on the distributions of different data variables. The municipalities are sorted by clicking on the heading of the desired variable. You can limit out municipalities from the variable's distribution by painting (hold the left mouse button and move the mouse). The button at the bottom can be used to remove the selected municipalities or to remove all but the selected municipalities. The filtering will also be transferred to all other windows.

Data Table

In the Data Table window, you can view the data numerically in table format.

Histogram

In the bottom right-hand window, data can be viewed as Histograms. There is a slider at the bottom of the chart and when you move the slider, you will see all municipalities. There is a focus button to the left of the slider, which you can use to change the scrolling technique of the Histogram. The alternative scrolling technique is based on a focus and context method where the bars outside the focus area are presented as thin lines in the background. In this scrolling technique, the focus is dragged between the arrows that determine the focus area in the slider.

The menu bar on the left side of the Histogram can be used to change the variable that is presented in the chart. The values of the Histogram are by default sorted based on this variable. The colours in the Histogram are by default inherited from the variable shown in the Map, which means that you can see the dependency between these two variables in the colouring of the Histogram.

There is a black arrow in the middle of the bar on the left side of the Histogram, under which you find two hidden control panels: Histogram Settings and View Settings. The Histogram Settings can be used to select several variables to be shown at once and to determine which is the sorting variable, or alternatively to build a stacked view using these variables. The View Settings can be used to change the direction of the bars or to make other changes to the layout of the chart.

Time Histogram

The Time Histogram works like the Histogram but instead of all municipalities, it shows the values of the selected municipalities as time series consisting of bars. If you select only one municipality you can alternatively view the development of several variables in the same Time Histogram.

Distribution Plot

The Distribution Plot shows the distribution of the municipalities, and the minimum, maximum and mean values by region.

Time Graph

In the Time Graph, you can view the development of the selected municipalities as time series.



Parallel Coordinates

The Parallel Coordinates chart shows the placement of the municipalities you selected in proportion to the distribution of all municipalities for the selected variables. The lines of the shown municipalities can be filtered by moving the minimum and maximum handles of each variable.

Time Series Animation

Data can also be reviewed in terms of time with the dynamic animation function at the bottom of the page. The animation starts and stops with the play/pause button. The play speed of the animation can be defined with the – and + buttons. The Step Left and Step Right buttons can be used to skip back or forward by one year. The year can also be selected by moving (dragging) the triangle-shaped indicator.

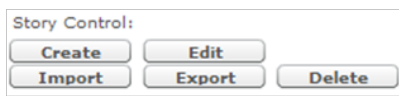


Content Browser

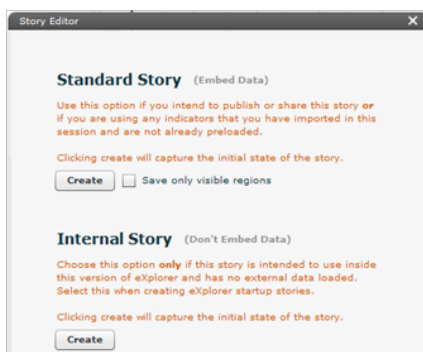
In the right-hand corner of the page, you find the "Content Browser" window, whose "Default Stories" directory contains a group of articles written by Statistics Finland's experts. The views in the visualization windows linked to the articles have been tailored by experts to support these texts.

Local Stories

You can also store your own views in the application by using the "Create" button found in the bottom right-hand corner:



Click the "Create" button under "Standard Story" in the Story Editor that opens up.



If you wish, you can now also store text, links and other views, etc. When you click the "Save" button at the bottom, these texts and various visualization windows with the current settings and limitations are stored into the session memory. These saved views can be found during the session at the "Content Browser" window at the top right-hand corner of the page under "Local Stories".

If you wish to store these views more permanently, press the "Export" button in the bottom corner and save the xml-file that is generated on your own computer. When you want to revisit the view you have saved, open the map animation in your browser and select "Import" from the bottom right-hand corner of the page.