

Getting started with TOSMANA

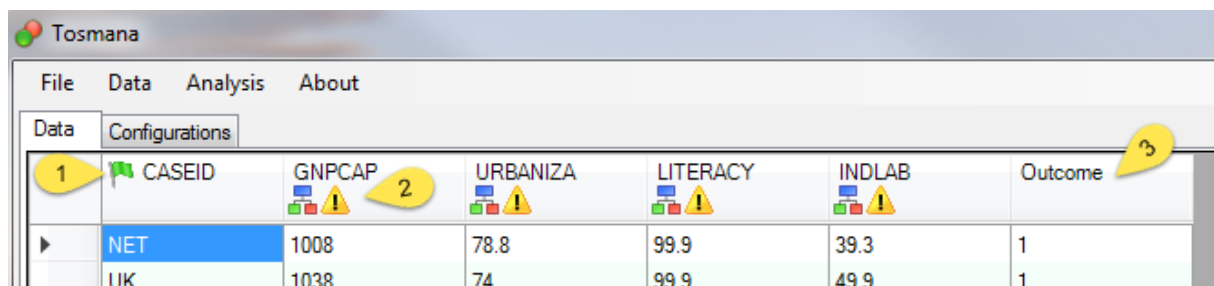
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This document illustrates a first simple use of *TOSMANA* for csQCA. It aims to clarify the import of data as well as all steps necessary for a complete analysis. The text describes the main functions of the software, but it does not cover all features of *TOSMANA*. Please refer to the manual found on the *TOSMANA* website for further information.

Created on June 28th 2016 based on: Cronqvist, Lasse. 2016. Tosmana - Tool for Small-N Analysis [Version 1.4]. University of Trier. Internet: <http://www.tosmana.net> (Published: Juni 21st 2016). The data included is taken from: Rihoux, Benoît; De Meur, Gisèle (2009): Crisp-Set Qualitative Comparative Analysis (csQCA). In: Benoît Rihoux und Charles C. Ragin (Eds.): Configurational comparative methods. Qualitative comparative analysis (QCA) and related techniques. Los Angeles: Sage, pp. 33–68, data from p. 41. The data can be found in the download section on the *TOSMANA* website (*Getting started with TOSMANA (incl. example data set)*)

The following steps do illustrate the import of data to *TOSMANA* as well as the procedure for a simple csQCA analysis with the software:

1. The simple way to include data with *TOSMANA* is to copy data directly from a spreadsheet program. To do so, open the data set in a spreadsheet program. *Select* all cells with data in the data set and *copy*. Please remember to include variable names in the first row.
2. In *TOSMANA*, select *File>Import from Clipboard* in the menu. The data will be loaded to the software and will replace existing data. After the successful import, you should save your file in the format used within *TOSMANA* (*File > Save As*). The software saves the data as a XML-File, so you can edit the data outside of *TOSMANA* with a XML-Editor as well.
3. *TOSMANA* tries to identify the type of data imported. A variable containing string data will be marked as a possible case identifier with a green flag (1, this is the case for *CASEID* in this example). In addition, metric data is identified and marked with a subdivision symbol (2, here e.g. *GNPCAP*). The yellow warning sign indicates that the condition has no thresholds attached to it yet.



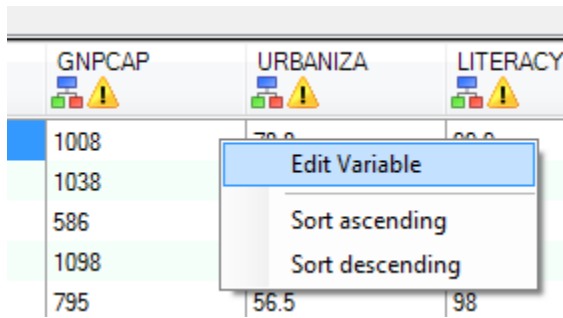
The screenshot shows the TOSMANA software window with a menu bar (File, Data, Analysis, About) and two tabs: Data and Configurations. The Data tab is active, displaying a table with the following data:

	CASEID	GNPCAP	URBANIZA	LITERACY	INDLAB	Outcome
	NET	1008	78.8	99.9	39.3	1
	UK	1038	74	99.9	49.9	1

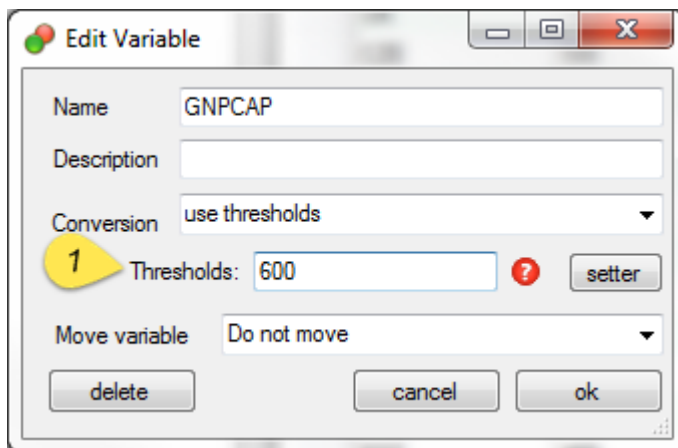
Annotations in the screenshot include a yellow callout '1' pointing to the CASEID column header, a yellow callout '2' pointing to the GNPCAP column header, and a yellow callout '3' pointing to the Outcome column header. Warning icons (yellow triangles with exclamation marks) are present in the cells for GNPCAP, URBANIZA, LITERACY, and INDLAB.

If the software does not show a flag or a subdivision symbol, *TOSMANA* will use the data as it is for analysis (this is the case for *Outcome*, 3).

4. Before performing a QCA calculation, you have to define thresholds for conditions with metric data. To do so, click on the column header and select *Edit Variable* in the opening context menu.

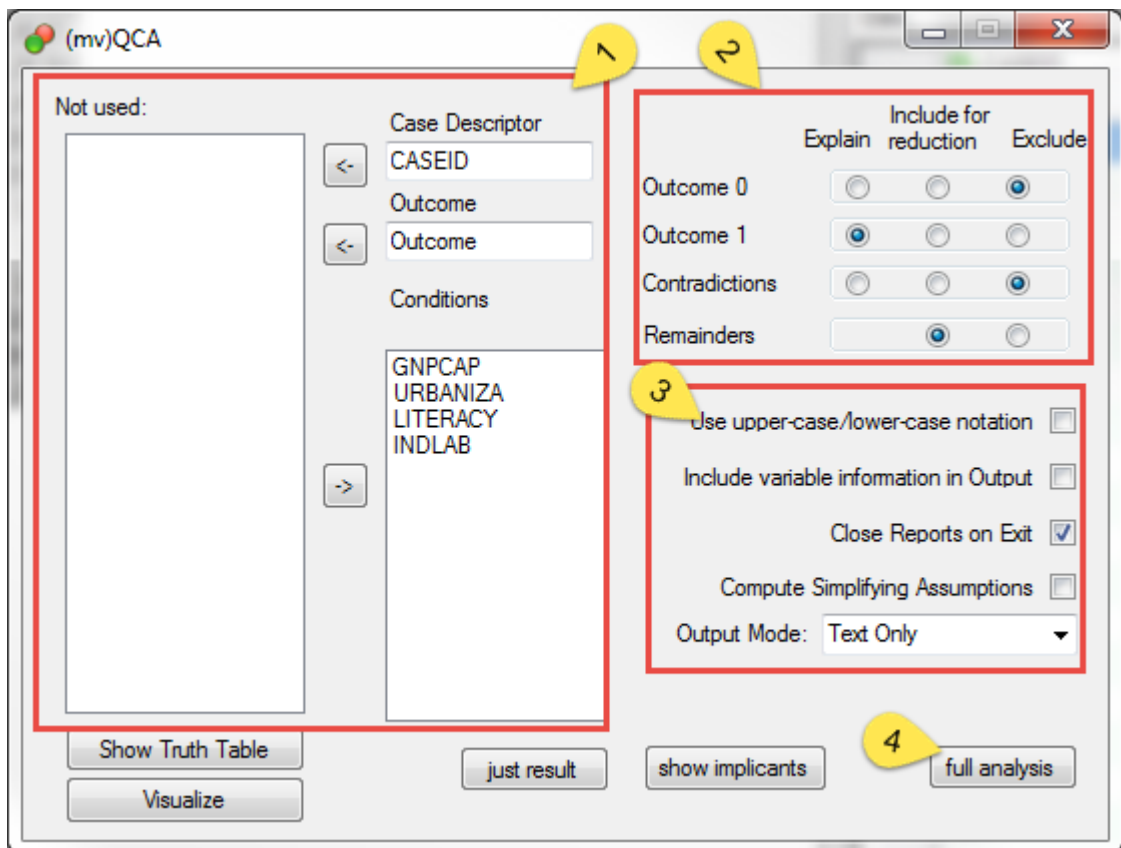


5. The *Edit Variable* dialogue opens and you can set a number of properties. To set a threshold for a specific condition, *use thresholds* must be set as value in the *Conversion* drop-down box. To use a multi-valued condition, enter the different threshold with a semicolon as divider (e.g. 300; 500).



In addition, you can use the *Thresholdsetter* to define the thresholds. Press the *setter* button to open this tool, which displays the distribution of data for the variable selected and thus allows a simple review of the data included. The thresholds will show up in the data view instead of the warning sign after confirmation in the *Edit Variable* window.

6. After the preparation of the data set, the QCA calculations can be started by calling *Analysis > Start (mv)QCA* from the menu bar or by pressing the *F9* key. The mv(QCA) Windows opens, where the settings for the analysis are defined. First, select the conditions, the outcome and the case descriptor (Area marked 1). Then, select the outcome value to be minimized (*explain*) and whether logical remainders should be included or not (Area marked 2). In addition, a number of options regarding the output of the calculations can be defined this window (Area marked 3). Press the *full analysis* (4) button to perform the QCA calculations.



Use the other buttons to retrieve the results only (*just results*) or to show the list of prime implicants (*show implicants*). The button *visualize* calls a graphical illustration of the data distribution (related to a Venn-Diagram). Finally, it is also possible to display the truth table only (*show truth table*).

Resources

For further information, see the manual for TOSMANA:

Cronqvist, Lasse (2016): TOSMANA Manual. Version 1.4. Trier. Available online: <http://www.tosmana.net>.