

Getting started with TOSMANA

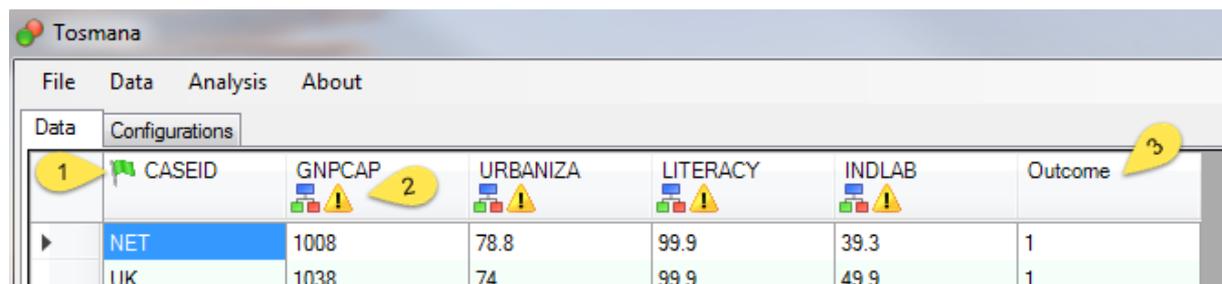
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This document illustrates a first simple use of *TOSMANA* for csQCA. It aims to clarify the import of data as well as all steps necessary for a complete analysis. The text describes the main functions of the software, but it does not cover all features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

Description based on: Cronqvist, Lasse. 2018. Tosmana [Version 1.6] University of Trier. Internet: <http://www.tosmana.net> (Published: September 14th 2018). 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 characters 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.



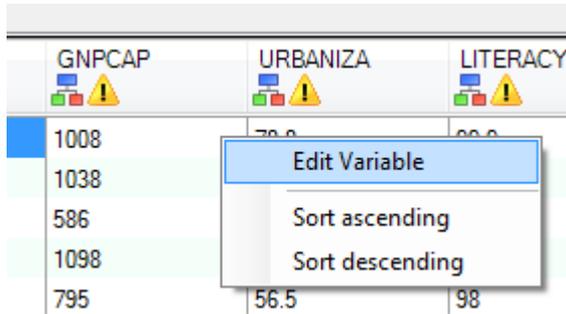
The screenshot shows the TOSMANA software window with a menu bar (File, Data, Analysis, About) and a toolbar. The main area displays a table with the following data:

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

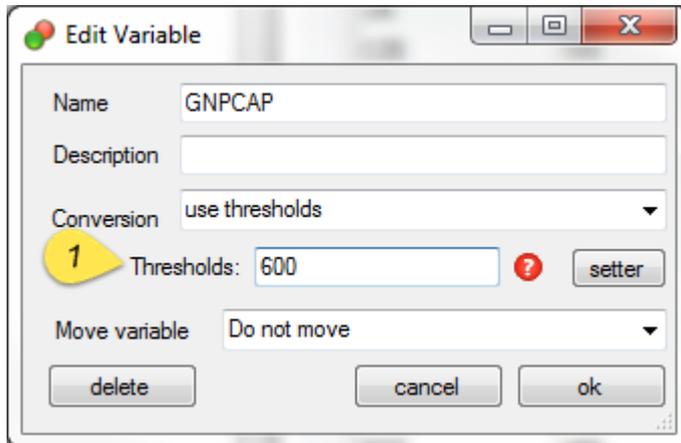
Annotations in the screenshot include a yellow callout '1' pointing to the CASEID header, a yellow callout '2' pointing to the GNPCAP header, and a yellow warning sign pointing to the Outcome header.

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.

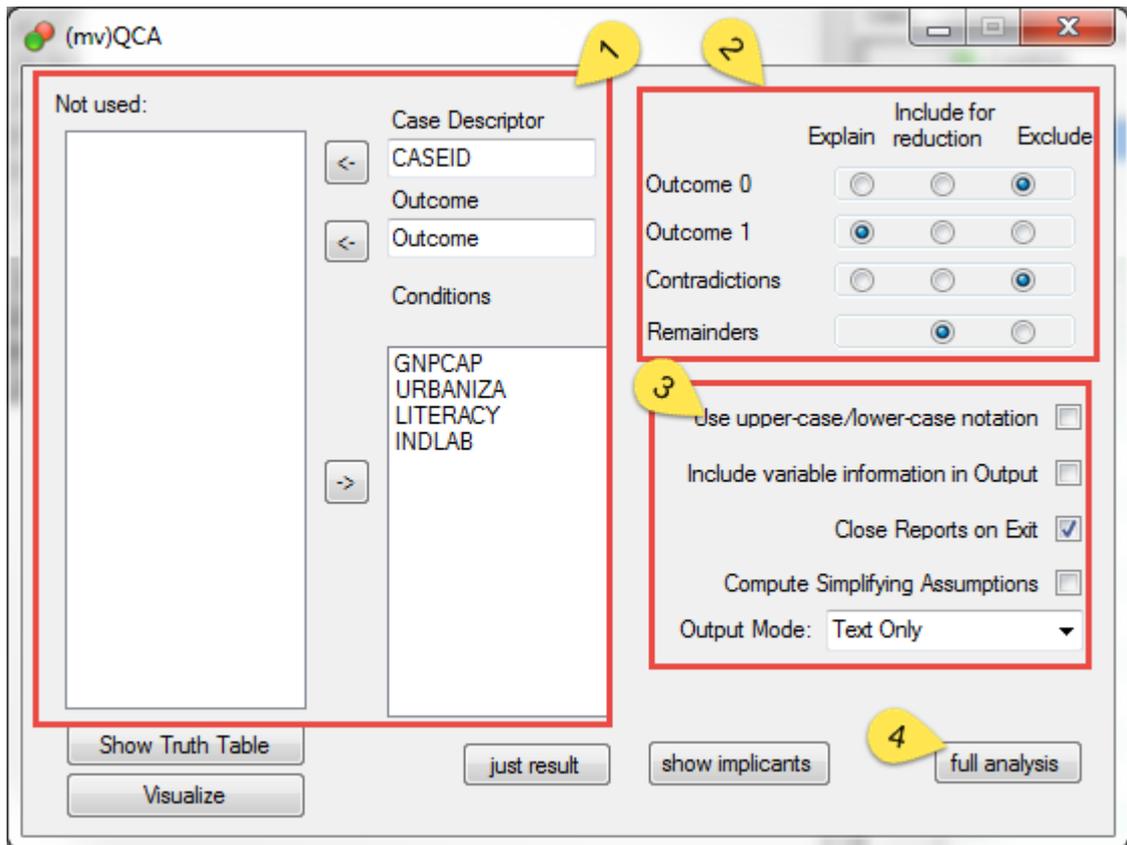


5. The *Edit Variable* dialogue opens and you can set a number of properties. To set a threshold for a specific condition, *use thresholds* must be set as value in the *Conversion* drop-down box. To use a multi-valued condition, enter the different threshold with a semicolon as divider (e.g. 300; 500).



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 1.5. beta Trier. Available online: <http://www.tosmana.net>.