

ATLAS.ti 6

The New Features

Co-Occurrence Explorer



atlas.ti
the knowledge workbench

Software for qualitative data analysis,
management, and model building.



The Co-occurrence Explorer

The standard tool for asking more complex questions has always been the Query Tool. It lets you combine codes in a number of different ways, using a total of 14 operators to look for patterns, overlaps, sequences and the like in your data. The results of a query (provided it yields anything at all) are always quotations.

There are however situations where one would like the software to tell you which codes co-occur, instead of having to decide about possible combinations up front.

This is when the co-occurrence explorer comes in. The Co-occurrence Explorer looks for codes that co-occur in the margin area combining the operators WITHIN, ENCLOSES, OVERLAPS, OVERLAPPED BY and AND.

Understanding Co-occurrence

Scenarios

Let's consider the following example projects:

Example 1

A media analysis focusing the presentation of environmental issues in various European Newspapers and adverts. The coding schema included 21 quality of life indicator codes like health, work, family, power, money, leisure time, adventurous life etc. and 7 codes for various images of nature like mother nature, recreational aspect of nature, nature as threat, etc. A question of interest was to find out which quality of life indicators were coded together with what kind of nature image. This means 21 x 7 queries in the Query Tool, or one look at the Co-occurrence Explorer.

In order to focus the view, all 28 codes of interests were added to a code family. This family was then set as filter before the Co-occurrence Explorer was opened.

Example 2

EU parliamentary debates were coded for different discussion and speaking styles, namely 15 arguing and 15 bargaining styles. The various speakers and types of speakers like foreign ministers, NP, layers, etc. were coded as well. Thus, within each speaker code various style codes were embedded. With the help of the Co-occurrence Explorer it was easy to see which

arguing and bargaining styles were used by which group and person. As in example one, appropriate code families were created and set as filters before running the tool.

Example 3

In an interview study with women that had achieved leadership positions in their careers, a number of barriers were mentioned (11 codes) and also a number of gender issues (10 codes). Similar as in the previous examples, the question was which of the barrier issues and which of the gender issues were raised together in the data. All 21 codes were added to a code family, this family was set as filter and then the Co-occurrence Explorer was opened.

Compared to quantitative analysis procedures, the Co-occurrence Explorer is like a cross-tabulation of variables. When creating cross-tabulations, you usually select a subgroup of variables and do not throw in all variables to see where there might be a correlation. If we were to do that, statistically speaking, we would probably find significant relations. However, some of them will just occur by pure chance. The same applies here. The fact that two codes co-occur in the margin does not provide meaning per se. To obtain meaningful results, you need to select some codes before running the analysis. A basis for such a selection may be a research question or hypothesis you have in mind; some theoretical considerations or previous analysis results may lead you to believe that something interesting is going on at places in the data where certain codes co-occur, etc. As mentioned above, you select sub groups of codes by creating appropriate code families and by setting this family as filter.

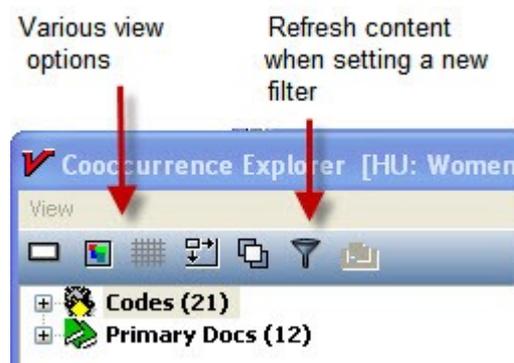
There are two views for the Co-occurrence Explorer, a tree view and a table view.

The Co-occurrence Explorer Tree View

- To open the Co-occurrence Explorer as Tree View, select **TOOLS / COOCCURRENCE EXPLORER / TREE EXPLORER** from the main menu.

As shown in the examples above, it usually is necessary to create a code family including the codes of interest and to set this family as filter via **CODES / FILTER / FAMILY....** You are not likely to yield any meaningful results if you correlate everything with everything else.

The Tree View only shows the root objects when you open it. When you expand the branches, you see which codes co-occur and you see which of these codes occur in which PD. If you expand the branches further, you see the associated quotations. If you click on a quotation, it is loaded and you can view it in context.



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Interpreting Co-occurrences

As in the Query Tool, the smallest unit for the results of a query is the coded segment, i.e. the quotation. If two codes co-occur, the output will always show both co-occurring segments. In the example shown below these are the codes: gender equality_problems and barriers_age | barriers_institutional. As the overlapping area is not a quotation., the output gives you the data segment coded with gender equality_problems AND the segment coded with the two barrier codes. The codes co-occur within paragraph 59 (data source: doc file). In terms of counting, here you have only 1 co-occurring event.

This also applies if one of the co-occurring coded segments is embedded within another segment. The output shows two quotations, for one co-occurring event.

The Co-occurrence Explorer Table View (Preview)

In addition to the hierarchical tool for exploring code-code co-occurrences a table based view permits detecting such evidence at a glance.

NOTE: The Co-occurrence Explorer as Table View is disabled when ATLAS.ti 6 first ships but will be provided with one of the next service packs in the very near future.

- To open the Co-occurrence Explorer as Table View, select **Tools / COOCCURRENCE EXPLORER / TABLE EXPLORER** from the main menu. The output looks as follows:

The screenshot shows the ATLAS.ti Code Cooccurrence Table window. It features a grid with columns and rows representing different codes. The columns are labeled with codes like 'barriers_women', 'gender equality', 'gender equality_problems', 'gender inequality', 'gender issue', and 'gender_fem'. The rows are labeled with codes like 'barriers_academia', 'barriers_access', 'barriers_age', 'barriers_attitude', 'barriers_family history', 'barriers_financial', 'barriers_gender', 'barriers_institutional', 'barriers_motherhood / family', 'barriers_overcoming', 'barriers_salary', 'barriers_women', 'gender equality', 'gender equality_problems', 'gender inequality', 'gender issue', 'gender_female perspective', 'gender_male perspective', 'gender_male territory', 'gender_relation women - women', 'gendered culture', and 'gendered culture_effect'. The grid cells contain numerical values representing co-occurrences. A green arrow points to the 'Select Column Codes' list on the left, with the text 'Create super codes based on co-occurring events'. Another green arrow points to the 'Select Row Codes' list, with the text 'Select codes to be displayed in the table'.

Coloring helps in detecting co-occurrences. Corresponding quotations can be activated by clicking into the tables cells.

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The screenshot shows the ATLAS.ti Code Cooccurrence Table window with a quotation highlighted. The quotation is "ercome me and so there vent. And I must say the ne head of school and left niverse and I got it right." The quotation is highlighted in blue. A green arrow points from the quotation to the "gender issue" cell in the table. Another green arrow points from the "barriers_access" cell in the table to the quotation. The table shows co-occurrences between codes, with the "gender issue" cell highlighted in blue and the "barriers_access" cell highlighted in green.

Output in others Formats

The results of a co-occurrence analysis can also be outputted as RTF file. You find this option under **CODES / OUTPUT / PRINT COOCCURRING CODES**. You can output just the codes, or the co-occurring codes including the associated quotations in list form.