Media Reviews

Microsoft Office Excel Spreadsheet Software.
http://office.microsoft.com/en-us/excel/default.aspx

Spreadsheet Software Can Facilitate Mixed Methods Research—Using Old Tools in a New Context!

Microsoft Excel is well-known spreadsheet software that provides powerful tools one can use to systematize, analyze, visualize, share, and manage information to make more informed decisions or conclusions that are better grounded by data. The aim of this review is not to introduce the newest features of the last version of the software released in 2007 but to share some experiences of how Excel and potentially also other available spreadsheet software packages could be fruitfully utilized within the context of mixed methods studies.

Whereas professional "quantitative" researchers prefer statistical packages like SPSS or SAS for data analysis and "qualitative" researchers look for special software like Atlas.ti or NVivo, MS Excel is quite widely used for quantitative data analysis as it is both readily available and familiar from school or a basic computer course. However, Excel has lots of features that make the handling and integration of different types of data very flexible, giving it potential to be used within a mixed approach more beneficially than as just a poor substitute for a statistical package.

First, MS Excel's compartmentalized worksheet provides a flexible structure for recording both notes and keywords from unstructured raw data for example, in the course of a meta-analysis of literature or published studies. Memos can be attached to the cells using the *Insert Comment* tool. This combination of structure with flexibility makes composing summary tables, where the structure is not clear in the beginning of the process but has to emerge during the analysis of materials, much more effective than when using word processing software for the same purpose.

More extensive integration of various types of data has been a challenge for mixed methods studies for some time. The use of MS Excel can potentially facilitate this kind of integration as its spreadsheet can be used to record both prestructured numerical or categorical (i.e., quantitative) data from survey or structured coding sheets and unstructured textual notes (i.e., qualitative data) from open questions, memos, or interview transcripts at the same time in the same database. Thus, the spreadsheet can contain different types of data from either a single source, or it can be used to bring raw data together from separate (qualitative and quantitative) sources. Usually, the resulting data table resembles what we have used to prepare for statistical analysis, having rows for cases and columns for variables, but (some of) the variables/columns are not predefined, so that you can enter longer comments into the cells; and if new themes come up during the recording process, you can add some columns, change their labels, relocate the notes or parts of them, and so on.

This kind of open recording process as well as the actual analysis of resulting semistructured data requires that the researcher has a good overview of recorded data all the time. MS Excel provides several tools which make reviewing data on the worksheet very effective and easy. With the *Freeze Panes* tool it is possible to fix columns and/or rows so that variable and case labels (or some other important information) will be seen on the screen even when you scroll to the lower right end of the table. It helps a lot in browsing your data and making preliminary sense of it either during the data entry and coding process or later in the course of the analysis.

The *Sort* command, which allows you to sort both rows and columns using up to three nested criteria, is useful for getting an overview of or comparing certain subgroups in your data. You can use categorical information or keyword variables to sort the data so that comments for various subgroups are brought together in the display, enabling you to see if there are common features in the comments or a trend for each subgroup. Excel's flexibility allows you, if needed, to add in a new column in order to postcategorize a variable that was initially recorded as text and to use that to sort and analyze other data. Alternatively, the *AutoFilter* facility

might be the most reasonable choice when your aim is to review information in a systematic manner right on your datasheet. Once *AutoFilter* has been checked in the *Data* menu, a drop-down menu attached to the first cell of each column allows for sorting or filtering data by one of the categories/keywords found from the cells or by your own custom criteria.

The *Sort* and *AutoFilter* tools can also give a rapid overall idea of the variability of entries and frequencies with which one or other category or keyword has been entered, either through reviewing the sorted records or the cell entries listed alphabetically in the AutoFilter drop-down menus. For getting more exact numerical results, the *Pivot Table* command can be used. It is very comfortable here as the same tool can be used to get both frequencies and cross-tabulations as well as summary descriptive statistics for groups defined by some categorized variable(s). Sorting and filtering tools used independently or in combination with *Pivot Table*, then, facilitate the integration of quantitative and qualitative data.

As illustrated above, Excel's tools make it easy to learn from qualitative data to inform your decisions while analyzing and interpreting your quantitative data. Furthermore, as it is rather easy to transport data from one program to another, it is entirely feasible to take (part of) your data from the spreadsheet to some statistical package at some point for more complicated quantitative analysis, or vice versa—to take some numerical results of the analysis from a statistical package (back) to the spreadsheet. Often MS Excel provides more comfortable and flexible tools for designing output tables and various diagrams for presentation than statistical packages. This kind of data transport can be practiced also between spreadsheet and software for qualitative analysis to benefit from possibilities for more substantial thematic analysis built into these programs, while at the same time using the powerful tools of MS Excel for data mapping and visualization after the coding process. Similarly, it is possible to use MS Excel as a way of bringing together results from study components which have been analyzed separately, for comparison and synthesis.

These and the other examples from mixed methods research practice demonstrate that MS Excel can be effectively used to facilitate both integration of different types of data and the conclusions from separate data analyses and thereby qualitative and quantitative approaches of research in general. Its most important virtues in the context of mixed methods studies are availability and familiarity to a wide range of researchers, ease of use, and capacity to handle both structured and unstructured data within one database, and it also provides many tools for reviewing and reorganizing data right on the spreadsheet and has the ability to create visual models and charts that help to summarize, analyze, and synthesize information.

Katrin Niglas
Tallinn University, Estonia