The MDS-GUI: A Graphical User Interface for comprehensive Multidimensional Scaling applications.

Andrew Timm, Sugnet Lubbe

Department of Statistical Sciences, University of Cape Town, South Africa

Contact author A: timmand@gmail.com

Keywords: MDS, GUI, tcltk

MDS-GUI is an R based graphical user interface for performing Multidimensional Scaling (MDS) methods in a number of ways. The software was developed using the R wrapped tcltk package and a number of the packages affiliated to it, such as tcltk2 and tkrplot. While the package is in its final stages of development, it is at this point fully demonstrable and is likely to be ready for submission to the CRAN database by the end of 2012. The intention of the MDS-GUI is that the menu structures and overall layout be set out in a way that is found to be user friendly and uncomplicated as well as comprehensive and effective.

The MDS-GUI has been developed to provide the user, even with no theoretical background on the subject, with the opportunity to perform a number of MDS methods and output a host of relevant details and graphics. In broad terms, the GUI allows the user to simply and efficiently input their desired data, choose the type of MDS they would like to perform as well as select the type of output they would like to achieve by the analysis. The use of sub-menus and property tabs gives the user the option to fine tune specific parameters of the desired MDS procedure as well as provide options to alter the way in which the resulting plots are displayed. The graphical outputs are of an interactive nature and allow the user to make adjustments to the output with a cursor to observe any difference in results. Multidimensional Scaling is usually an iterative technique, which is a quality preserved by the graphics of the software. The user is thus able to have a visual display of the processes at work and observe the moving ordination configuration.

The presentation will, first of all, provide a demonstration of the MDS-GUI. This demonstration will be done in such a way that highlights the features of the software from an R coding sense, as well as the relevance of the results from a statistical analytical point of view. In addition to this, a discussion of the development of the software will take place. This will include comments on the areas of development found to be most challenging as well as future plans for the package.

References

