Decision-Making Profile Generation

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Preamble

These are instructions to help you make a decision-making profile (basically an automated radar graph and individual .pdf report generator) derived from the needs of study that started in late 2021 at BrainPark (Monash University) by a PhD candidate. The R script and these instructions were developed by an RA.

These instructions assume you will be using the same variables as that study.

Feel free to edit/extract the scripts to work with your unique situation/data/variables, customise how the reports look, or whatever. Otherwise, if you're not too familiar with R, follow the below and it should be fine!

Setup

Files

- DMPG_data.xlsx
  - Ensure you have the following variables (min. ~ max. values and any other notes):
    - ParticipantID
      - Don't use spaces or non-alphanumeric characters.
    - SUPPS_Persev

        - 4 ~ 16
    - SUPPS_Premed
        - 4 ~ 16
    - SUPPS_NU
        - 4 ~ 16
    - SUPPS_PU
        - 4 ~ 16
    - TolUncert_Score
        - 12 ~ 60
    - BAS_D_Score
        - 4 ~ 16
    - RiskQuestion
        - 0 ~ 10
    - Advanced
        - Determines whether the participant gets an 'Advanced' profile generated (0 = regular, 1 = advanced).
        - Advanced profiles show a radar graph of the whole sample's averages underneath the individual participant's radar graph.

- DMPG_script.R
  - Main script for manipulating the data, and generating and saving the profiles (read 'Running the Script').
- DMPG_template.Rmd
  - This controls what the profile and graph will look like.
- infopage.pdf
  - One-page .pdf explaining what each of the key words of the radar graph mean.
  - Recommended to be letter dimensions (21.59cm x 27.94cm / 8.5in x 11in) so the width is the same as the profile's page.
- logo.png
  - Image with the Monash University and BrainPark logos.
  - Recommended to be 1438 x 290 px.

Folder Structure

- [DMPG]
  - DMPG_data.xlsx
  - DMPG_script.R
  - [reports]
    - DMPG_template.Rmd
    - infopage.pdf
    - logo.png
  - [combinedreports]
    - (This is where your final profiles will be saved.)

Packages

Install these packages before you begin using the script. If you already have them installed and the script doesn't work, make sure these packages are updated.

- tinytex
- readxl
- rmarkdown
- fmsb
- pdftools

Running the Script

Preparation

Subsetting your data to only a couple of participants (some with regular and some with advanced profiles) to test whether the script works is recommended first.

Advanced profiles will not generate properly when there are missing values in your data. Clean beforehand or use/integrate the script after your own R script cleaning code.

The script assumes you have a variable called Advanced (read 'Files') in your data.

Generating

Open DMPG_script.R and ensure you correctly import your data into variable 'd' in line 11. This can be done in various ways depending on if you are using this script as a standalone thing or integrating it into an existing script.

If you are unfamiliar with R, the default script is set to import an Excel file (.xlsx), so you can make a copy of your data in the appropriate location (see 'Folder Structure') that is named "DMPG_data" and is an Excel .xlsx file.

Then run the script. Hopefully it worked!

Customising

These don't cover all the changes possible, but have been added to make it more friendly to people who are unfamiliar with R and want to make some common changes.

- DMPG_template.Rmd
  - Title and title colour
    - Line 2: Change the "My Profile" text / change the "SeaGreen" text to a colour available from dvipsnames in the xcolor package (LaTeX)
  - Logo
    - Line 52: Delete this line or change the logo.png file to something else (recommended to retain the same dimensions)
      - Probably replace this or don't use it if you don't have permission to use the logos.
- DMPG_scriptNP.R

- File prefix
  - Line 14: Change ‘prefix’ variable
  - If you want none, change it to quotation marks with nothing inside them ("").
- Legend labels in Advanced profile
  - Lines 17-18: Change ‘advlegend_participant’ and ‘advlegend_sample’ variables
- Radar graph labels
  - Line 21: Change ‘radarlabels’ variable
  - Customising this using the fmsb package is quite a pain and involves a bit of trial and error (uses line breaks and spaces to get desired formatting).
- Radar colors
  - Lines 24-28: Change the rgb (red, green, blue, alpha) values in for desired variables (recommended to keep alpha values as they are and make the rgb the same for each pair)