Users Manual for SAS Binary Mediation Macro

The zip file consists of three files. Two SAS programs and an example dataset:

1) MixedMediationMacroBinary.sas
2) Example.sas
3) PainSleepFatigue.sas7bdat

Unzipping the zip file, creates a folder called MixedMediation on your C: drive, and stores all the SAS files in that folder.

MixedMediationMacroBinary.sas:

This file contains a SAS macro that is able to perform all types of mixed mediation analyses. The macro automatically senses the levels (dichotomous or continuous) of the Independent Variable (IV), Dependent Variable (DV) and Mediator variables and chooses the appropriate standardizations to be performed, in order for the sobel, goodman I and goodman II tests to be valid.

Example.sas:

This file contains some sample syntax to use the 'MixedMediationMacroBinary.sas' macro. This file uses the data from the PainSleepFatigue.sas7bdat.

PainSleepFatigue.sas7bdat:

This data consists of 84 patients with cancer who were experiencing pain. All participants completed the Brief Pain Inventory (BPI) short form, the Pittsburgh Sleep Quality Index (PSQI) questionnaire, and the fatigue subscale of the Profile of Mood States (PMS) questionnaire. All of the variables are in continuous scale. The PSQI variable was dichotomized (PSQI_B) to provide an example of mixed mediation where the Mediator variable is a binary variable. Participants that scored under the median PSQI value were coded as 0 and those above the median were coded as 1.
It is hypothesized that sleep disturbance (PSQI_B) mediates the effects of Pain (BPI) on fatigue (PMS).

Usage:

To use the SAS macro in your own syntax, please include the following line of syntax in your SAS syntax file.

```
%include 'c:\mixedmediation\MixedMediationMacroBinary.sas';
```

Make sure that MixedMediationMacro.sas file is available in the above mentioned location. If the file is not saved in the default location and is saved elsewhere, please update the location in the line above.

```
The macro is invoked as

      %mediation(data=,X=,M=,Y=)

where:    data = SAS data file containing the IV, DV, and Mediator
```

```
X = The Independent variable
Y = The Dependent variable
M = The Mediator variable
```

Examples of usage:

```
%mediation(data=workshop.SuzMixedMediationBin, X=BPI, M=PSQI_B, Y=PMS );
```

Output:

The macro produces the following reports, which provide information on the mediation analyses.

1) Three reports summarizing the regressions run to estimate the path coefficients in the mediation model.
2) One report called ‘Establishing mediation’. This report provides the estimates of the paths (a, b, c), and the associated standard errors (sa, sb, sc). Further, incases where dichotomous variables are involved, standardized path estimates (std a, std b, std c) and associated standardized standard errors (std sa, std sb, std sc) are also generated.
3) The next three reports report the Sobel test, the Goodman I test and Goodman II test. Please note that Goodman II test does not return any values in some cases because of how it is computed.
4) The last report, provides the percent mediated and the ratio of indirect to direct effect.