IDENTIFYING INCONSISTENT RESPONDERS

2024-01-04

Using inter-item standard deviation, we can identify whether respondents provided unusually inconsistent responses on different items within a single scale or measure

```
data  <- read_csv("Cues to Infidelity - MEN ONLY 7.12.23.csv")
```

```
## Rows: 239 Columns: 554
## -- Column specification --------------------------------------------------------
## Delimiter: ","
## chr   (6): StartDate, EndDate, RecordedDate, M_SC_MRSI_1, M_SC_MRSI_4_2, M_S...
## dbl (462): USE, CUES, SEX_CUES, EMO_CUES, MISC_CUES, REACT, SUS, SOI, VAI_A_...
## lgl  (86): Q566_1, Q566_2, W_PDIS_A_1, W_PDIS_A_2, W_PDIS_A_3, W_PDIS_A_4, W...
##
## i Use `spec()` to retrieve the full column specification for this data.
## i Specify the column types or set `show_col_types = FALSE` to quiet this message.
```

STEP 1

Calculate the inter-item standard deviation for the desired composite variable and assign it to a new variable

```
df <- data.frame(data$M_MJSB1, data$M_MJSB2, data$M_MJSB3, data$M_MJSB4, data$M_MJSB5, data$M_MJSB6, da
```

```
df$EMO_SD <- apply(data[, 1:8], 1, sd, na.rm = TRUE)
```

```
head(df, 10)
```

```
##    data.M_MJSB1 data.M_MJSB2 data.M_MJSB3 data.M_MJSB4 data.M_MJSB5
## 1             7            6            6            5            5
## 2             4            4            3            4            6
## 3             4            5            3            5            5
## 4             4            4            4            5            5
## 5             4            4            5            5            7
## 6             2            4            1            4            5
## 7             2            2            3            3            1
## 8             4            5            2            6            7
## 9             6            6            7            6            7
## 10            4            4            4            6            5
##    data.M_MJSB6 data.M_MJSB7 data.M_MJSB8    EMO_SD
## 1             4            4            6 1.6264492
## 2             7            7            2 1.3689543
## 3             7            4            4 1.2988612
## 4             7            7            5 1.4822056
## 5             7            7            5 1.6331448
## 6             7            6            1 1.2068953
## 7             1            1            1 0.5974367
## 8             7            7            3 1.4798319
## 9             7            7            5 1.7784922
## 10            6            5            5 1.7105110
```

STEP 2

Convert the new variable to a standardized score (i.e., z-score)

```
df$Z_EMO_SD <- (df$EMO_SD - mean(df$EMO_SD)) / sd(df$EMO_SD)
```

```
head(df, 10)
```

```
##    data.M_MJSB1 data.M_MJSB2 data.M_MJSB3 data.M_MJSB4 data.M_MJSB5
## 1             7            6            6            5            5
## 2             4            4            3            4            6
## 3             4            5            3            5            5
## 4             4            4            4            5            5
## 5             4            4            5            5            7
## 6             2            4            1            4            5
## 7             2            2            3            3            1
## 8             4            5            2            6            7
## 9             6            6            7            6            7
## 10            4            4            4            6            5
##    data.M_MJSB6 data.M_MJSB7 data.M_MJSB8    EMO_SD    Z_EMO_SD
## 1             4            4            6 1.6264492  0.59586535
## 2             7            7            2 1.3689543 -0.31465688
## 3             7            4            4 1.2988612 -0.56251160
## 4             7            7            5 1.4822056  0.08580862
## 5             7            7            5 1.6331448  0.61954156
## 6             7            6            1 1.2068953 -0.88771034
## 7             1            1            1 0.5974367 -3.04280379
## 8             7            7            3 1.4798319  0.07741488
## 9             7            7            5 1.7784922  1.13350141
## 10            6            5            5 1.7105110  0.89311433
```

STEP 3

Determine whether your data contains any cases with particularly inconsistent responders (z-score > 3) and consider removing these cases from your data

```
head(df[order(-df$Z_EMO_SD),], 10)
```

```
##     data.M_MJSB1 data.M_MJSB2 data.M_MJSB3 data.M_MJSB4 data.M_MJSB5
## 88             5            6            7            7            7
## 34             6            6            7            7            7
## 98             7            7            5            7            7
## 161            7            7            7            7            7
## 100            4            7            6            7            7
## 118            4            5            5            6            7
## 66             4            4            4            7            7
## 46             5            5            4            6            7
## 58             4            7            4            7            7
## 83             7            4            4            7            7
##     data.M_MJSB6 data.M_MJSB7 data.M_MJSB8   EMO_SD Z_EMO_SD
## 88             7            7            7 2.446306 3.494944
## 34             7            7            7 2.188182 2.582196
## 98             7            7            5 2.012948 1.962555
## 161            7            7            4 2.009800 1.951425
## 100            7            7            7 2.001971 1.923740
## 118            7            7            4 1.982793 1.855925
## 66             7            7            7 1.964522 1.791319
```

```
## 46             7             7             5 1.956121 1.761611
## 58             7             7             7 1.932010 1.676352
## 83             7             7             6 1.897859 1.555592
```

```
df_no_outliers <- df[-(which(df$Z_EMO_SD > 3)),]
```

```
head(df_no_outliers[order(-df_no_outliers$Z_EMO_SD),], 10)
```

```
##     data.M_MJSB1 data.M_MJSB2 data.M_MJSB3 data.M_MJSB4 data.M_MJSB5
## 34             6             6             7             7             7
## 98             7             7             5             7             7
## 161            7             7             7             7             7
## 100            4             7             6             7             7
## 118            4             5             5             6             7
## 66             4             4             4             7             7
## 46             5             5             4             6             7
## 58             4             7             4             7             7
## 83             7             4             4             7             7
## 168            7             7             4             7             7
##     data.M_MJSB6 data.M_MJSB7 data.M_MJSB8   EMO_SD Z_EMO_SD
## 34             7             7             7 2.188182 2.582196
## 98             7             7             5 2.012948 1.962555
## 161            7             7             4 2.009800 1.951425
## 100            7             7             7 2.001971 1.923740
## 118            7             7             4 1.982793 1.855925
## 66             7             7             7 1.964522 1.791319
## 46             7             7             5 1.956121 1.761611
## 58             7             7             7 1.932010 1.676352
## 83             7             7             6 1.897859 1.555592
## 168            7             7             3 1.887019 1.517262
```