

Supplementary Material 1

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Inter-rater reliability methods

As the Cohen Kappa resulted in suspicious values during the first step of the agreement analysis, we have decided to use other inter reliability tests to examine degree of agreement. It was possible to use Matthews correlation coefficient or other methods such as the Gwet's AC1. The later was chosen because it overcomes problems associated with the Cohen's Kappa if the degree of agreement is in fact high (Gwet, 2008). Moreover, the Gwet's AC1 it also does not have an assumptions, which are sometimes difficult to fulfill e.g. independence between raters (Gwet, 2008). The text below presents statistical calculations conducted in the present study to evaluate the degree of agreement between raters.

```
data.abs.scr <- openxlsx::read.xlsx(  
  paste0(getwd(), "/Data/R_data_study_selection.xlsx"))  
data.qual.scr <- openxlsx::read.xlsx(  
  paste0(getwd(), "/Data/R_data_quality_assessment.xlsx"))
```

```
# set seed in order to assure computaional reproducitiblity
```

```
set.seed(874354)
```

```
# percent ageement
```

```
agree(data.abs.scr, tolerance=0)
```

```
## Percentage agreement (Tolerance=0)
```

```
##
```

```
## Subjects = 627
```

```
## Raters = 2
```

```
## %-agree = 93.3
```

```
# cohens kappa
```

```
# psych package
```

```
psych::cohen.kappa(data.abs.scr)
```

```
## Call: cohen.kappa1(x = x, w = w, n.obs = n.obs, alpha = alpha, levels = levels)
```

```
##
```

```
## Cohen Kappa and Weighted Kappa correlation coefficients and confidence boundaries
```

```
##           lower estimate upper
```

```
## unweighted kappa 0.11      0.25  0.4
```

```
## weighted kappa   0.11      0.25  0.4
```

```
##
```

```
## Number of subjects = 627
```

```

# irr package
# kappa2(ratings = data.abs.scr) # cohens kappa yields
#contraceptive values, thus other methods
#such as. Matthews correlation coefficient
#or Gwet's AC1 might be used for further analysis.

# Matthews correlation coefficient (dodat zdůvodnění proč zrovna toto)
# mltools::mcc(data.abs.scr$PM, data.abs.scr$JH) %>% round(digits = 2)

# Gwet's AC1
gwen=irrCAC::gwet.ac1.raw(ratings = data.abs.scr)
gwen

## $est
##   coeff.name      pa      pe coeff.val coeff.se      conf.int p.value
## 1          AC1 0.9330144 0.08822549   0.92653  0.01169 (0.904,0.949)      0
##      w.name
## 1 unweighted
##
## $weights
##      [,1] [,2]
## [1,]    1    0
## [2,]    0    1
##
## $categories
## [1] 0 1

```

```
# percent ageement
```

```
agree(data.qual.scr, tolerance=0) # 96%
```

```
## Percentage agreement (Tolerance=0)
```

```
##
```

```
## Subjects = 143
```

```
## Raters = 2
```

```
## %-agree = 95.8
```

```
# cohens kappa
```

```
#.....
```

```
# psych package
```

```
psych::cohen.kappa(data.qual.scr) # 0.9
```

```
## Call: cohen.kappa1(x = x, w = w, n.obs = n.obs, alpha = alpha, levels = levels)
```

```
##
```

```
## Cohen Kappa and Weighted Kappa correlation coefficients and confidence boundaries
```

```
##               lower estimate upper
```

```
## unweighted kappa 0.82      0.9 0.98
```

```
## weighted kappa   0.82      0.9 0.98
```

```
##
```

```
## Number of subjects = 143
```

```
# irr package
```

```
kappa2(ratings = data.qual.scr) # 0.9
```

```
## Cohen's Kappa for 2 Raters (Weights: unweighted)
```

```
##
```

```
## Subjects = 143
```

```
## Raters = 2
```

```
## Kappa = 0.9
```

```
##
```

```
## z = 10.8
```

```
## p-value = 0
```

```
# Gwet's AC1
```

```
gwen=irrCAC::gwet.ac1.raw(ratings = data.qual.scr) # 0.93
```

```
gwen
```

```
## $est
```

```
##   coeff.name      pa      pe coeff.val coeff.se      conf.int p.value
## 1      AC1 0.958042 0.4205585  0.92759  0.02962 (0.869,0.986)      0
```

```
##      w.name
```

```
## 1 unweighted
```

```
##
```

```
## $weights
```

```
##      [,1] [,2]
```

```
## [1,]    1    0
```

```
## [2,]    0    1
```

```
##
```

```
## $categories
```

```
## [1] 0 1
```

References

- Gwet, K. L. (2008). Computing inter-rater reliability and its variance in the presence of high agreement. *British Journal of Mathematical and Statistical Psychology*, 61(1), 29–48. <https://doi.org/10.1348/000711006X126600>