Ergebnisse

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## Analyse der Diskrepanzerkennung

### Deskriptive Statistik

## [1] "daten$i1\_dd\_w\_MW"

## Min. 1st Qu. Median Mean 3rd Qu. Max.   
## 0.0000000 0.1400000 0.3150000 0.4563636 0.5600000 1.5000000

## [1] "daten$i1\_dd\_f\_MW"

## Min. 1st Qu. Median Mean 3rd Qu. Max.   
## 0.170000 1.177500 1.370000 1.232273 1.400000 1.500000

### t-Test

##   
## Paired t-test  
##   
## data: daten$i1\_dd\_f\_MW and daten$i1\_dd\_w\_MW  
## t = 13.112, df = 65, p-value < 2.2e-16  
## alternative hypothesis: true mean difference is not equal to 0  
## 95 percent confidence interval:  
## 0.6577277 0.8940905  
## sample estimates:  
## mean difference   
## 0.7759091

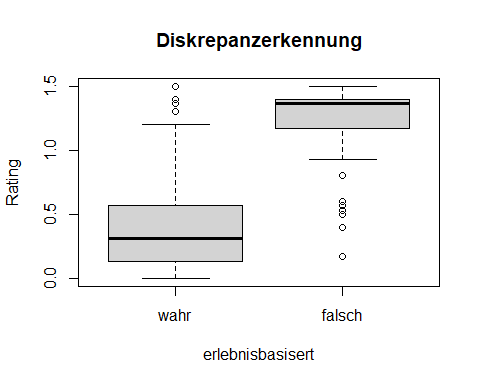
### Effektstärke mittels Cohens d berechnen

##   
## Cohen's d  
##   
## d estimate: 2.178303 (large)  
## 95 percent confidence interval:  
## lower upper   
## 1.743615 2.612992

### Nicht parametrischer Test mittels Wilcoxon-Vorzeichen-Rang-Test

##   
## Wilcoxon signed rank test with continuity correction  
##   
## data: daten$i1\_dd\_f\_MW and daten$i1\_dd\_w\_MW  
## V = 2159, p-value = 1.729e-11  
## alternative hypothesis: true location shift is not equal to 0

### Grafische Analyse



## Analyse der initialen Überraschung

### Deskriptive Statistik

## [1] "daten$i1\_ue\_w\_MW"

## Min. 1st Qu. Median Mean 3rd Qu. Max.   
## 1.500 1.500 1.530 1.592 1.630 2.670

## [1] "daten$i1\_ue\_f\_MW"

## Min. 1st Qu. Median Mean 3rd Qu. Max.   
## 1.500 1.600 1.830 1.949 2.070 3.530

### t-Test

##   
## Paired t-test  
##   
## data: daten$i1\_ue\_f\_MW and daten$i1\_ue\_w\_MW  
## t = 6.2563, df = 65, p-value = 3.491e-08  
## alternative hypothesis: true mean difference is not equal to 0  
## 95 percent confidence interval:  
## 0.2429151 0.4707213  
## sample estimates:  
## mean difference   
## 0.3568182

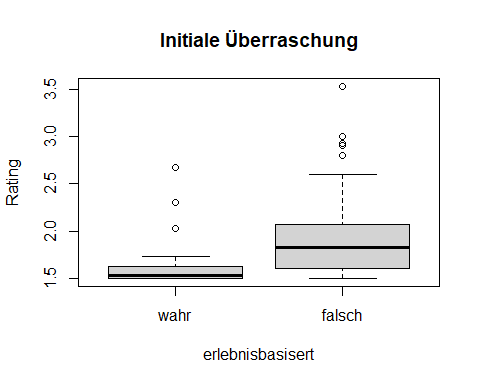
### Effektstärke mittels Cohen’s d berechnen

##   
## Cohen's d  
##   
## d estimate: 1.063693 (large)  
## 95 percent confidence interval:  
## lower upper   
## 0.6957522 1.4316331

### Nicht parametrischer Test mittels Wilcoxon-Vorzeichen-Rang-Test

##   
## Wilcoxon signed rank test with continuity correction  
##   
## data: daten$i1\_ue\_f\_MW and daten$i1\_ue\_w\_MW  
## V = 1840.5, p-value = 1.215e-08  
## alternative hypothesis: true location shift is not equal to 0

### Grafische Analyse



## Manova der kombinierten Daten

## Call:  
## manova(cbind(dd, ue) ~ Truth, data = manova\_data)  
##   
## Terms:  
## Truth Residuals  
## dd 19.86715 16.49409  
## ue 4.201534 14.628674  
## Deg. of Freedom 1 130  
##   
## Residual standard errors: 0.3561988 0.3354523  
## Estimated effects may be unbalanced

## Df Wilks approx F num Df den Df Pr(>F)   
## Truth 1 0.44032 81.984 2 129 < 2.2e-16 \*\*\*  
## Residuals 130   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

## [1] "summary.aov(manova\_results)"

## Response dd :  
## Df Sum Sq Mean Sq F value Pr(>F)   
## Truth 1 19.867 19.8672 156.59 < 2.2e-16 \*\*\*  
## Residuals 130 16.494 0.1269   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## Response ue :  
## Df Sum Sq Mean Sq F value Pr(>F)   
## Truth 1 4.2015 4.2015 37.338 1.076e-08 \*\*\*  
## Residuals 130 14.6287 0.1125   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

## Anhang

### Daten

| VPN | i1\_dd\_w\_MW | i1\_dd\_f\_MW | i1\_ue\_w\_MW | i1\_ue\_f\_MW |
| --- | --- | --- | --- | --- |
| 3 | 0.07 | 0.50 | 1.57 | 1.53 |
| 4 | 0.50 | 1.43 | 1.60 | 1.83 |
| 6 | 0.37 | 1.40 | 1.50 | 2.80 |
| 9 | 0.10 | 1.40 | 1.70 | 1.67 |
| 14 | 0.93 | 1.43 | 1.70 | 1.57 |
| 15 | 0.50 | 1.03 | 1.63 | 1.70 |
| 20 | 0.43 | 1.47 | 1.50 | 2.23 |
| 24 | 0.50 | 1.33 | 1.70 | 1.63 |
| 27 | 0.17 | 1.00 | 1.53 | 2.10 |
| 29 | 0.23 | 1.33 | 1.53 | 1.90 |
| 32 | 0.30 | 1.33 | 1.53 | 1.57 |
| 37 | 1.30 | 1.40 | 1.67 | 1.77 |
| 38 | 0.80 | 1.40 | 1.57 | 2.03 |
| 44 | 0.93 | 1.17 | 1.70 | 1.57 |
| 57 | 0.07 | 1.03 | 1.50 | 2.17 |
| 63 | 0.27 | 1.37 | 1.50 | 1.50 |
| 67 | 0.53 | 1.47 | 1.50 | 2.23 |
| 74 | 0.87 | 1.37 | 1.53 | 1.97 |
| 78 | 0.07 | 1.47 | 1.50 | 3.53 |
| 80 | 1.07 | 0.53 | 1.53 | 1.70 |
| 92 | 0.10 | 1.33 | 1.50 | 1.60 |
| 93 | 0.10 | 0.57 | 1.53 | 1.53 |
| 99 | 0.90 | 0.97 | 1.73 | 1.60 |
| 104 | 0.03 | 1.33 | 1.50 | 1.83 |
| 113 | 0.10 | 1.37 | 1.57 | 2.03 |
| 122 | 0.57 | 1.40 | 1.50 | 1.77 |
| 125 | 0.17 | 1.43 | 1.50 | 1.70 |
| 133 | 0.10 | 1.37 | 1.63 | 3.00 |
| 136 | 0.00 | 0.93 | 1.50 | 2.30 |
| 140 | 1.50 | 1.13 | 2.67 | 1.83 |
| 151 | 0.27 | 1.37 | 1.50 | 2.30 |
| 155 | 0.37 | 1.10 | 1.50 | 1.77 |
| 160 | 0.23 | 1.50 | 1.50 | 1.60 |
| 169 | 0.13 | 1.43 | 1.63 | 2.07 |
| 170 | 0.13 | 1.37 | 1.63 | 1.67 |
| 171 | 0.07 | 0.60 | 1.57 | 1.60 |
| 175 | 0.13 | 1.47 | 1.63 | 2.50 |
| 178 | 0.30 | 1.43 | 1.53 | 1.50 |
| 179 | 0.50 | 1.40 | 1.53 | 1.60 |
| 199 | 1.20 | 1.47 | 1.63 | 1.90 |
| 205 | 0.27 | 0.80 | 1.50 | 2.03 |
| 214 | 0.43 | 1.50 | 1.63 | 2.00 |
| 221 | 1.07 | 1.40 | 1.57 | 1.60 |
| 223 | 1.40 | 1.27 | 1.67 | 1.90 |
| 233 | 0.53 | 0.40 | 1.63 | 1.90 |
| 237 | 0.47 | 1.37 | 1.50 | 2.60 |
| 241 | 1.03 | 1.50 | 1.50 | 1.77 |
| 248 | 0.33 | 1.40 | 1.50 | 1.83 |
| 275 | 0.17 | 1.20 | 1.63 | 1.50 |
| 277 | 0.17 | 1.00 | 1.50 | 1.83 |
| 279 | 0.47 | 0.57 | 1.57 | 2.20 |
| 286 | 0.00 | 1.50 | 1.50 | 2.93 |
| 295 | 0.27 | 1.43 | 1.50 | 2.90 |
| 296 | 1.00 | 1.33 | 1.50 | 1.60 |
| 300 | 0.37 | 1.40 | 1.50 | 1.90 |
| 302 | 0.17 | 1.23 | 1.50 | 1.63 |
| 307 | 0.03 | 1.40 | 1.50 | 1.50 |
| 315 | 0.40 | 1.23 | 1.57 | 1.50 |
| 342 | 1.37 | 1.30 | 1.60 | 1.93 |
| 350 | 0.27 | 1.37 | 2.03 | 2.07 |
| 353 | 0.33 | 1.23 | 1.53 | 2.03 |
| 365 | 0.90 | 1.30 | 2.30 | 3.00 |
| 369 | 0.13 | 0.17 | 1.53 | 1.50 |
| 421 | 0.23 | 1.37 | 1.57 | 2.37 |
| 427 | 0.27 | 1.50 | 1.50 | 1.90 |
| 483 | 1.13 | 1.33 | 1.50 | 2.03 |