

Writing Stats

Linear Modelling for Normalized Error (Word Count)

Our Linear Model:

$$NormalizedError_{WordCount} = 1 + Group + Session + 1|Subject$$

```
## Linear mixed-effects model fit by REML
## Data: full_nlp_df
##      AIC      BIC    logLik
## -187.2768 -169.7008 100.6384
##
## Random effects:
## Formula: ~1 | Subject
##      (Intercept)  Residual
## StdDev:  0.04712788 0.06057941
##
## Fixed effects: NormalizedErrorWC ~ 1 + Group + Session
##              Value Std.Error DF   t-value p-value
## (Intercept)  0.10915375 0.02106715 47   5.181231  0.0000
## GroupIN      0.00834873 0.02678796 44   0.311660  0.7568
## GroupBF     -0.01225232 0.02726893 44  -0.449314  0.6554
## GroupIF      0.00462212 0.02678796 44   0.172545  0.8638
## SessionDT   -0.03535829 0.01236572 47  -2.859380  0.0063
## Correlation:
##      (Intr) GropIN GropBF GropIF
## GroupIN   -0.719
## GroupBF   -0.706  0.555
## GroupIF   -0.719  0.565  0.555
## SessionDT -0.293  0.000  0.000  0.000
##
## Standardized Within-Group Residuals:
##      Min      Q1      Med      Q3      Max
## -1.3876465 -0.4828015 -0.1283125  0.4411977  4.3808876
##
## Number of Observations: 96
## Number of Groups: 48
```

Linear Modelling for Normalized Error (Sentence Count)

Our Linear Model:

$$WritingQuality_{SentenceCount} = 1 + Group + Session + 1|Subject$$

```
## Linear mixed-effects model fit by REML
## Data: full_nlp_df
##      AIC      BIC logLik
## 345.7 363.276 -165.85
##
## Random effects:
## Formula: ~1 | Subject
##      (Intercept) Residual
## StdDev:      0.678102 1.221853
##
## Fixed effects: NormalizedErrorSC ~ 1 + Group + Session
##              Value Std.Error DF   t-value p-value
## (Intercept)  1.9831588 0.3690254 47   5.374044  0.0000
## GroupIN      0.0822501 0.4619736 44   0.178041  0.8595
## GroupBF     -0.2266707 0.4702682 44  -0.482003  0.6322
## GroupIF      0.2776703 0.4619736 44   0.601052  0.5509
## SessionDT   -0.5986599 0.2494097 47  -2.400307  0.0204
## Correlation:
##      (Intr) GropIN GropBF GropIF
## GroupIN   -0.708
## GroupBF   -0.695  0.555
## GroupIF   -0.708  0.565  0.555
## SessionDT -0.338  0.000  0.000  0.000
##
## Standardized Within-Group Residuals:
##      Min      Q1      Med      Q3      Max
## -1.4682585 -0.5181617 -0.1624457  0.2705087  5.1129165
##
## Number of Observations: 96
## Number of Groups: 48
```

Plotting Trait Levels





