Linear Models

Linear Model - 2.1.1 -> Random Effect

```
## Linear mixed-effects model fit by REML
##  Data: physiological_questionnaire_df
##        AIC       BIC   logLik
##   -57.42901 -47.3911 35.71451
##
## Random effects:
##  Formula: ~1 | Participant_ID
##         (Intercept)    Residual
## StdDev:  0.02804787 0.05173232
##
## Fixed effects: PP ~ Day + NASA_summative
##                     Value  Std.Error DF    t-value  p-value
## (Intercept)     -4.348296 0.03248721 23 -133.84641   0.0000
## DayDay1         -0.021896 0.02562427 23   -0.85452   0.4016
## DayDay2         -0.006170 0.02705428 23   -0.22805   0.8216
## DayDay3         -0.015608 0.02448427 23   -0.63745   0.5301
## NASA_summative  -0.000394 0.00051679 23   -0.76264   0.4534
##  Correlation:
##                (Intr) DayDy1 DayDy2 DayDy3
## DayDay1        -0.112
## DayDay2         0.007  0.562
## DayDay3        -0.445  0.447  0.410
## NASA_summative -0.797 -0.307 -0.433  0.089
##
## Standardized Within-Group Residuals:
##         Min          Q1         Med          Q3         Max
## -2.13097326 -0.45361955 -0.02882135  0.55151737  1.81100147
##
## Number of Observations: 36
## Number of Groups: 9


##                 numDF denDF   F-value p-value
## (Intercept)         1    23 118729.57  <.0001
## Day                 3    23      0.44  0.7284
## NASA_summative      1    23      0.58  0.4534
```

Linear Model - 2.2.1 -> Random Effect

```
## Linear mixed-effects model fit by REML
##  Data: physiological_questionnaire_df
##        AIC      BIC   logLik
##   4.868297 14.43937 4.565852
##
## Random effects:
##  Formula: ~1 | Participant_ID
##         (Intercept)  Residual
## StdDev:  0.08679923 0.1340434
##
## Fixed effects: E4_HR ~ Day + NASA_summative
##                    Value  Std.Error DF  t-value p-value
## (Intercept)     3.731664 0.09058913 21 41.19329  0.0000
## DayDay1         0.094234 0.06699697 21  1.40655  0.1742
## DayDay2        -0.092558 0.07290947 21 -1.26949  0.2182
## DayDay3         0.009559 0.06654384 21  0.14365  0.8871
## NASA_summative -0.002097 0.00146275 21 -1.43373  0.1664
##  Correlation:
##                (Intr) DayDy1 DayDy2 DayDy3
## DayDay1        -0.060
## DayDay2         0.053  0.555
## DayDay3        -0.475  0.389  0.332
## NASA_summative -0.809 -0.332 -0.440  0.177
##
## Standardized Within-Group Residuals:
##        Min         Q1        Med         Q3        Max
## -1.6731979 -0.4189153  0.1115813  0.4660118  1.8285736
##
## Number of Observations: 34
## Number of Groups: 9


##                numDF denDF  F-value p-value
## (Intercept)        1    21 9550.352  <.0001
## Day                3    21    3.480  0.0341
## NASA_summative     1    21    2.056  0.1664
```

Linear Model - 2.3.1 -> Random Effect

```
## Linear mixed-effects model fit by REML
##  Data: physiological_questionnaire_df
##        AIC      BIC    logLik
##   54.23308 63.80415 -20.11654
##
## Random effects:
##  Formula: ~1 | Participant_ID
##         (Intercept)  Residual
## StdDev:  0.05842995 0.3499689
##
## Fixed effects: E4_EDA ~ Day + NASA_summative
##                      Value Std.Error DF    t-value p-value
## (Intercept)      0.5322751 0.1935055 21  2.7506970  0.0120
## DayDay1         -0.1328865 0.1714113 21 -0.7752495  0.4468
## DayDay2          0.1145473 0.1835891 21  0.6239328  0.5394
## DayDay3          0.0035865 0.1713740 21  0.0209277  0.9835
## NASA_summative  -0.0022356 0.0030563 21 -0.7314784  0.4726
##  Correlation:
##                (Intr) DayDy1 DayDy2 DayDy3
## DayDay1        -0.195
## DayDay2        -0.086  0.534
## DayDay3        -0.504  0.431  0.388
## NASA_summative -0.791 -0.271 -0.375  0.118
##
## Standardized Within-Group Residuals:
##         Min          Q1         Med          Q3         Max
## -4.53062323 -0.01546878  0.14197328  0.34538751  0.92793404
##
## Number of Observations: 34
## Number of Groups: 9


##                 numDF denDF  F-value p-value
## (Intercept)         1    21 39.22373  <.0001
## Day                 3    21  0.72211  0.5500
## NASA_summative      1    21  0.53506  0.4726
```

Linear Model - 2.4.1 -> Random Effect

```
## Linear mixed-effects model fit by REML
##  Data: physiological_questionnaire_df
##        AIC      BIC    logLik
##   24.68752 33.4942 -5.343761
##
## Random effects:
##  Formula: ~1 | Participant_ID
##        (Intercept)  Residual
## StdDev:  0.1509235 0.1795277
##
## Fixed effects: iWatch_HR ~ Day + NASA_summative
##                  Value  Std.Error DF   t-value p-value
## (Intercept)    3.681317 0.14624245 19 25.172694  0.0000
## DayDay1        0.108629 0.09928633 19  1.094094  0.2876
## DayDay2       -0.087204 0.10658246 19 -0.818182  0.4234
## DayDay3        0.061471 0.09414374 19  0.652944  0.5216
## NASA_summative -0.003447 0.00216655 19 -1.590826  0.1282
##  Correlation:
##                (Intr) DayDy1 DayDy2 DayDy3
## DayDay1        -0.058
## DayDay2         0.080  0.607
## DayDay3        -0.429  0.471  0.421
## NASA_summative -0.803 -0.333 -0.478  0.106
##
## Standardized Within-Group Residuals:
##         Min          Q1         Med          Q3         Max
## -2.28782023 -0.42474653  0.04868245  0.40782078  1.47951302
##
## Number of Observations: 31
## Number of Groups: 8


##               numDF denDF   F-value p-value
## (Intercept)       1    19 3120.0210  <.0001
## Day               3    19    3.0708  0.0527
## NASA_summative    1    19    2.5307  0.1282
```