Linear Models

Linear Model - 2.1.1 -> Random Effect

```
## Linear mixed-effects model fit by REML
##  Data: physiological_questionnaire_df
##        AIC       BIC    logLik
##   -19.27693 -9.239023 16.63847
##
## Random effects:
##  Formula: ~1 | Participant_ID
##         (Intercept)   Residual
## StdDev:  0.1226202 0.07825723
##
## Fixed effects: PP ~ Day + NASA_summative
##                   Value  Std.Error DF   t-value p-value
## (Intercept)    -5.595381 0.06718817 23 -83.27925  0.0000
## DayDay1        -0.000671 0.03950365 23  -0.01698  0.9866
## DayDay2        -0.013029 0.04246780 23  -0.30680  0.7618
## DayDay3         0.000485 0.03709837 23   0.01307  0.9897
## NASA_summative  0.000084 0.00092813 23   0.09102  0.9283
##  Correlation:
##                (Intr) DayDy1 DayDy2 DayDy3
## DayDay1        -0.009
## DayDay2         0.104  0.583
## DayDay3        -0.346  0.427  0.380
## NASA_summative -0.692 -0.358 -0.495  0.106
##
## Standardized Within-Group Residuals:
##         Min          Q1         Med          Q3         Max
## -2.64731690 -0.32929724  0.05051628  0.34698087  2.05988402
##
## Number of Observations: 36
## Number of Groups: 9


##                numDF denDF   F-value p-value
## (Intercept)        1    23 16998.454  <.0001
## Day                3    23     0.048  0.9859
## NASA_summative     1    23     0.008  0.9283
```

Linear Model - 2.2.1 -> Random Effect

```
## Linear mixed-effects model fit by REML
##   Data: physiological_questionnaire_df
##         AIC      BIC    logLik
##    -3.639517 6.168865 8.819759
##
## Random effects:
##  Formula: ~1 | Participant_ID
##         (Intercept)  Residual
## StdDev:  0.05268733 0.1246041
##
## Fixed effects: E4_HR ~ Day + NASA_summative
##                    Value  Std.Error DF  t-value p-value
## (Intercept)     3.496699 0.07472804 22 46.79233  0.0000
## DayDay1        -0.018431 0.06146470 22 -0.29986  0.7671
## DayDay2        -0.099451 0.06620549 22 -1.50216  0.1473
## DayDay3         0.036108 0.05895313 22  0.61248  0.5465
## NASA_summative  0.000843 0.00118911 22  0.70934  0.4856
##  Correlation:
##                (Intr) DayDy1 DayDy2 DayDy3
## DayDay1        -0.141
## DayDay2        -0.032  0.541
## DayDay3        -0.459  0.451  0.408
## NASA_summative -0.797 -0.294 -0.397  0.085
##
## Standardized Within-Group Residuals:
##         Min          Q1         Med          Q3         Max
## -2.40427127 -0.49590831  0.04340874  0.66024998  1.32478835
##
## Number of Observations: 35
## Number of Groups: 9


##                numDF denDF   F-value p-value
## (Intercept)        1    22 16518.654  <.0001
## Day                3    22     1.221  0.3256
## NASA_summative     1    22     0.503  0.4856
```

Linear Model - 2.3.1 -> Random Effect

```
## Linear mixed-effects model fit by REML
##  Data: physiological_questionnaire_df
##        AIC      BIC    logLik
##   34.44927 44.25765 -10.22464
##
## Random effects:
##  Formula: ~1 | Participant_ID
##         (Intercept)  Residual
## StdDev:   0.1059273 0.2332941
##
## Fixed effects: E4_EDA ~ Day + NASA_summative
##                     Value  Std.Error DF   t-value p-value
## (Intercept)    -1.0809176 0.14165948 22 -7.630393  0.0000
## DayDay1        -0.1137103 0.11521010 22 -0.986982  0.3344
## DayDay2         0.0361992 0.12420134 22  0.291456  0.7734
## DayDay3         0.2484429 0.11038740 22  2.250645  0.0347
## NASA_summative  0.0002099 0.00225537 22  0.093085  0.9267
##  Correlation:
##                (Intr) DayDy1 DayDy2 DayDy3
## DayDay1        -0.133
## DayDay2        -0.024  0.542
## DayDay3        -0.456  0.450  0.406
## NASA_summative -0.798 -0.298 -0.401  0.086
##
## Standardized Within-Group Residuals:
##          Min           Q1          Med           Q3          Max
## -1.608280615 -0.497728429  0.005061383  0.526342307  2.076355387
##
## Number of Observations: 35
## Number of Groups: 9


##                numDF denDF  F-value p-value
## (Intercept)        1    22 374.9157  <.0001
## Day                3    22   3.7070  0.0268
## NASA_summative     1    22   0.0087  0.9267
```

Linear Model - 2.4.1 -> Random Effect

```
## Linear mixed-effects model fit by REML
##  Data: physiological_questionnaire_df
##        AIC       BIC      logLik
##   30.11712 38.92379 -8.058558
##
## Random effects:
##  Formula: ~1 | Participant_ID
##         (Intercept) Residual
## StdDev:  0.09150536 0.221347
##
## Fixed effects: iWatch_HR ~ Day + NASA_summative
##                     Value   Std.Error DF   t-value  p-value
## (Intercept)      3.1622660 0.15766148 19  20.057315  0.0000
## DayDay1         -0.0044394 0.12156148 19  -0.036520  0.9712
## DayDay2         -0.0647221 0.12945111 19  -0.499973  0.6228
## DayDay3          0.1303739 0.11532590 19   1.130483  0.2723
## NASA_summative   0.0017353 0.00242745 19   0.714883  0.4834
##  Correlation:
##                (Intr) DayDy1 DayDy2 DayDy3
## DayDay1        -0.104
## DayDay2         0.029  0.600
## DayDay3        -0.453  0.482  0.440
## NASA_summative -0.820 -0.324 -0.459  0.076
##
## Standardized Within-Group Residuals:
##           Min             Q1           Med            Q3            Max
## -2.746112e+00 -4.378082e-01 -9.275636e-06  7.113615e-01  1.322123e+00
##
## Number of Observations: 31
## Number of Groups: 8


##                numDF denDF  F-value p-value
## (Intercept)        1    19 4105.337  <.0001
## Day                3    19    0.673  0.5790
## NASA_summative     1    19    0.511  0.4834
```