Confirmatory 1A Analysis Markdown

# PREPARATION

## Load Packages

## Read in data

## First factor: Subfield

## Second factor: Time

## Select relevant data

# DATA ANOVA Analysis

## Coefficient covariances computed by hccm()

## ANOVA Table (type II tests)  
##   
## Effect DFn DFd F p p<.05 ges  
## 1 subfield\_groups 3 310 2.230 0.0850000 0.021  
## 2 time\_period 2 310 11.295 0.0000184 \* 0.068  
## 3 subfield\_groups:time\_period 6 310 1.566 0.1570000 0.029

Our two-way between-subjects ANOVA generated a significant main effect of time period, F(2, 310) = 11.295, p = 0.0000184, ges = 0.068. However, the main effect of subfield, F(3, 310) = 2.23, p = 0.085, ges = 0.021, and the interaction between subfield and time period, F(6, 310) = 1.566, ges = 0.029, were not statistically significant.

## Contrasts set to contr.sum for the following variables: time\_period, subfield\_groups

## Anova Table (Type 2 tests)  
##   
## Response: total\_data\_score  
## num Df den Df MSE F ges Pr(>F)  
## time\_period 2 310 41.512 11.2946 0.067919 0.00001842  
## subfield\_groups 3 310 41.512 2.2299 0.021123 0.08471  
## time\_period:subfield\_groups 6 310 41.512 1.5659 0.029417 0.15660  
##   
## time\_period \*\*\*  
## subfield\_groups .   
## time\_period:subfield\_groups   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

(#tab:unnamed-chunk-7)

*Between-subjects ANOVA for Open Data Scores*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Effect |  |  |  |  |  |  |
| Time period | 11.29 | 2 | 310 | 41.51 | < .001 | .068 |
| Subfield groups | 2.23 | 3 | 310 | 41.51 | .085 | .021 |
| Time period Subfield groups | 1.57 | 6 | 310 | 41.51 | .157 | .029 |

*Note.* This table was created with apa\_table().

Our two-way between-subjects ANOVA generated a significant main effect of time period, , , , . However, the main effect of subfield, , , , , and the interaction between time period and subfield, , , , , were not statistically significant.

# MATERIALS ANOVA Analysis

## Coefficient covariances computed by hccm()

## ANOVA Table (type II tests)  
##   
## Effect DFn DFd F p p<.05 ges  
## 1 subfield\_groups 3 310 4.033 0.008 \* 0.038  
## 2 time\_period 2 310 4.737 0.009 \* 0.030  
## 3 subfield\_groups:time\_period 6 310 0.853 0.530 0.016

Our two-way between-subjects ANOVA generated a significant main effect of subfield, F(3, 310) = 4.033, p = 0.008, ges = 0.038, and a significant main effect of time period, F(2, 310) = 4.737, p = 0.009, ges = 0.03. However, the interaction between subfield and time period, F(6, 310) = 0.853, ges = 0.016, was not statistically significant.

## Contrasts set to contr.sum for the following variables: time\_period, subfield\_groups

## Anova Table (Type 2 tests)  
##   
## Response: total\_materials\_score  
## num Df den Df MSE F ges Pr(>F)   
## time\_period 2 310 32.158 4.7375 0.029658 0.009405 \*\*  
## subfield\_groups 3 310 32.158 4.0326 0.037559 0.007781 \*\*  
## time\_period:subfield\_groups 6 310 32.158 0.8526 0.016235 0.530212   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

(#tab:unnamed-chunk-9)

*Between-subjects ANOVA for Open Materials Scores*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Effect |  |  |  |  |  |  |
| Time period | 4.74 | 2 | 310 | 32.16 | .009 | .030 |
| Subfield groups | 4.03 | 3 | 310 | 32.16 | .008 | .038 |
| Time period Subfield groups | 0.85 | 6 | 310 | 32.16 | .530 | .016 |

*Note.* This table was created with apa\_table().

Our two-way between-subjects ANOVA generated a significant main effect of subfield, , , , , and a significant main effect of time period, , , , . However the interaction between time period and subfield, , , , , was not statistically significant.

# PLOTS

## DATA

### Subfield x Data Score

## # A tibble: 4 × 5  
## subfield\_groups mean\_data\_score SD N stderr  
## <fct> <dbl> <dbl> <int> <dbl>  
## 1 Development 2.38 6.02 65 0.746  
## 2 Social 4.62 7.34 91 0.770  
## 3 Cognition 4.03 7.07 91 0.742  
## 4 Other 2.79 5.84 75 0.674

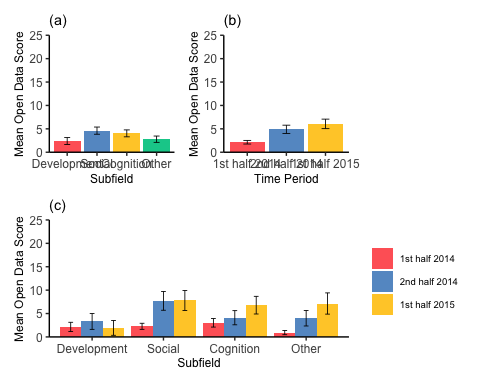
### Time Period x Data Score

## # A tibble: 3 × 5  
## time\_period mean\_data\_score SD N stderr  
## <fct> <dbl> <dbl> <int> <dbl>  
## 1 1st half 2014 2.14 5.24 183 0.388  
## 2 2nd half 2014 4.90 7.47 72 0.880  
## 3 1st half 2015 6.06 8.32 67 1.02

### Interaction between time and subfield - Data scores

## `summarise()` has grouped output by 'subfield\_groups'. You can override using the `.groups` argument.

## # A tibble: 12 × 6  
## # Groups: subfield\_groups [4]  
## subfield\_groups time\_period mean\_data\_score SD N stderr  
## <fct> <fct> <dbl> <dbl> <int> <dbl>  
## 1 Development 1st half 2014 2.15 5.73 34 0.982  
## 2 Development 2nd half 2014 3.31 6.78 16 1.69   
## 3 Development 1st half 2015 1.93 6.13 15 1.58   
## 4 Social 1st half 2014 2.27 4.69 52 0.650  
## 5 Social 2nd half 2014 7.7 8.93 20 2.00   
## 6 Social 1st half 2015 7.79 9.27 19 2.13   
## 7 Cognition 1st half 2014 3.02 6.65 53 0.914  
## 8 Cognition 2nd half 2014 4.11 6.60 19 1.51   
## 9 Cognition 1st half 2015 6.79 8.23 19 1.89   
## 10 Other 1st half 2014 0.932 3.03 44 0.457  
## 11 Other 2nd half 2014 4 6.85 17 1.66   
## 12 Other 1st half 2015 7.14 8.48 14 2.27



## MATERIALS

### Subfield x Materials Score

## # A tibble: 4 × 5  
## subfield\_groups mean\_materials\_score SD N stderr  
## <fct> <dbl> <dbl> <int> <dbl>  
## 1 Development 1.82 6.02 65 0.746  
## 2 Social 4.19 7.34 91 0.770  
## 3 Cognition 4.59 7.07 91 0.742  
## 4 Other 2.83 5.84 75 0.674

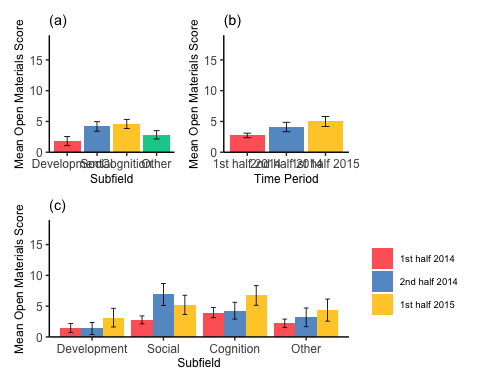
### Time Period x Materials Score

## # A tibble: 3 × 5  
## time\_period mean\_materials\_score SD N stderr  
## <fct> <dbl> <dbl> <int> <dbl>  
## 1 1st half 2014 2.73 5.04 183 0.373  
## 2 2nd half 2014 4.10 6.51 72 0.767  
## 3 1st half 2015 5 6.62 67 0.809

### Interaction between time and subfield - Materials Score

## `summarise()` has grouped output by 'subfield\_groups'. You can override using the `.groups` argument.

## # A tibble: 12 × 6  
## # Groups: subfield\_groups [4]  
## subfield\_groups time\_period mean\_materials\_score SD N stderr  
## <fct> <fct> <dbl> <dbl> <int> <dbl>  
## 1 Development 1st half 2014 1.44 4.31 34 0.740  
## 2 Development 2nd half 2014 1.38 3.91 16 0.978  
## 3 Development 1st half 2015 3.13 5.89 15 1.52   
## 4 Social 1st half 2014 2.77 4.63 52 0.643  
## 5 Social 2nd half 2014 6.9 8.00 20 1.79   
## 6 Social 1st half 2015 5.21 6.81 19 1.56   
## 7 Cognition 1st half 2014 3.94 5.97 53 0.820  
## 8 Cognition 2nd half 2014 4.26 5.96 19 1.37   
## 9 Cognition 1st half 2015 6.74 6.94 19 1.59   
## 10 Other 1st half 2014 2.20 4.61 44 0.695  
## 11 Other 2nd half 2014 3.18 6.28 17 1.52   
## 12 Other 1st half 2015 4.36 6.72 14 1.80

 # SUBFIELD T-TESTS

## DATA

Subfield main effect for Open Data Scores was not significant, so no t-tests to run here

## MATERIALS

### Developmental vs. Cognition

An independent samples t-test showed that articles published in the the field of Cognition generated significantly higher Open Materials Scores, on average, than articles published in the field of Developmental Psychology,

## t(153.74) = -3.20, p = .002, d = -0.50

## Effect sizes were labelled following Cohen's (1988) recommendations.  
##   
## The Welch Two Sample t-test testing the difference of total\_materials\_score by subfield\_groups (mean in group Development = 1.82, mean in group Cognition = 4.59) suggests that the effect is positive, statistically significant, and medium (difference = 2.78, 95% CI [-4.49, -1.06], t(153.74) = -3.20, p = 0.002; Cohen's d = -0.52, 95% CI [-0.84, -0.19])

### Developmental vs. Social

An independent samples t-test showed that articles published in the the field of Social Psychology generated significantly higher Open Materials Scores, on average, than articles published in the field of Developmental Psychology,

## t(153.62) = -2.75, p = .007, d = -0.43

## Effect sizes were labelled following Cohen's (1988) recommendations.  
##   
## The Welch Two Sample t-test testing the difference of total\_materials\_score by subfield\_groups (mean in group Development = 1.82, mean in group Social = 4.19) suggests that the effect is positive, statistically significant, and small (difference = 2.37, 95% CI [-4.08, -0.67], t(153.62) = -2.75, p = 0.007; Cohen's d = -0.44, 95% CI [-0.76, -0.12])

### Developmental vs. Other

An independent samples t-test showed that articles published in the the Other subfield did not generate significantly higher Open Materials Scores, on average, than articles published in the field of Developmental Psychology,

## t(137.95) = -1.19, p = .236, d = -0.20

## Effect sizes were labelled following Cohen's (1988) recommendations.  
##   
## The Welch Two Sample t-test testing the difference of total\_materials\_score by subfield\_groups (mean in group Development = 1.82, mean in group Other = 2.83) suggests that the effect is positive, statistically not significant, and small (difference = 1.01, 95% CI [-2.69, 0.67], t(137.95) = -1.19, p = 0.236; Cohen's d = -0.20, 95% CI [-0.54, 0.13])

# TIME T-TESTS

## DATA

### First half 2014 vs. Second half 2014

An independent samples t-test showed that articles published in the second half of 2014 generated significantly higher Open Data Scores, on average, than articles published in the first half of 2014,

## t(99.74) = -2.87, p = .005, d = -0.46

## Effect sizes were labelled following Cohen's (1988) recommendations.  
##   
## The Welch Two Sample t-test testing the difference of total\_data\_score by time\_period (mean in group 1st half 2014 = 2.14, mean in group 2nd half 2014 = 4.90) suggests that the effect is positive, statistically significant, and medium (difference = 2.76, 95% CI [-4.67, -0.85], t(99.74) = -2.87, p = 0.005; Cohen's d = -0.57, 95% CI [-0.97, -0.17])

### Second half 2014 vs. First half 2015

An independent samples t-test showed that articles published in the first half of 2015 did not generate significantly higher Open Data Scores, on average, than articles published in the second half of 2014,

## t(132.74) = -0.86, p = .391, d = -0.15

## Effect sizes were labelled following Cohen's (1988) recommendations.  
##   
## The Welch Two Sample t-test testing the difference of total\_data\_score by time\_period (mean in group 2nd half 2014 = 4.90, mean in group 1st half 2015 = 6.06) suggests that the effect is positive, statistically not significant, and very small (difference = 1.16, 95% CI [-3.82, 1.50], t(132.74) = -0.86, p = 0.391; Cohen's d = -0.15, 95% CI [-0.49, 0.19])

## MATERIALS

### First half 2014 vs. Second half 2014

An independent samples t-test showed that articles published in the second half of 2014 did not generate statistically different Open Data Scores, on average, than articles published in the first half of 2014,

## t(106.17) = -1.61, p = .111, d = -0.25

## Effect sizes were labelled following Cohen's (1988) recommendations.  
##   
## The Welch Two Sample t-test testing the difference of total\_materials\_score by time\_period (mean in group 1st half 2014 = 2.73, mean in group 2nd half 2014 = 4.10) suggests that the effect is positive, statistically not significant, and small (difference = 1.37, 95% CI [-3.06, 0.32], t(106.17) = -1.61, p = 0.111; Cohen's d = -0.31, 95% CI [-0.69, 0.07])

### Second half 2014 vs. First half 2015

An independent samples t-test showed that articles published in the first half of 2015 did not generate statistically different Open Data Scores, on average, than articles published in the second half of 2014,

## t(135.91) = -0.81, p = .419, d = -0.14

## Effect sizes were labelled following Cohen's (1988) recommendations.  
##   
## The Welch Two Sample t-test testing the difference of total\_materials\_score by time\_period (mean in group 2nd half 2014 = 4.10, mean in group 1st half 2015 = 5.00) suggests that the effect is positive, statistically not significant, and very small (difference = 0.90, 95% CI [-3.11, 1.30], t(135.91) = -0.81, p = 0.419; Cohen's d = -0.14, 95% CI [-0.48, 0.20])

### First half 2014 vs. First half 2015

An independent samples t-test showed that articles published in the first half of 2015 generated significantly higher Open Data Scores, on average, than articles published in the first half of 2014,

## t(95.44) = -2.55, p = .012, d = -0.41

## Effect sizes were labelled following Cohen's (1988) recommendations.  
##   
## The Welch Two Sample t-test testing the difference of total\_materials\_score by time\_period (mean in group 1st half 2014 = 2.73, mean in group 1st half 2015 = 5.00) suggests that the effect is positive, statistically significant, and medium (difference = 2.27, 95% CI [-4.04, -0.51], t(95.44) = -2.55, p = 0.012; Cohen's d = -0.52, 95% CI [-0.93, -0.11])