(*X2*(1) = 0, *p >* 0.05).

**Null Model**

Family: nbinom2 ( log )

Formula: Internal\_total ~ Emotion\_Condition + (1 | ID)

Data: data

AIC BIC logLik -2\*log(L) df.resid

4209.7 4232.3 -2099.9 4199.7 665

Random effects:

Conditional model:

Groups Name Variance Std.Dev.

ID (Intercept) 0.1615 0.4019

Number of obs: 670, groups: ID, 115

Dispersion parameter for nbinom2 family (): 1.28

Conditional model:

Estimate Std. Error z value Pr(>|z|)

(Intercept) 1.99553 0.07671 26.015 <2e-16 \*\*\*

Emotion\_ConditionNegative -0.02863 0.09335 -0.307 0.759

Emotion\_ConditionPositive 0.08121 0.09247 0.878 0.380

---

Signif. codes: 0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1

>

**Model 1**

Family: nbinom2 ( log )

Formula: Internal\_total ~ Emotion\_Condition + ZMRT\_TOTAL + Spatial\_OSIQ\_z + (1 | ID)

Data: data

AIC BIC logLik -2\*log(L) df.resid

4203.7 4235.2 -2094.8 4189.7 663

Random effects:

Conditional model:

Groups Name Variance Std.Dev.

ID (Intercept) 0.1356 0.3683

Number of obs: 670, groups: ID, 115

Dispersion parameter for nbinom2 family (): 1.28

Conditional model:

Estimate Std. Error z value Pr(>|z|)

(Intercept) 1.99624 0.07515 26.562 < 2e-16 \*\*\*

Emotion\_ConditionNegative -0.02525 0.09316 -0.271 0.78636

Emotion\_ConditionPositive 0.07212 0.09237 0.781 0.43498

ZMRT\_TOTAL 0.12359 0.05397 2.290 0.02202 \*

Spatial\_OSIQ\_z -0.14244 0.05256 -2.710 0.00673 \*\*

---

Signif. codes: 0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ Signif. codes: 0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1

**Comparison**

model\_null: Internal\_total ~ Emotion\_Condition + (1 | ID), zi=~0, disp=~1

model1: Internal\_total ~ Emotion\_Condition + ZMRT\_TOTAL + Spatial\_OSIQ\_z + , zi=~0, disp=~1

model1: (1 | ID), zi=~0, disp=~1

Df AIC BIC logLik deviance Chisq Chi Df Pr(>Chisq)

model\_null 5 4209.7 4232.3 -2099.9 4199.7

model1 7 4203.7 4235.2 -2094.8 4189.7 10.062 2 0.006532 \*\*

---

Signif. codes: 0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1

**Model 2**

Family: nbinom2 ( log )

Formula: Internal\_total ~ Emotion\_Condition + Object\_OSIQ\_z + Spatial\_OSIQ\_z +

ZVVIQ\_TOTAL + ZMRT\_TOTAL + (1 | ID)

Data: data

AIC BIC logLik -2\*log(L) df.resid

4206.1 4246.7 -2094.1 4188.1 661

Random effects:

Conditional model:

Groups Name Variance Std.Dev.

ID (Intercept) 0.1312 0.3623

Number of obs: 670, groups: ID, 115

Dispersion parameter for nbinom2 family (): 1.28

Conditional model:

Estimate Std. Error z value Pr(>|z|)

(Intercept) 1.997081 0.074910 26.660 < 2e-16 \*\*\*

Emotion\_ConditionNegative -0.026125 0.093168 -0.280 0.77917

Emotion\_ConditionPositive 0.071328 0.092370 0.772 0.44000

Object\_OSIQ\_z 0.002942 0.054857 0.054 0.95723

Spatial\_OSIQ\_z -0.141687 0.052868 -2.680 0.00736 \*\*

ZVVIQ\_TOTAL 0.062808 0.054728 1.148 0.25112

ZMRT\_TOTAL 0.119003 0.053701 2.216 0.02669 \*

---

Signif. codes: 0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1

**Comparison**

model1: Internal\_total ~ Emotion\_Condition + ZMRT\_TOTAL + Spatial\_OSIQ\_z + , zi=~0, disp=~1

model1: (1 | ID), zi=~0, disp=~1

model2: Internal\_total ~ Emotion\_Condition + Object\_OSIQ\_z + Spatial\_OSIQ\_z + , zi=~0, disp=~1

model2: ZVVIQ\_TOTAL + ZMRT\_TOTAL + (1 | ID), zi=~0, disp=~1

Df AIC BIC logLik deviance Chisq Chi Df Pr(>Chisq)

model1 7 4203.7 4235.2 -2094.8 4189.7

model2 9 4206.1 4246.7 -2094.1 4188.1 1.5596 2 0.4585

**Compared\_performance**

Name | Model | AIC (weights) | AICc (weights) | BIC (weights) | R2 (cond.) | R2 (marg.) | ICC | RMSE | Sigma | Score\_log | Score\_spherical

---------------------------------------------------------------------------------------------------------------------------------------------------

model1 | glmmTMB | 4203.7 (0.772) | 4203.9 (0.781) | 4235.2 (0.997) | 0.203 | 0.037 | 0.173 | 5.665 | 1.280 | -3.036 | 0.034

model2 | glmmTMB | 4206.1 (0.228) | 4206.4 (0.219) | 4246.7 (0.003) | 0.203 | 0.042 | 0.168 | 5.674 | 1.280 | -3.038 | 0.034

**Vividness**

**Null**

Cumulative Link Mixed Model fitted with the Laplace approximation

formula: as.factor(Vividness) ~ Emotion\_Condition + (1 | ID)

data: data

link threshold nobs logLik AIC niter max.grad cond.H

logit flexible 670 -486.22 990.44 544(1634) 3.30e-04 2.5e+02

Random effects:

Groups Name Variance Std.Dev.

ID (Intercept) 0.4072 0.6381

Number of groups: ID 115

Coefficients:

Estimate Std. Error z value Pr(>|z|)

Emotion\_ConditionNegative -3.5840 0.3527 -10.160 <2e-16 \*\*\*

Emotion\_ConditionPositive 0.2271 0.4427 0.513 0.608

---

Signif. codes: 0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Threshold coefficients:

Estimate Std. Error z value

1|2 -8.1437 0.7047 -11.557

2|3 -6.3326 0.4631 -13.675

3|4 -5.5363 0.4193 -13.204

4|5 -4.8273 0.3891 -12.406

5|6 -3.9342 0.3558 -11.057

6|7 -3.0106 0.3235 -9.30

**Comparison**

Likelihood ratio tests of cumulative link models:

formula: link: threshold:

model\_likert\_null as.factor(Vividness) ~ Emotion\_Condition + (1 | ID) logit flexible

model\_likert as.factor(Vividness) ~ Emotion\_Condition + Object\_OSIQ\_z + ZVVIQ\_TOTAL + (1 | ID) logit flexible

no.par AIC logLik LR.stat df Pr(>Chisq)

model\_likert\_null 9 990.44 -486.22

model\_likert 11 983.71 -480.86 10.732 2 0.004672 \*\*

**Model 1**

Cumulative Link Mixed Model fitted with the Laplace approximation

formula: as.factor(Vividness) ~ Emotion\_Condition + Object\_OSIQ\_z + ZVVIQ\_TOTAL + (1 | ID)

data: data

link threshold nobs logLik AIC niter max.grad cond.H

logit flexible 670 -480.86 983.71 776(1567) 3.94e-04 2.5e+02

Random effects:

Groups Name Variance Std.Dev.

ID (Intercept) 0.2715 0.521

Number of groups: ID 115

Coefficients:

Estimate Std. Error z value Pr(>|z|)

Emotion\_ConditionNegative -3.57567 0.35346 -10.116 < 2e-16 \*\*\*

Emotion\_ConditionPositive 0.23283 0.44338 0.525 0.59951

Object\_OSIQ\_z 0.05778 0.12500 0.462 0.64390

ZVVIQ\_TOTAL 0.37530 0.12874 2.915 0.00356 \*\*

---

Signif. codes: 0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Threshold coefficients:

Estimate Std. Error z value

1|2 -8.1572 0.7038 -11.590

2|3 -6.3422 0.4619 -13.732

3|4 -5.5399 0.4178 -13.261

4|5 -4.8368 0.3880 -12.466

5|6 -3.9488 0.3553 -11.115

6|7 -3.0148 0.3224 -9.351

**Model 2**

Cumulative Link Mixed Model fitted with the Laplace approximation

formula: as.factor(Vividness) ~ Emotion\_Condition + Object\_OSIQ\_z + Spatial\_OSIQ\_z +

ZVVIQ\_TOTAL + ZMRT\_TOTAL + (1 | ID)

data: data

link threshold nobs logLik AIC niter max.grad cond.H

logit flexible 670 -479.11 984.23 1159(2335) 2.98e-04 2.7e+02

Random effects:

Groups Name Variance Std.Dev.

ID (Intercept) 0.1957 0.4424

Number of groups: ID 115

Coefficients:

Estimate Std. Error z value Pr(>|z|)

Emotion\_ConditionNegative -3.56473 0.35433 -10.060 < 2e-16 \*\*\*

Emotion\_ConditionPositive 0.23590 0.44324 0.532 0.59458

Object\_OSIQ\_z 0.06390 0.12360 0.517 0.60518

Spatial\_OSIQ\_z 0.06151 0.11889 0.517 0.60489

ZVVIQ\_TOTAL 0.37811 0.12616 2.997 0.00273 \*\*

ZMRT\_TOTAL -0.22379 0.11851 -1.888 0.05898 .

---

Signif. codes: 0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Threshold coefficients:

Estimate Std. Error z value

1|2 -8.1291 0.7042 -11.54

2|3 -6.3195 0.4627 -13.66

3|4 -5.5200 0.4190 -13.17

4|5 -4.8168 0.3891 -12.38

5|6 -3.9295 0.3556 -11.05

6|7 -3.0012 0.3220 -9.32

**Comparison**

Likelihood ratio tests of cumulative link models:

formula:

model\_likert as.factor(Vividness) ~ Emotion\_Condition + Object\_OSIQ\_z + ZVVIQ\_TOTAL + (1 | ID)

model\_likert2 as.factor(Vividness) ~ Emotion\_Condition + Object\_OSIQ\_z + Spatial\_OSIQ\_z + ZVVIQ\_TOTAL + ZMRT\_TOTAL + (1 | ID)

link: threshold:

model\_likert logit flexible

model\_likert2 logit flexible

no.par AIC logLik LR.stat df Pr(>Chisq)

model\_likert 11 983.71 -480.86

model\_likert2 13 984.23 -479.11 3.4874 2 0.1749

**Compare\_perf**

Name | Model | AIC (weights) | BIC (weights) | R2 (cond.) | R2 (marg.) | RMSE | Sigma

------------------------------------------------------------------------------------------------

model\_likert | clmm | 983.7 (0.564) | 1033.3 (0.992) | 0.515 | 0.474 | 5.812 | 1.814

model\_likert2 | clmm | 984.2 (0.436) | 1042.8 (0.008) | 0.511 | 0.481 | 5.813 | 1.814