Model Test User Model:

Test statistic 204.508

Degrees of freedom 21

P-value (Chi-square) 0.000

Model Test Baseline Model:

Test statistic 3224.425

Degrees of freedom 45

P-value 0.000

User Model versus Baseline Model:

Comparative Fit Index (CFI) 0.942

Tucker-Lewis Index (TLI) 0.876

Loglikelihood and Information Criteria:

Loglikelihood user model (H0) -55542.881

Loglikelihood unrestricted model (H1) -55440.627

Akaike (AIC) 111139.761

Bayesian (BIC) 111328.597

Sample-size adjusted Bayesian (BIC) 111242.796

Root Mean Square Error of Approximation:

RMSEA 0.033

90 Percent confidence interval - lower 0.029

90 Percent confidence interval - upper 0.037

P-value RMSEA <= 0.05 1.000

Standardized Root Mean Square Residual:

SRMR 0.013

Parameter Estimates:

Standard errors Bootstrap

Number of requested bootstrap draws 1000

Number of successful bootstrap draws 1000

Latent Variables:

Estimate Std.Err z-value P(>|z|) Std.lv Std.all

Refereebias =~

FoulDifference 1.000 2.491 0.471

YellwCrdDffrnc 0.491 0.027 18.161 0.000 1.224 0.697

Regressions:

Estimate Std.Err z-value P(>|z|) Std.lv Std.all

Refereebias ~

covid (a) -0.585 0.077 -7.601 0.000 -0.235 -0.113

OccpncyRt (a2) 0.161 0.058 2.782 0.005 0.065 0.065

OccpncyR: (a3) 0.029 0.091 0.323 0.747 0.012 0.008

AvrgAttnd (a4) -0.174 0.061 -2.867 0.004 -0.070 -0.070

FrgnrsShD (a5) -0.063 0.050 -1.263 0.207 -0.025 -0.025

AvrgAttn: (a6) -0.052 0.092 -0.564 0.573 -0.021 -0.013

FrgnrsSD: (a7) -0.033 0.078 -0.423 0.672 -0.013 -0.008

RtngDffrn (d1) 0.045 0.001 30.923 0.000 0.018 0.285

ImprtncDf (d2) 0.002 0.001 2.923 0.003 0.001 0.022

ShtsDffrn (d3) 0.013 0.006 2.207 0.027 0.005 0.034

VAR (d4) 0.081 0.059 1.367 0.172 0.032 0.009

league (d6) -0.003 0.007 -0.371 0.711 -0.001 -0.003

GoalDifference ~

covid (cp) -0.184 0.040 -4.577 0.000 -0.184 -0.048

Refereebs (b) 0.039 0.012 3.323 0.001 0.096 0.053

OccpncyRt (b2) 0.019 0.033 0.576 0.565 0.019 0.010

OccpncyR: (b3) -0.158 0.047 -3.364 0.001 -0.158 -0.055

AvrgAttnd (b4) 0.067 0.032 2.093 0.036 0.067 0.037

FrgnrsShD (b5) 0.039 0.025 1.585 0.113 0.039 0.021

AvrgAttn: (b6) 0.055 0.051 1.090 0.276 0.055 0.019

FrgnrsSD: (b7) 0.005 0.038 0.140 0.889 0.005 0.002

AgeDffrnc (b8) 0.021 0.024 0.887 0.375 0.021 0.011

AgDffrnc: (b9) -0.049 0.039 -1.277 0.201 -0.049 -0.016

RtngDffrn (d1) 0.045 0.001 30.923 0.000 0.045 0.387

ImprtncDf (d2) 0.002 0.001 2.923 0.003 0.002 0.030

VAR (d4) 0.081 0.059 1.367 0.172 0.081 0.012

league (d6) -0.003 0.007 -0.371 0.711 -0.003 -0.004

Variances:

Estimate Std.Err z-value P(>|z|) Std.lv Std.all

.Refereebias 5.586 0.349 16.005 0.000 0.900 0.900

.FoulDifference 21.789 0.504 43.203 0.000 21.789 0.778

.YellwCrdDffrnc 1.584 0.096 16.485 0.000 1.584 0.514

.GoalDifference 2.692 0.049 55.215 0.000 2.692 0.803

R-Square:

Estimate

Refereebias 0.100

FoulDifference 0.222

YellwCrdDffrnc 0.486

GoalDifference 0.197

Defined Parameters:

Estimate Std.Err z-value P(>|z|) Std.lv Std.all

Direct -0.184 0.040 -4.575 0.000 -0.184 -0.048

indirect -0.023 0.007 -3.225 0.001 -0.023 -0.006

mdrtdmdtnffctc 0.001 0.004 0.313 0.754 0.001 0.000

mdrtdffctccpnc -0.158 0.047 -3.363 0.001 -0.158 -0.055

totlffctccpncy -0.157 0.047 -3.336 0.001 -0.157 -0.055

mdrtdmdtnffctt -0.002 0.004 -0.531 0.596 -0.002 -0.001

mdrtdffctttndn 0.055 0.051 1.089 0.276 0.055 0.019

totlffctttndnc 0.053 0.051 1.047 0.295 0.053 0.018

mdrtdmdtnffctf -0.001 0.003 -0.405 0.686 -0.001 -0.000

mdrtdffctfrgnr 0.005 0.038 0.140 0.889 0.005 0.002

ttlffctfrgnrss 0.004 0.038 0.107 0.915 0.004 0.001

moderatdffctAg -0.049 0.039 -1.277 0.202 -0.049 -0.016

total -0.207 0.039 -5.232 0.000 -0.207 -0.054

confounderRtng 0.045 0.001 30.908 0.000 0.018 0.285

confndrImprtnc 0.002 0.001 2.922 0.003 0.001 0.022

confounderShts 0.013 0.006 2.206 0.027 0.005 0.034

counfounderVar 0.081 0.059 1.366 0.172 0.032 0.009

confounderleag -0.003 0.007 -0.371 0.711 -0.001 -0.003

Model Test User Model:

Test statistic 206.452

Degrees of freedom 21

P-value (Chi-square) 0.000

Model Test Baseline Model:

Test statistic 2727.809

Degrees of freedom 45

P-value 0.000

User Model versus Baseline Model:

Comparative Fit Index (CFI) 0.931

Tucker-Lewis Index (TLI) 0.852

Loglikelihood and Information Criteria:

Loglikelihood user model (H0) -58467.398

Loglikelihood unrestricted model (H1) -58364.172

Akaike (AIC) 116988.795

Bayesian (BIC) 117177.631

Sample-size adjusted Bayesian (BIC) 117091.831

Root Mean Square Error of Approximation:

RMSEA 0.033

90 Percent confidence interval - lower 0.029

90 Percent confidence interval - upper 0.037

P-value RMSEA <= 0.05 1.000

Standardized Root Mean Square Residual:

SRMR 0.013

Parameter Estimates:

Standard errors Bootstrap

Number of requested bootstrap draws 1000

Number of successful bootstrap draws 1000

Latent Variables:

Estimate Std.Err z-value P(>|z|) Std.lv Std.all

Refereebias =~

FoulDifference 1.000 2.654 0.500

YellwCrdDffrnc 0.438 0.025 17.683 0.000 1.162 0.661

Regressions:

Estimate Std.Err z-value P(>|z|) Std.lv Std.all

Refereebias ~

covid (a) -0.641 0.085 -7.513 0.000 -0.241 -0.116

OccpncyRt (a2) 0.174 0.065 2.669 0.008 0.066 0.066

OccpncyR: (a3) 0.028 0.104 0.270 0.787 0.011 0.007

AvrgAttnd (a4) -0.193 0.067 -2.857 0.004 -0.073 -0.073

FrgnrsShD (a5) -0.077 0.053 -1.437 0.151 -0.029 -0.029

AvrgAttn: (a6) -0.064 0.104 -0.618 0.536 -0.024 -0.015

FrgnrsSD: (a7) -0.038 0.086 -0.442 0.659 -0.014 -0.009

RtngDffrn (d1) 0.053 0.002 27.848 0.000 0.020 0.310

ImprtncDf (d2) 0.002 0.001 2.859 0.004 0.001 0.025

ShtsDffrn (d3) 0.008 0.007 1.194 0.232 0.003 0.019

VAR (d4) 0.127 0.079 1.598 0.110 0.048 0.013

league (d6) -0.004 0.010 -0.445 0.657 -0.002 -0.004

PointsDifference ~

covid (cp) -0.269 0.055 -4.884 0.000 -0.269 -0.051

Refereebs (b) 0.037 0.017 2.172 0.030 0.097 0.038

OccpncyRt (b2) 0.002 0.046 0.049 0.961 0.002 0.001

OccpncyR: (b3) -0.199 0.070 -2.852 0.004 -0.199 -0.050

AvrgAttnd (b4) 0.118 0.042 2.836 0.005 0.118 0.047

FrgnrsShD (b5) 0.064 0.035 1.818 0.069 0.064 0.025

AvrgAttn: (b6) 0.041 0.067 0.613 0.540 0.041 0.010

FrgnrsSD: (b7) -0.008 0.058 -0.141 0.888 -0.008 -0.002

AgeDffrnc (b8) 0.069 0.033 2.067 0.039 0.069 0.027

AgDffrnc: (b9) -0.077 0.056 -1.386 0.166 -0.077 -0.018

RtngDffrn (d1) 0.053 0.002 27.848 0.000 0.053 0.324

ImprtncDf (d2) 0.002 0.001 2.859 0.004 0.002 0.026

VAR (d4) 0.127 0.079 1.598 0.110 0.127 0.014

league (d6) -0.004 0.010 -0.445 0.657 -0.004 -0.004

Variances:

Estimate Std.Err z-value P(>|z|) Std.lv Std.all

.Refereebias 6.266 0.429 14.611 0.000 0.890 0.890

.FoulDifference 21.131 0.523 40.441 0.000 21.131 0.750

.YellwCrdDffrnc 1.738 0.086 20.101 0.000 1.738 0.563

.PointsDiffernc 5.552 0.059 93.744 0.000 5.552 0.858

R-Square:

Estimate

Refereebias 0.110

FoulDifference 0.250

YellwCrdDffrnc 0.437

PointsDiffernc 0.142

Defined Parameters:

Estimate Std.Err z-value P(>|z|) Std.lv Std.all

Direct -0.269 0.055 -4.881 0.000 -0.269 -0.051

indirect -0.023 0.011 -2.131 0.033 -0.023 -0.004

mdrtdmdtnffctc 0.001 0.004 0.248 0.804 0.001 0.000

mdrtdffctccpnc -0.199 0.070 -2.850 0.004 -0.199 -0.050

totlffctccpncy -0.198 0.070 -2.839 0.005 -0.198 -0.050

mdrtdmdtnffctt -0.002 0.004 -0.567 0.571 -0.002 -0.001

mdrtdffctttndn 0.041 0.067 0.613 0.540 0.041 0.010

totlffctttndnc 0.039 0.067 0.578 0.563 0.039 0.009

mdrtdmdtnffctf -0.001 0.003 -0.419 0.675 -0.001 -0.000

mdrtdffctfrgnr -0.008 0.058 -0.141 0.888 -0.008 -0.002

ttlffctfrgnrss -0.010 0.058 -0.165 0.869 -0.010 -0.002

moderatdffctAg -0.077 0.056 -1.385 0.166 -0.077 -0.018

total -0.292 0.054 -5.403 0.000 -0.292 -0.055

confounderRtng 0.053 0.002 27.834 0.000 0.020 0.310

confndrImprtnc 0.002 0.001 2.858 0.004 0.001 0.025

confounderShts 0.008 0.007 1.194 0.233 0.003 0.019

counfounderVar 0.127 0.079 1.597 0.110 0.048 0.013

confounderleag -0.004 0.010 -0.444 0.657 -0.002 -0.004

5000 BOOTSTRAPS

Model Test User Model:

Test statistic 204.508

Degrees of freedom 21

P-value (Chi-square) 0.000

Model Test Baseline Model:

Test statistic 3224.425

Degrees of freedom 45

P-value 0.000

User Model versus Baseline Model:

Comparative Fit Index (CFI) 0.942

Tucker-Lewis Index (TLI) 0.876

Loglikelihood and Information Criteria:

Loglikelihood user model (H0) -55542.881

Loglikelihood unrestricted model (H1) -55440.627

Akaike (AIC) 111139.761

Bayesian (BIC) 111328.597

Sample-size adjusted Bayesian (BIC) 111242.796

Root Mean Square Error of Approximation:

RMSEA 0.033

90 Percent confidence interval - lower 0.029

90 Percent confidence interval - upper 0.037

P-value RMSEA <= 0.05 1.000

Standardized Root Mean Square Residual:

SRMR 0.013

Parameter Estimates:

Standard errors Bootstrap

Number of requested bootstrap draws 5000

Number of successful bootstrap draws 5000

Latent Variables:

Estimate Std.Err z-value P(>|z|) Std.lv Std.all

Refereebias =~

FoulDifference 1.000 2.491 0.471

YellwCrdDffrnc 0.491 0.028 17.457 0.000 1.224 0.697

Regressions:

Estimate Std.Err z-value P(>|z|) Std.lv Std.all

Refereebias ~

covid (a) -0.585 0.079 -7.393 0.000 -0.235 -0.113

OccpncyRt (a2) 0.161 0.059 2.720 0.007 0.065 0.065

OccpncyR: (a3) 0.029 0.092 0.318 0.750 0.012 0.008

AvrgAttnd (a4) -0.174 0.060 -2.903 0.004 -0.070 -0.070

FrgnrsShD (a5) -0.063 0.050 -1.273 0.203 -0.025 -0.025

AvrgAttn: (a6) -0.052 0.095 -0.551 0.582 -0.021 -0.013

FrgnrsSD: (a7) -0.033 0.077 -0.425 0.671 -0.013 -0.008

RtngDffrn (d1) 0.045 0.001 30.660 0.000 0.018 0.285

ImprtncDf (d2) 0.002 0.001 3.054 0.002 0.001 0.022

ShtsDffrn (d3) 0.013 0.006 2.244 0.025 0.005 0.034

VAR (d4) 0.081 0.056 1.438 0.150 0.032 0.009

league (d6) -0.003 0.007 -0.376 0.707 -0.001 -0.003

GoalDifference ~

covid (cp) -0.184 0.039 -4.675 0.000 -0.184 -0.048

Refereebs (b) 0.039 0.012 3.212 0.001 0.096 0.053

OccpncyRt (b2) 0.019 0.032 0.593 0.553 0.019 0.010

OccpncyR: (b3) -0.158 0.048 -3.320 0.001 -0.158 -0.055

AvrgAttnd (b4) 0.067 0.030 2.194 0.028 0.067 0.037

FrgnrsShD (b5) 0.039 0.025 1.564 0.118 0.039 0.021

AvrgAttn: (b6) 0.055 0.052 1.064 0.287 0.055 0.019

FrgnrsSD: (b7) 0.005 0.039 0.137 0.891 0.005 0.002

AgeDffrnc (b8) 0.021 0.024 0.896 0.370 0.021 0.011

AgDffrnc: (b9) -0.049 0.038 -1.291 0.197 -0.049 -0.016

RtngDffrn (d1) 0.045 0.001 30.660 0.000 0.045 0.387

ImprtncDf (d2) 0.002 0.001 3.054 0.002 0.002 0.030

VAR (d4) 0.081 0.056 1.438 0.150 0.081 0.012

league (d6) -0.003 0.007 -0.376 0.707 -0.003 -0.004

Variances:

Estimate Std.Err z-value P(>|z|) Std.lv Std.all

.Refereebias 5.586 0.376 14.858 0.000 0.900 0.900

.FoulDifference 21.789 0.504 43.210 0.000 21.789 0.778

.YellwCrdDffrnc 1.584 0.098 16.208 0.000 1.584 0.514

.GoalDifference 2.692 0.050 53.496 0.000 2.692 0.803

R-Square:

Estimate

Refereebias 0.100

FoulDifference 0.222

YellwCrdDffrnc 0.486

GoalDifference 0.197

Defined Parameters:

Estimate Std.Err z-value P(>|z|) Std.lv Std.all

Direct -0.184 0.039 -4.674 0.000 -0.184 -0.048

indirect -0.023 0.007 -3.166 0.002 -0.023 -0.006

mdrtdmdtnffctc 0.001 0.004 0.306 0.760 0.001 0.000

mdrtdffctccpnc -0.158 0.048 -3.320 0.001 -0.158 -0.055

totlffctccpncy -0.157 0.048 -3.292 0.001 -0.157 -0.055

mdrtdmdtnffctt -0.002 0.004 -0.535 0.593 -0.002 -0.001

mdrtdffctttndn 0.055 0.052 1.064 0.287 0.055 0.019

totlffctttndnc 0.053 0.052 1.026 0.305 0.053 0.018

mdrtdmdtnffctf -0.001 0.003 -0.411 0.681 -0.001 -0.000

mdrtdffctfrgnr 0.005 0.039 0.137 0.891 0.005 0.002

ttlffctfrgnrss 0.004 0.039 0.104 0.917 0.004 0.001

moderatdffctAg -0.049 0.038 -1.291 0.197 -0.049 -0.016

total -0.207 0.039 -5.320 0.000 -0.207 -0.054

confounderRtng 0.045 0.001 30.657 0.000 0.018 0.285

confndrImprtnc 0.002 0.001 3.054 0.002 0.001 0.022

confounderShts 0.013 0.006 2.244 0.025 0.005 0.034

counfounderVar 0.081 0.056 1.438 0.151 0.032 0.009

confounderleag -0.003 0.007 -0.376 0.707 -0.001 -0.003

Model Test User Model:

Test statistic 206.452

Degrees of freedom 21

P-value (Chi-square) 0.000

Model Test Baseline Model:

Test statistic 2727.809

Degrees of freedom 45

P-value 0.000

User Model versus Baseline Model:

Comparative Fit Index (CFI) 0.931

Tucker-Lewis Index (TLI) 0.852

Loglikelihood and Information Criteria:

Loglikelihood user model (H0) -58467.398

Loglikelihood unrestricted model (H1) -58364.172

Akaike (AIC) 116988.795

Bayesian (BIC) 117177.631

Sample-size adjusted Bayesian (BIC) 117091.831

Root Mean Square Error of Approximation:

RMSEA 0.033

90 Percent confidence interval - lower 0.029

90 Percent confidence interval - upper 0.037

P-value RMSEA <= 0.05 1.000

Standardized Root Mean Square Residual:

SRMR 0.013

Parameter Estimates:

Standard errors Bootstrap

Number of requested bootstrap draws 5000

Number of successful bootstrap draws 5000

Latent Variables:

Estimate Std.Err z-value P(>|z|) Std.lv Std.all

Refereebias =~

FoulDifference 1.000 2.654 0.500

YellwCrdDffrnc 0.438 0.026 17.008 0.000 1.162 0.661

Regressions:

Estimate Std.Err z-value P(>|z|) Std.lv Std.all

Refereebias ~

covid (a) -0.641 0.086 -7.460 0.000 -0.241 -0.116

OccpncyRt (a2) 0.174 0.064 2.703 0.007 0.066 0.066

OccpncyR: (a3) 0.028 0.100 0.280 0.779 0.011 0.007

AvrgAttnd (a4) -0.193 0.066 -2.910 0.004 -0.073 -0.073

FrgnrsShD (a5) -0.077 0.053 -1.446 0.148 -0.029 -0.029

AvrgAttn: (a6) -0.064 0.104 -0.614 0.539 -0.024 -0.015

FrgnrsSD: (a7) -0.038 0.084 -0.451 0.652 -0.014 -0.009

RtngDffrn (d1) 0.053 0.002 27.843 0.000 0.020 0.310

ImprtncDf (d2) 0.002 0.001 2.812 0.005 0.001 0.025

ShtsDffrn (d3) 0.008 0.006 1.239 0.215 0.003 0.019

VAR (d4) 0.127 0.079 1.609 0.108 0.048 0.013

league (d6) -0.004 0.010 -0.435 0.664 -0.002 -0.004

PointsDifference ~

covid (cp) -0.269 0.057 -4.704 0.000 -0.269 -0.051

Refereebs (b) 0.037 0.017 2.148 0.032 0.097 0.038

OccpncyRt (b2) 0.002 0.045 0.049 0.961 0.002 0.001

OccpncyR: (b3) -0.199 0.068 -2.909 0.004 -0.199 -0.050

AvrgAttnd (b4) 0.118 0.042 2.825 0.005 0.118 0.047

FrgnrsShD (b5) 0.064 0.034 1.861 0.063 0.064 0.025

AvrgAttn: (b6) 0.041 0.067 0.617 0.538 0.041 0.010

FrgnrsSD: (b7) -0.008 0.055 -0.148 0.882 -0.008 -0.002

AgeDffrnc (b8) 0.069 0.033 2.078 0.038 0.069 0.027

AgDffrnc: (b9) -0.077 0.055 -1.398 0.162 -0.077 -0.018

RtngDffrn (d1) 0.053 0.002 27.843 0.000 0.053 0.324

ImprtncDf (d2) 0.002 0.001 2.812 0.005 0.002 0.026

VAR (d4) 0.127 0.079 1.609 0.108 0.127 0.014

league (d6) -0.004 0.010 -0.435 0.664 -0.004 -0.004

Variances:

Estimate Std.Err z-value P(>|z|) Std.lv Std.all

.Refereebias 6.266 0.433 14.470 0.000 0.890 0.890

.FoulDifference 21.131 0.532 39.748 0.000 21.131 0.750

.YellwCrdDffrnc 1.738 0.090 19.250 0.000 1.738 0.563

.PointsDiffernc 5.552 0.059 93.413 0.000 5.552 0.858

R-Square:

Estimate

Refereebias 0.110

FoulDifference 0.250

YellwCrdDffrnc 0.437

PointsDiffernc 0.142

Defined Parameters:

Estimate Std.Err z-value P(>|z|) Std.lv Std.all

Direct -0.269 0.057 -4.703 0.000 -0.269 -0.051

indirect -0.023 0.011 -2.146 0.032 -0.023 -0.004

mdrtdmdtnffctc 0.001 0.004 0.259 0.796 0.001 0.000

mdrtdffctccpnc -0.199 0.068 -2.908 0.004 -0.199 -0.050

totlffctccpncy -0.198 0.068 -2.900 0.004 -0.198 -0.050

mdrtdmdtnffctt -0.002 0.004 -0.568 0.570 -0.002 -0.001

mdrtdffctttndn 0.041 0.067 0.616 0.538 0.041 0.010

totlffctttndnc 0.039 0.067 0.583 0.560 0.039 0.009

mdrtdmdtnffctf -0.001 0.003 -0.413 0.680 -0.001 -0.000

mdrtdffctfrgnr -0.008 0.055 -0.148 0.882 -0.008 -0.002

ttlffctfrgnrss -0.010 0.055 -0.174 0.862 -0.010 -0.002

moderatdffctAg -0.077 0.055 -1.398 0.162 -0.077 -0.018

total -0.292 0.056 -5.219 0.000 -0.292 -0.055

confounderRtng 0.053 0.002 27.840 0.000 0.020 0.310

confndrImprtnc 0.002 0.001 2.812 0.005 0.001 0.025

confounderShts 0.008 0.006 1.239 0.215 0.003 0.019

counfounderVar 0.127 0.079 1.609 0.108 0.048 0.013

confounderleag -0.004 0.010 -0.435 0.664 -0.002 -0.004