**SEM Model Outputs**

**Source Model – OA**

lavaan (0.6-1) converged normally after 40 iterations

Number of observations 44

Estimator ML

Model Fit Test Statistic 33.133

Degrees of freedom 25

P-value (Chi-square) 0.128

Model test baseline model:

Minimum Function Test Statistic 226.918

Degrees of freedom 36

P-value 0.000

User model versus baseline model:

Comparative Fit Index (CFI) 0.975

Tucker-Lewis Index (TLI) 0.949

Loglikelihood and Information Criteria:

Loglikelihood user model (H0) -363.551

Loglikelihood unrestricted model (H1) -346.985

Number of free parameters 20

Akaike (AIC) 767.103

Bayesian (BIC) 802.786

Sample-size adjusted Bayesian (BIC) 740.114

Root Mean Square Error of Approximation:

RMSEA 0.066

90 Percent Confidence Interval 0.000 0.141

P-value RMSEA <= 0.05 0.229

Standardized Root Mean Square Residual:

SRMR 0.090

Parameter Estimates:

Information Expected

Information saturated (h1) model Structured

Standard Errors Standard

Latent Variables:

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

WM =~

DTI17 1.000 0.396 0.530

DTI7 1.289 0.387 3.327 0.001 0.510 0.962

DTI21 0.721 0.225 3.199 0.001 0.285 0.640

DTI9 1.246 0.422 2.953 0.003 0.493 0.565

SRC =~

SRC17 1.000 0.643 0.769

SRC7 1.342 0.189 7.095 0.000 0.863 0.959

SRC21 1.307 0.213 6.138 0.000 0.840 0.844

SRC9 1.290 0.197 6.536 0.000 0.829 0.887

Regressions:

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

Src ~

WM 0.490 0.196 2.665 0.008 0.178 0.515

SRC 0.237 0.218 1.993 0.047 0.146 0.157

Covariances:

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

WM ~~

SRC 0.418 0.049 -2.133 0.033 0.418 0.503

.DTI7 ~~

.SRC7 -0.020 0.022 -0.924 0.356 -0.020 -0.680

.DTI9 ~~

.SRC9 0.016 0.054 0.298 0.765 0.016 0.052

.DTI17 ~~

.SRC17 0.018 0.053 0.342 0.732 0.018 0.054

.DTI21 ~~

.SRC21 -0.013 0.031 -0.421 0.674 -0.013 -0.071

R-Square:

Estimate

DTI17 0.281

DTI7 0.926

DTI21 0.410

DTI9 0.319

SRC17 0.591

SRC7 0.919

SRC21 0.712

SRC9 0.787

Src 0.065

**Source Model – YA**

lavaan (0.5-23.1097) converged normally after 45 iterations

Number of observations 18

Estimator ML

Minimum Function Test Statistic 48.272

Degrees of freedom 25

P-value (Chi-square) 0.003

Model test baseline model:

Minimum Function Test Statistic 145.007

Degrees of freedom 36

P-value 0.000

User model versus baseline model:

Comparative Fit Index (CFI) 0.787

Tucker-Lewis Index (TLI) 0.693

Loglikelihood and Information Criteria:

Loglikelihood user model (H0) -133.000

Loglikelihood unrestricted model (H1) -108.864

Number of free parameters 20

Akaike (AIC) 306.000

Bayesian (BIC) 323.808

Sample-size adjusted Bayesian (BIC) 262.354

Root Mean Square Error of Approximation:

RMSEA 0.227

90 Percent Confidence Interval 0.128 0.323

P-value RMSEA <= 0.05 0.006

Standardized Root Mean Square Residual:

SRMR 0.135

Parameter Estimates:

Information Expected

Standard Errors Standard

Latent Variables:

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

WM =~

DTI17 1.000 0.527 0.809

DTI7 0.584 0.231 2.528 0.011 0.307 0.687

DTI21 0.209 0.204 1.021 0.307 0.110 0.268

DTI9 1.524 0.581 2.624 0.009 0.802 0.746

SRC =~

SRC17 1.000 0.929 0.917

SRC7 0.823 0.135 6.083 0.000 0.765 0.877

SRC21 0.959 0.104 9.243 0.000 0.891 1.004

SRC9 0.832 0.174 4.774 0.000 0.773 0.789

Regressions:

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

Src ~

WM 0.218 0.343 0.636 0.525 0.115 0.168

SRC -0.115 0.172 -0.670 0.503 -0.107 -0.157

Covariances:

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

WM ~~

SRC 0.071 0.130 0.546 0.585 0.145 0.145

.DTI7 ~~

.SRC7 -0.007 0.030 -0.244 0.807 -0.007 -0.042

.DTI9 ~~

.SRC9 -0.135 0.126 -1.073 0.283 -0.135 -0.201

.DTI17 ~~

.SRC17 -0.116 0.044 -2.609 0.009 -0.116 -0.098

.DTI21 ~~

.SRC21 -0.040 0.025 -1.582 0.114 -0.040 -0.933

R-Square:

Estimate

DTI17 0.654

DTI7 0.472

DTI21 0.072

DTI9 0.557

SRC17 0.840

SRC7 0.769

SRC21 NA

SRC9 0.622

Src 0.045

**Item Model – OA**

lavaan (0.5-23.1097) converged normally after 41 iterations

Number of observations 44

Estimator ML

Minimum Function Test Statistic 30.965

Degrees of freedom 25

P-value (Chi-square) 0.190

Model test baseline model:

Minimum Function Test Statistic 373.046

Degrees of freedom 36

P-value 0.000

User model versus baseline model:

Comparative Fit Index (CFI) 0.982

Tucker-Lewis Index (TLI) 0.975

Loglikelihood and Information Criteria:

Loglikelihood user model (H0) -335.931

Loglikelihood unrestricted model (H1) -320.448

Number of free parameters 29

Akaike (AIC) 729.861

Bayesian (BIC) 781.603

Sample-size adjusted Bayesian (BIC) 690.728

Root Mean Square Error of Approximation:

RMSEA 0.074

90 Percent Confidence Interval 0.000 0.149

P-value RMSEA <= 0.05 0.312

Standardized Root Mean Square Residual:

SRMR 0.050

Parameter Estimates:

Information Expected

Standard Errors Standard

Latent Variables:

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

WM =~

DTI5 1.000 0.754 0.802

DTI11 1.055 0.138 7.657 0.000 0.795 0.933

DTI15 1.159 0.147 7.883 0.000 0.874 0.954

DTI17 0.851 0.126 6.778 0.000 0.642 0.860

ITM =~

ITM5 1.000 0.780 0.870

ITM11 1.080 0.111 9.768 0.000 0.842 0.955

ITM15 0.996 0.108 9.257 0.000 0.777 0.930

ITM17 0.925 0.123 7.510 0.000 0.721 0.841

Regressions:

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

Item ~

WM 0.189 0.193 2.056 0.042 0.302 0.324

ITM 0.251 0.188 1.338 0.181 0.196 0.212

Covariances:

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

WM ~~

ITM 0.171 0.099 2.013 0.043 0.291 0.291

.DTI5 ~~

.ITM5 0.040 0.052 0.758 0.448 0.040 0.116

.DTI11 ~~

.ITM11 0.006 0.012 0.519 0.604 0.006 0.540

.DTI15 ~~

.ITM15 -0.011 0.016 -0.674 0.500 -0.011 -0.142

.DTI17 ~~

.ITM17 0.027 0.032 0.847 0.397 0.027 0.130

Intercepts:

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

.DTI5 -0.016 0.142 -0.116 0.907 -0.016 -0.018

.DTI11 -0.241 0.128 -1.879 0.060 -0.241 -0.283

.DTI15 0.083 0.138 0.597 0.551 0.083 0.090

.DTI17 -0.370 0.112 -3.291 0.001 -0.370 -0.496

.ITM5 -0.272 0.135 -2.015 0.044 -0.272 -0.304

.ITM11 -0.252 0.133 -1.899 0.058 -0.252 -0.286

.ITM15 -0.236 0.126 -1.873 0.061 -0.236 -0.282

.ITM17 -0.171 0.129 -1.321 0.186 -0.171 -0.199

.Item -0.263 0.140 -1.883 0.060 -0.263 -0.284

WM 0.000 0.000 0.000

ITM 0.000 0.000 0.000

R-Square:

Estimate

DTI5 0.644

DTI11 0.871

DTI15 0.909

DTI17 0.740

ITM5 0.757

ITM11 0.912

ITM15 0.865

ITM17 0.707

Item 0.055

**Item Model – YA**

lavaan (0.5-23.1097) converged normally after 65 iterations

Number of observations 18

Estimator ML

Minimum Function Test Statistic 44.718

Degrees of freedom 25

P-value (Chi-square) 0.009

Model test baseline model:

Minimum Function Test Statistic 219.875

Degrees of freedom 36

P-value 0.000

User model versus baseline model:

Comparative Fit Index (CFI) 0.893

Tucker-Lewis Index (TLI) 0.846

Loglikelihood and Information Criteria:

Loglikelihood user model (H0) -96.236

Loglikelihood unrestricted model (H1) -73.877

Number of free parameters 20

Akaike (AIC) 232.472

Bayesian (BIC) 250.279

Sample-size adjusted Bayesian (BIC) 188.826

Root Mean Square Error of Approximation:

RMSEA 0.209

90 Percent Confidence Interval 0.104 0.307

P-value RMSEA <= 0.05 0.015

Standardized Root Mean Square Residual:

SRMR 0.080

Parameter Estimates:

Information Expected

Standard Errors Standard

Latent Variables:

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

WM =~

DTI5 1.000 0.326 0.729

DTI11 2.817 0.650 4.331 0.000 0.919 0.978

DTI15 2.802 0.652 4.299 0.000 0.914 0.970

DTI17 1.695 0.456 3.721 0.000 0.553 0.849

ITM =~

ITM5 1.000 0.581 0.889

ITM11 1.459 0.205 7.126 0.000 0.847 0.956

ITM15 1.576 0.190 8.279 0.000 0.915 1.008

ITM17 1.127 0.247 4.573 0.000 0.654 0.788

Regressions:

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

Item ~

WM 0.239 0.473 0.505 0.614 0.078 0.113

ITM -0.432 0.264 -1.636 0.102 -0.251 -0.364

Covariances:

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

WM ~~

ITM -0.080 0.047 -1.359 0.174 -0.209 -0.209

.DTI5 ~~

.ITM5 0.038 0.040 0.944 0.345 0.038 0.239

.DTI11 ~~

.ITM11 0.022 0.016 1.332 0.183 0.022 1.302

.DTI15 ~~

.ITM15 -0.037 0.020 -1.820 0.069 -0.037 -0.690

.DTI17 ~~

.ITM17 -0.058 0.037 -1.548 0.122 -0.058 -0.400

R-Square:

Estimate

DTI5 0.532

DTI11 0.957

DTI15 0.940

DTI17 0.721

ITM5 0.790

ITM11 0.914

ITM15 NA

ITM17 0.621

Item 0.163