

SUPPLEMENT S3: Path-analysis (Lavaan Code)

```
modelPAQ8 <- "  
  #Regressions  
  APQ1 ~ a1 * NEG8 + a11 * POS8  
  APQ2 ~ a2 * NEG8 + a21 * POS8  
  APQ3 ~ a3 * NEG8 + a31 * POS8  
  APQ4 ~ a4 * NEG8 + a41 * POS8  
  APQ5 ~ a5 * NEG8 + a51 * POS8  
  APQ6 ~ a6 * NEG8 + a61 * POS8  
  APQ7.1 ~ a7 * NEG8 + a71 * POS8  
  
  #Covariances mediators  
  APQ1 ~~ APQ2  
  APQ1 ~~ APQ3  
  APQ1 ~~ APQ4  
  APQ1 ~~ APQ5  
  APQ1 ~~ APQ6  
  APQ1 ~~ APQ7.1  
  
  APQ2 ~~ APQ3  
  APQ2 ~~ APQ4  
  APQ2 ~~ APQ5  
  APQ2 ~~ APQ6  
  APQ2 ~~ APQ7.1  
  
  APQ3 ~~ APQ4  
  APQ3 ~~ APQ5  
  APQ3 ~~ APQ6  
  APQ3 ~~ APQ7.1  
  
  APQ4 ~~ APQ5
```

APQ4 ~~ APQ6

APQ4 ~~ APQ7.1

APQ5 ~~ APQ6

APQ5 ~~ APQ7.1

APQ6 ~~ APQ7.1

#Outcome variables

QOL ~ cp * NEG8 + cp1 * POS8 + c(b1) * APQ1 + c(b2) * APQ2 + c(b3) * APQ3 + c(b4) * APQ4 + c(b5) * APQ5 + c(b6) * APQ6 + c(b7) * APQ7.1

MWB ~ cp2 * NEG8 + cp21 * POS8 + c(c1) * APQ1 + c(c2) * APQ2 + c(c3) * APQ3 + c(c4) * APQ4 + c(c5) * APQ5 + c(c6) * APQ6 + c(c7) * APQ7.1

DEP ~ cp3 * NEG8 + cp31 * POS8 + c(d1) * APQ1 + c(d2) * APQ2 + c(d3) * APQ3 + c(d4) * APQ4 + c(d5) * APQ5 + c(d6) * APQ6 + c(d7) * APQ7.1

ANX ~ cp4 * NEG8 + cp41 * POS8 + c(e1) * APQ1 + c(e2) * APQ2 + c(e3) * APQ3 + c(e4) * APQ4 + c(e5) * APQ5 + c(e6) * APQ6 + c(e7) * APQ7.1

LS ~ cp5 * NEG8 + cp51 * POS8 + c(f1) * APQ1 + c(f2) * APQ2 + c(f3) * APQ3 + c(f4) * APQ4 + c(f5) * APQ5 + c(f6) * APQ6 + c(f7) * APQ7.1

PSS ~ cp6 * NEG8 + cp61 * POS8 + c(g1) * APQ1 + c(g2) * APQ2 + c(g3) * APQ3 + c(g4) * APQ4 + c(g5) * APQ5 + c(g6) * APQ6 + c(g7) * APQ7.1

#Defined effects:

total_indirect_NEG_APQ_QoL := a1 * b1 + a2 * b2 + a3 * b3 + a4 * b4 + a5 * b5 + a6 * b6 + a7 * b7

total_indirect_NEG_APQ_MWB := a1 * c1 + a2 * c2 + a3 * c3 + a4 * c4 + a5 * c5 + a6 * c6 + a7 * c7

total_indirect_NEG_APQ_DEP := a1 * d1 + a2 * d2 + a3 * d3 + a4 * d4 + a5 * d5 + a6 * d6 + a7 * d7

total_indirect_NEG_APQ_ANX := a1 * e1 + a2 * e2 + a3 * e3 + a4 * e4 + a5 * e5 + a6 * e6 + a7 * e7

total_indirect_NEG_APQ_LS := a1 * f1 + a2 * f2 + a3 * f3 + a4 * f4 + a5 * f5 + a6 * f6 + a7 * f7

total_indirect_NEG_APQ_PSS := a1 * g1 + a2 * g2 + a3 * g3 + a4 * g4 + a5 * g5 + a6 * g6 + a7 * g7

```
total_indirect_POS_APQ_QoL := a11 * b1 + a21 * b2 + a31 * b3 + a41 * b4 +
a51 * b5 + a61 * b6 + a71 * b7
```

```
total_indirect_POS_APQ_MWB := a11 * c1 + a21 * c2 + a31 * c3 + a41 * c4 +
a51 * c5 + a61 * c6 + a71 * c7
```

```
total_indirect_POS_APQ_DEP := a11 * d1 + a21 * d2 + a31 * d3 + a41 * d4 +
a51 * d5 + a61 * d6 + a71 * d7
```

```
total_indirect_POS_APQ_ANX := a11 * e1 + a21 * e2 + a31 * e3 + a41 * e4 +
a51 * e5 + a61 * e6 + a71 * e7
```

```
total_indirect_POS_APQ_LS := a11 * f1 + a21 * f2 + a31 * f3 + a41 * f4 +
a51 * f5 + a61 * f6 + a71 * f7
```

```
total_indirect_POS_APQ_PSS := a11 * g1 + a21 * g2 + a31 * g3 + a41 * g4 +
a51 * g5 + a61 * g6 + a71 * g7
```

```
"
```

```
fit <- lavaan::sem(model = modelPAQ8,data = DATA_PAQ_OUT2, se = "boot",
bootstrap = 5000)
```

```
summary(fit, ci = TRUE)
```

```
save(fit, file = "fit_Output_path_analysis_revision.Rdata")
```

```
> summary(fit, ci = TRUE)
```

lavaan 0.6-11 ended normally after 214 iterations

Estimator	ML
Optimization method	NLMINB
Number of model parameters	117
Number of observations	500

Model Test User Model:

Test statistic	0.000
Degrees of freedom	0

Parameter Estimates:

Standard errors	Bootstrap
Number of requested bootstrap draws	5000
Number of successful bootstrap draws	5000

Regressions:

		Estimate	Std.Err	z-value	P(> z)	ci.lower	ci.upper
APQ1 ~							
NEG8	(a1)	0.139	0.040	3.490	0.000	0.059	0.219
POS8	(a11)	0.030	0.046	0.647	0.518	-0.058	0.122
APQ2 ~							
NEG8	(a2)	0.304	0.041	7.477	0.000	0.223	0.380
POS8	(a21)	-0.154	0.043	-3.537	0.000	-0.238	-0.067
APQ3 ~							
NEG8	(a3)	-0.065	0.029	-2.208	0.027	-0.123	-0.008
POS8	(a31)	0.169	0.037	4.592	0.000	0.095	0.238
APQ4 ~							
NEG8	(a4)	0.240	0.043	5.621	0.000	0.156	0.321
POS8	(a41)	-0.098	0.049	-1.999	0.046	-0.191	0.001
APQ5 ~							
NEG8	(a5)	0.256	0.037	6.977	0.000	0.182	0.326
POS8	(a51)	-0.114	0.034	-3.341	0.001	-0.182	-0.047
APQ6 ~							
NEG8	(a6)	-0.062	0.029	-2.123	0.034	-0.120	-0.005
POS8	(a61)	0.103	0.035	2.947	0.003	0.032	0.171
APQ7.1 ~							
NEG8	(a7)	0.118	0.036	3.280	0.001	0.049	0.191
POS8	(a71)	-0.064	0.037	-1.704	0.088	-0.136	0.010
QOL ~							
NEG8	(cp)	-0.678	0.135	-5.037	0.000	-0.952	-0.422

POS8	(cp1)	0.299	0.153	1.954	0.051	-0.006	0.591
APQ1	(b1)	0.036	0.159	0.228	0.820	-0.274	0.349
APQ2	(b2)	-0.817	0.201	-4.060	0.000	-1.210	-0.421
APQ3	(b3)	0.453	0.239	1.897	0.058	-0.003	0.922
APQ4	(b4)	-0.722	0.188	-3.842	0.000	-1.093	-0.353
APQ5	(b5)	-0.810	0.244	-3.320	0.001	-1.299	-0.327
APQ6	(b6)	0.932	0.239	3.895	0.000	0.457	1.388
APQ7.1	(b7)	-0.025	0.179	-0.140	0.889	-0.372	0.335
MWB ~							
NEG8	(cp2)	-0.200	0.104	-1.926	0.054	-0.402	0.007
POS8	(cp21)	0.479	0.106	4.523	0.000	0.268	0.685
APQ1	(c1)	0.333	0.111	2.995	0.003	0.119	0.558
APQ2	(c2)	-0.645	0.145	-4.451	0.000	-0.938	-0.366
APQ3	(c3)	0.429	0.161	2.661	0.008	0.124	0.749
APQ4	(c4)	-0.118	0.134	-0.877	0.381	-0.381	0.140
APQ5	(c5)	-0.221	0.159	-1.392	0.164	-0.539	0.089
APQ6	(c6)	0.368	0.150	2.445	0.014	0.072	0.657
APQ7.1	(c7)	-0.219	0.133	-1.650	0.099	-0.485	0.040
DEP ~							
NEG8	(cp3)	0.309	0.087	3.572	0.000	0.143	0.479
POS8	(cp31)	-0.313	0.083	-3.778	0.000	-0.473	-0.146
APQ1	(d1)	-0.066	0.087	-0.753	0.452	-0.235	0.105
APQ2	(d2)	0.492	0.108	4.564	0.000	0.287	0.713
APQ3	(d3)	0.081	0.110	0.740	0.459	-0.133	0.295
APQ4	(d4)	0.137	0.102	1.347	0.178	-0.060	0.340
APQ5	(d5)	0.314	0.120	2.605	0.009	0.071	0.548
APQ6	(d6)	-0.190	0.104	-1.834	0.067	-0.390	0.014
APQ7.1	(d7)	-0.057	0.104	-0.548	0.584	-0.262	0.149
ANX ~							
NEG8	(cp4)	0.236	0.068	3.459	0.001	0.105	0.374
POS8	(cp41)	-0.190	0.061	-3.126	0.002	-0.310	-0.071
APQ1	(e1)	-0.009	0.063	-0.140	0.888	-0.135	0.113

APQ2	(e2)	0.322	0.080	4.017	0.000	0.168	0.482
APQ3	(e3)	0.083	0.076	1.098	0.272	-0.067	0.233
APQ4	(e4)	-0.050	0.076	-0.658	0.510	-0.199	0.096
APQ5	(e5)	0.351	0.095	3.701	0.000	0.161	0.540
APQ6	(e6)	-0.110	0.078	-1.412	0.158	-0.263	0.040
APQ7.1	(e7)	-0.161	0.080	-2.008	0.045	-0.323	-0.003
LS ~							
NEG8	(cp5)	0.152	0.052	2.919	0.004	0.053	0.257
POS8	(cp51)	-0.209	0.057	-3.692	0.000	-0.319	-0.099
APQ1	(f1)	-0.079	0.059	-1.352	0.176	-0.191	0.038
APQ2	(f2)	0.106	0.072	1.468	0.142	-0.035	0.246
APQ3	(f3)	-0.039	0.085	-0.459	0.646	-0.203	0.136
APQ4	(f4)	0.082	0.068	1.195	0.232	-0.055	0.218
APQ5	(f5)	0.253	0.095	2.665	0.008	0.066	0.444
APQ6	(f6)	-0.066	0.089	-0.740	0.459	-0.241	0.111
APQ7.1	(f7)	0.020	0.073	0.280	0.779	-0.123	0.163
PSS ~							
NEG8	(cp6)	0.365	0.097	3.749	0.000	0.176	0.560
POS8	(cp61)	-0.067	0.099	-0.676	0.499	-0.260	0.131
APQ1	(g1)	-0.000	0.098	-0.005	0.996	-0.195	0.196
APQ2	(g2)	0.543	0.121	4.477	0.000	0.311	0.785
APQ3	(g3)	-0.034	0.138	-0.245	0.807	-0.309	0.239
APQ4	(g4)	-0.066	0.114	-0.576	0.565	-0.287	0.165
APQ5	(g5)	0.456	0.136	3.359	0.001	0.180	0.720
APQ6	(g6)	-0.315	0.130	-2.419	0.016	-0.565	-0.062
APQ7.1	(g7)	-0.191	0.122	-1.570	0.116	-0.427	0.049

Covariances:

	Estimate	Std.Err	z-value	P(> z)	ci.lower	ci.upper
.APQ1 ~~						
.APQ2	2.122	0.266	7.968	0.000	1.598	2.649
.APQ3	-0.568	0.215	-2.635	0.008	-0.995	-0.147

.APQ4	2.100	0.275	7.651	0.000	1.557	2.626
.APQ5	1.047	0.208	5.036	0.000	0.627	1.449
.APQ6	-0.397	0.186	-2.135	0.033	-0.765	-0.026
.APQ7.1	0.959	0.202	4.741	0.000	0.555	1.348
.APQ2 ~~						
.APQ3	-0.705	0.183	-3.846	0.000	-1.072	-0.346
.APQ4	2.736	0.245	11.168	0.000	2.240	3.204
.APQ5	2.148	0.193	11.135	0.000	1.763	2.522
.APQ6	-0.548	0.184	-2.979	0.003	-0.904	-0.186
.APQ7.1	0.924	0.210	4.398	0.000	0.508	1.332
.APQ3 ~~						
.APQ4	-0.919	0.195	-4.712	0.000	-1.295	-0.531
.APQ5	-0.724	0.154	-4.703	0.000	-1.022	-0.418
.APQ6	0.559	0.135	4.128	0.000	0.290	0.822
.APQ7.1	-0.631	0.153	-4.120	0.000	-0.923	-0.323
.APQ4 ~~						
.APQ5	1.447	0.207	7.001	0.000	1.038	1.840
.APQ6	-1.092	0.194	-5.618	0.000	-1.465	-0.712
.APQ7.1	1.652	0.240	6.897	0.000	1.173	2.128
.APQ5 ~~						
.APQ6	-0.874	0.162	-5.403	0.000	-1.194	-0.556
.APQ7.1	0.971	0.168	5.779	0.000	0.640	1.298
.APQ6 ~~						
.APQ7.1	-0.981	0.156	-6.279	0.000	-1.276	-0.678
.QOL ~~						
.MWB	16.356	1.875	8.721	0.000	12.372	19.754
.DEP	-10.975	1.355	-8.099	0.000	-13.413	-8.096
.ANX	-5.129	0.958	-5.354	0.000	-6.928	-3.185
.LS	-8.823	0.997	-8.850	0.000	-10.658	-6.665
.PSS	-8.992	1.518	-5.924	0.000	-11.755	-5.790
.MWB ~~						
.DEP	-9.342	1.063	-8.790	0.000	-11.314	-7.140

.ANX	-4.907	0.706	-6.954	0.000	-6.169	-3.442
.LS	-4.235	0.694	-6.101	0.000	-5.527	-2.773
.PSS	-9.090	1.092	-8.326	0.000	-11.056	-6.824
.DEP ~~						
.ANX	5.812	0.664	8.757	0.000	4.406	6.995
.LS	3.013	0.524	5.745	0.000	1.918	4.000
.PSS	7.738	0.892	8.676	0.000	5.865	9.321
.ANX ~~						
.LS	0.921	0.362	2.548	0.011	0.212	1.629
.PSS	7.202	0.802	8.981	0.000	5.523	8.683
.LS ~~						
.PSS	1.702	0.559	3.044	0.002	0.557	2.765

Variances:

	Estimate	Std.Err	z-value	P(> z)	ci.lower	ci.upper
.APQ1	5.625	0.318	17.689	0.000	4.956	6.211
.APQ2	5.071	0.284	17.834	0.000	4.490	5.618
.APQ3	3.145	0.256	12.279	0.000	2.650	3.660
.APQ4	5.388	0.316	17.055	0.000	4.739	5.979
.APQ5	3.325	0.226	14.695	0.000	2.879	3.758
.APQ6	2.775	0.197	14.117	0.000	2.387	3.145
.APQ7.1	3.574	0.212	16.827	0.000	3.148	3.985
.QOL	48.291	3.163	15.270	0.000	41.048	53.399
.MWB	24.858	1.802	13.796	0.000	21.006	27.989
.DEP	14.866	1.222	12.165	0.000	12.220	17.034
.ANX	7.975	0.619	12.874	0.000	6.609	9.035
.LS	7.545	0.508	14.861	0.000	6.394	8.401
.PSS	21.539	1.587	13.568	0.000	18.095	24.361

Defined Parameters:

	Estimate	Std.Err	z-value	P(> z)	ci.lower	ci.upper
tt__NEG_APQ_QL	-0.714	0.103	-6.939	0.000	-0.920	-0.513

t__NEG_APQ_MWB	-0.311	0.056	-5.577	0.000	-0.424	-0.205
t__NEG_APQ_DEP	0.253	0.047	5.421	0.000	0.167	0.348
t__NEG_APQ_ANX	0.157	0.031	4.983	0.000	0.096	0.220
tt__NEG_APQ_LS	0.114	0.025	4.540	0.000	0.067	0.166
t__NEG_APQ_PSS	0.265	0.050	5.323	0.000	0.169	0.364
tt__POS_APQ_QL	0.463	0.114	4.048	0.000	0.236	0.687
t__POS_APQ_MWB	0.270	0.059	4.569	0.000	0.160	0.392
t__POS_APQ_DEP	-0.129	0.041	-3.184	0.001	-0.211	-0.052
t__POS_APQ_ANX	-0.072	0.028	-2.614	0.009	-0.129	-0.021
tt__POS_APQ_LS	-0.070	0.023	-2.986	0.003	-0.118	-0.026
t__POS_APQ_PSS	-0.155	0.047	-3.264	0.001	-0.257	-0.067