

Supplementary materials: detailed results

Character strengths, well-being, and ill-being

Table of contents

1	Descriptive statistics	2
2	Detailed number of effects for specific outcomes	3
3	Detailed results healthy functioning	4
4	Detailed results on mental health vs well-being moderator analysis	6
5	Detailed results on short vs long VIA formats (MH)	8
6	Detailed results on short vs long VIA formats (WB)	10
7	Detailed results on specific well-being outcomes	11
8	Detailed results on specific mental health outcome	12
9	Clinical and non-clinical samples	13
9.1	Well-being - Detailed results on clinical vs non-clinical population	15
9.2	Mental health - Detailed results on clinical vs non-clinical populations	17
10	Robustness checks	18
10.1	Well-being	18
10.2	Mental health	26

1 Descriptive statistics

Table S 1: Descriptive statistics. The number of unique samples is reported in parenthesis.

	N	N range	k	Samples	Studies	VIA short	VIA long	VIA other	Wellbeing	Mental health	Clinical samples
Appreciation_of_beauty	193916	[32; 56998]	206	112	92	97 (43)	109 (71)	0 (0)	169 (103)	37 (27)	12 (8)
Bravery	194235	[26; 56998]	201	113	93	97 (43)	102 (70)	2 (2)	165 (104)	36 (26)	8 (6)
Creativity	196142	[32; 56998]	207	115	95	104 (46)	103 (71)	0 (0)	167 (104)	40 (28)	10 (7)
Curiosity	196450	[32; 56998]	211	115	96	104 (46)	107 (71)	0 (0)	174 (105)	37 (27)	8 (6)
Fairness	193138	[32; 56998]	199	110	91	97 (43)	102 (69)	0 (0)	165 (103)	34 (24)	8 (6)
Forgiveness	196010	[32; 56998]	216	119	98	102 (45)	114 (76)	0 (0)	174 (106)	42 (32)	15 (9)
Gratitude	212430	[26; 56998]	231	125	104	110 (49)	119 (76)	2 (2)	189 (115)	42 (31)	13 (9)
Honesty	194199	[32; 56998]	199	111	92	97 (43)	102 (70)	0 (0)	163 (102)	36 (26)	8 (6)
Hope	238842	[32; 56998]	224	121	101	108 (47)	116 (76)	0 (0)	183 (110)	41 (30)	14 (9)
Humility	237322	[32; 56998]	204	112	93	101 (44)	103 (70)	0 (0)	169 (104)	35 (25)	12 (7)
Humor	238185	[32; 56998]	221	118	97	101 (44)	120 (76)	0 (0)	184 (109)	37 (27)	17 (10)
Judgment	195537	[32; 56998]	201	112	93	97 (43)	104 (71)	0 (0)	163 (102)	38 (28)	10 (7)
Kindness	197301	[32; 56998]	209	117	98	103 (46)	104 (71)	2 (2)	173 (108)	36 (26)	12 (7)
Leadership	194570	[32; 56998]	202	111	92	102 (45)	100 (68)	0 (0)	167 (103)	35 (25)	12 (7)
Love_of_learning	196136	[26; 56998]	208	115	95	99 (44)	107 (71)	2 (2)	171 (105)	37 (27)	8 (6)
Love	194942	[26; 56998]	212	116	96	107 (46)	103 (70)	2 (2)	177 (108)	35 (25)	14 (8)
Perseverance	194361	[32; 56998]	203	112	93	98 (44)	105 (70)	0 (0)	166 (103)	37 (26)	11 (7)
Perspective	195402	[32; 56998]	202	112	93	97 (43)	105 (71)	0 (0)	165 (102)	37 (27)	11 (7)
Prudence	193610	[32; 56998]	197	109	90	97 (43)	100 (68)	0 (0)	162 (101)	35 (25)	8 (6)
Self_regulation	193949	[26; 56998]	205	113	93	97 (43)	106 (70)	2 (2)	168 (105)	37 (26)	11 (7)
Social_intelligence	196471	[32; 56998]	213	116	96	106 (47)	107 (71)	0 (0)	176 (108)	37 (27)	16 (9)
Spirituality	194116	[32; 56998]	208	113	93	97 (43)	111 (72)	0 (0)	170 (104)	38 (28)	14 (9)
Teamwork	194873	[32; 56998]	203	112	93	102 (45)	101 (69)	0 (0)	168 (104)	35 (25)	12 (7)
Zest	204403	[32; 56998]	213	116	97	103 (45)	109 (72)	1 (1)	176 (107)	37 (27)	15 (9)
FullSample	275007	[26; 56998]	4995	154	130	2423 (56)	2559 (95)	13 (5)	4104 (135)	891 (42)	279 (13)

* k = effect sizes; VIA = Values In Action inventory form

2 Detailed number of effects for specific outcomes

Table S 2: Effects (k) for each specific outcome

	Anxiety	Depression	Domain satisfaction	General mental health	Happiness	Life satisfaction	Negative affect	Positive affect	Psychological well-being	Stress	Subjective well-being
Appreciation of beauty	7	20	17	5	11	60	21	23	28	5	4
Bravery	7	18	17	5	11	58	19	21	30	5	4
Creativity	8	19	20	5	11	60	19	21	27	8	4
Curiosity	7	18	17	5	11	61	21	23	31	7	4
Fairness	7	17	17	5	11	60	19	20	29	5	4
Forgiveness	7	23	18	6	12	61	21	23	30	5	4
Gratitude	8	23	17	6	12	64	22	25	39	5	4
Honesty	7	18	17	5	11	58	19	21	28	5	4
Hope	8	22	17	5	12	63	22	25	34	5	4
Humility	7	18	17	5	11	60	21	23	28	5	4
Humor	7	20	17	5	11	65	24	26	32	5	4
Judgment	7	19	17	5	12	58	19	21	27	7	4
Kindness	7	18	17	5	11	61	20	22	32	5	4
Leadership	7	18	17	5	11	60	20	22	28	5	4
Love of learning	7	18	17	5	11	59	20	22	32	7	4
Love	7	18	17	5	11	62	21	24	33	5	4
Perseverance	8	19	17	5	11	60	20	22	27	5	4
Perspective	7	18	17	5	11	59	20	22	27	7	4
Prudence	7	18	17	5	11	58	19	21	27	5	4
Self regulation	7	19	17	5	11	59	20	22	30	5	4
Social intelligence	7	19	19	6	12	63	21	23	29	5	4
Spirituality	7	21	17	5	12	60	21	23	28	5	4
Teamwork	7	18	18	5	11	60	20	22	28	5	4
Zest	7	20	18	5	12	63	21	24	29	5	4

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3 Detailed results healthy functioning

Table S 3: Meta-analytical associations between character strengths and mental health and well-being

Strength	N	k	r	se	CI_95	PI_95	tau2	I2	Q
Appreciation of beauty	297,966	206	0.162*	0.013	[0.137; 0.186]	[-0.061; 0.369]	0.013	93	2317*
Bravery	297,163	201	0.253*	0.016	[0.224; 0.281]	[-0.019; 0.490]	0.020	95	3316*
Creativity	300,171	207	0.202*	0.013	[0.179; 0.226]	[-0.016; 0.402]	0.012	93	3921*
Curiosity	302,278	211	0.362*	0.016	[0.334; 0.389]	[0.086; 0.586]	0.022	95	4697*
Fairness	296,350	199	0.205*	0.012	[0.181; 0.228]	[-0.003; 0.395]	0.011	92	1390*
Forgiveness	302,471	216	0.240*	0.010	[0.222; 0.258]	[0.075; 0.392]	0.007	87	1143*
Gratitude	321,558	231	0.412*	0.015	[0.388; 0.437]	[0.156; 0.617]	0.020	95	5746*
Honesty	297,101	199	0.263*	0.014	[0.236; 0.289]	[0.015; 0.480]	0.016	94	2396*
Hope	344,632	224	0.522*	0.021	[0.491; 0.552]	[0.161; 0.760]	0.044	98	7787*
Humility	342,132	204	0.072*	0.010	[0.051; 0.092]	[-0.106; 0.245]	0.008	89	1832*
Humor	346,424	221	0.264*	0.013	[0.241; 0.287]	[0.043; 0.461]	0.013	94	2930*
Judgment	298,639	201	0.201*	0.013	[0.176; 0.225]	[-0.023; 0.406]	0.013	93	2425*
Kindness	302,253	209	0.241*	0.015	[0.212; 0.269]	[-0.040; 0.486]	0.021	95	2492*
Leadership	299,212	202	0.270*	0.012	[0.248; 0.292]	[0.065; 0.453]	0.011	92	2488*
Love of learning	301,375	208	0.233*	0.014	[0.207; 0.258]	[-0.011; 0.451]	0.016	94	3584*
Love	300,315	212	0.418*	0.017	[0.390; 0.446]	[0.128; 0.643]	0.026	96	4597*
Perseverance	297,893	203	0.335*	0.013	[0.312; 0.358]	[0.120; 0.521]	0.013	93	3590*
Perspective	298,434	202	0.285*	0.015	[0.258; 0.312]	[0.030; 0.505]	0.018	94	3178*
Prudence	296,512	197	0.192*	0.014	[0.165; 0.218]	[-0.045; 0.408]	0.014	93	2192*
Self regulation	297,483	205	0.304*	0.013	[0.281; 0.326]	[0.095; 0.487]	0.012	91	3569*
Social intelligence	305,999	213	0.318*	0.014	[0.292; 0.344]	[0.069; 0.530]	0.017	94	2628*
Spirituality	298,366	208	0.216*	0.012	[0.193; 0.239]	[0.008; 0.406]	0.011	92	5315*
Teamwork	299,515	203	0.288*	0.013	[0.263; 0.312]	[0.063; 0.485]	0.014	93	1868*
Zest	318,143	213	0.517*	0.020	[0.488; 0.545]	[0.199; 0.737]	0.035	97	5774*

N = total sample size; k = number of effects;

r = back-transformed meta-analytic correlation coefficient; se = standard error;

* CI = confidence intervals; PI = predicted intervals;

tau2 = total variance (between + within); I2 = percentage of variance due to heterogeneity;

Q = Q statistic. See the shiny app for additional info

4 Detailed results on mental health vs well-being moderator analysis

Table S 4: Moderator analysis testing for differences between mental health (MH) and well-being (WB) outcomes

Strength	Outcome	r	N	k	delta r	se	z	tau2	I2	Q	QM	PET
Appreciation of beauty	MH	0.059 [0.028; 0.089]	30,000	37	0.124* [0.099; 0.149]	0.013	9.752	0.010	90	1934*	95*	0.456
	WB	0.182 [0.159; 0.204]	267,966	169								0.874
Bravery	MH	0.173 [0.138; 0.208]	29,977	36	0.100* [0.073; 0.127]	0.014	7.360	0.016	94	2830*	54*	0.446
	WB	0.269 [0.242; 0.295]	267,186	165								0.467
Creativity	MH	0.107 [0.077; 0.137]	32,425	40	0.120* [0.096; 0.144]	0.012	9.693	0.010	92	3628*	94*	0.206
	WB	0.224 [0.202; 0.247]	267,746	167								0.442
Curiosity	MH	0.254 [0.219; 0.288]	31,432	37	0.144* [0.118; 0.169]	0.013	10.864	0.020	95	4000*	118*	0.91
	WB	0.383 [0.357; 0.409]	270,846	174								0.281
Fairness	MH	0.140 [0.111; 0.169]	28,645	34	0.077* [0.052; 0.103]	0.013	5.955	0.008	89	1185*	35*	0.52
	WB	0.215 [0.196; 0.235]	267,705	165								0.533
Forgiveness	MH	0.206 [0.180; 0.231]	31,394	42	0.046* [0.022; 0.069]	0.012	3.785	0.007	87	1068*	14*	0.768
	WB	0.249 [0.232; 0.266]	271,077	174								0.315
Gratitude	MH	0.296 [0.264; 0.327]	31,727	42	0.159* [0.135; 0.183]	0.013	12.693	0.018	94	5241*	161*	0.966
	WB	0.435 [0.412; 0.457]	289,831	189								0.011
Honesty	MH	0.202 [0.169; 0.235]	29,977	36	0.077* [0.050; 0.103]	0.013	5.687	0.014	93	2236*	32*	0.745
	WB	0.275 [0.250; 0.300]	267,124	163								0.731
Hope	MH	0.459 [0.422; 0.495]	31,472	41	0.100* [0.074; 0.126]	0.013	7.557	0.041	98	7073*	57*	0.407
	WB	0.534 [0.504; 0.563]	313,160	183								0.115
Humility	MH	0.057 [0.027; 0.086]	29,705	35	0.018 [-0.008; 0.044]	0.013	1.380	0.008	89	1790*	2	0.875
	WB	0.075 [0.054; 0.095]	312,427	169								0.333
Humor	MH	0.195 [0.165; 0.225]	30,000	37	0.087* [0.062; 0.111]	0.013	6.918	0.011	92	2606*	48*	0.613
	WB	0.277 [0.255; 0.298]	316,424	184								0.878
Judgment	MH	0.162 [0.130; 0.193]	31,632	38	0.050* [0.025; 0.075]	0.013	3.876	0.012	92	2312*	15*	0.153
	WB	0.210 [0.185; 0.234]	267,007	163								0.667
Kindness	MH	0.137 [0.103; 0.171]	29,977	36	0.127* [0.101; 0.153]	0.014	9.392	0.015	93	1878*	88*	0.139
	WB	0.259 [0.234; 0.284]	272,276	173								0.313
Leadership	MH	0.187 [0.158; 0.217]	29,705	35	0.104* [0.078; 0.129]	0.013	7.910	0.009	90	2089*	63*	0.207
	WB	0.285 [0.265; 0.305]	269,507	167								0.285
Love of learning	MH	0.190 [0.157; 0.222]	31,432	37	0.055* [0.029; 0.081]	0.013	4.192	0.015	94	3502*	18*	0.432
	WB	0.242 [0.216; 0.267]	269,943	171								0.432
Love	MH	0.337 [0.301; 0.372]	29,705	35	0.112* [0.085; 0.139]	0.014	8.089	0.023	95	4387*	65*	0.691
	WB	0.432 [0.405; 0.459]	270,610	177								0.312
Perseverance	MH	0.274 [0.244; 0.304]	30,705	37	0.081* [0.056; 0.106]	0.013	6.323	0.012	93	3422*	40*	0.651
	WB	0.348 [0.325; 0.370]	267,188	166								0.597
Perspective	MH	0.200 [0.167; 0.232]	31,432	37	0.111* [0.085; 0.137]	0.013	8.409	0.013	93	2664*	71*	0.414
	WB	0.304 [0.280; 0.327]	267,002	165								0.405
Prudence	MH	0.180 [0.146; 0.214]	29,705	35	0.014 [-0.013; 0.041]	0.014	1.018	0.014	93	2190*	1	0.071
	WB	0.194 [0.167; 0.220]	266,807	162								0.318
Self regulation	MH	0.292 [0.261; 0.323]	30,181	37	0.015 [-0.012; 0.042]	0.014	1.094	0.012	91	3527*	1	0.614
	WB	0.306 [0.283; 0.329]	267,302	168								0.984
Social intelligence	MH	0.236 [0.204; 0.268]	31,312	37	0.105* [0.080; 0.130]	0.013	8.312	0.014	93	2298*	69*	0.322
	WB	0.333 [0.309; 0.357]	274,687	176								0.671
Spirituality	MH	0.135 [0.105; 0.165]	30,200	38	0.100* [0.076; 0.125]	0.013	8.030	0.011	91	4911*	64*	0.809
	WB	0.232 [0.210; 0.254]	268,166	170								0.022
Teamwork	MH	0.227 [0.196; 0.258]	29,705	35	0.076* [0.050; 0.103]	0.013	5.707	0.011	91	1642*	33*	0.103
	WB	0.298 [0.276; 0.321]	269,810	168								0.449
Zest	MH	0.430 [0.393; 0.466]	30,231	37	0.134* [0.107; 0.160]	0.014	9.860	0.034	97	5543*	97*	0.733
	WB	0.533 [0.505; 0.560]	287,912	176								0.046

N = total sample size; k = number of effects;
r = back-transformed meta-analytic correlation coefficient; se = standard error;
* CI = confidence intervals; PI = predicted intervals;
tau2 = total variance (between + within); I2 = percentage of variance due to heterogeneity;
Q = Q statistic; QM = Q test for the moderator analysis. See the shiny app for additional info;
PET = p value of the PET regression for publication bias.

5 Detailed results on short vs long VIA formats (MH)

Table S 5: Moderator analysis testing for differences between short and long VIA formats on MH outcomes

Strength	VIA	r	N	k	delta r	se	z	tau2	I2	Q	QM
Appreciation of beauty	Long	0.023 [-0.066; 0.112]	8,148	9	0.005 [-0.103; 0.113]	0.053	0.091	0.011	85	311*	0
	Short	0.028 [-0.033; 0.090]	21,852	28							
Bravery	Long	0.125 [0.010; 0.236]	8,125	8	0.011 [-0.128; 0.150]	0.069	0.157	0.021	91	400*	0
	Short	0.135 [0.056; 0.213]	21,852	28							
Creativity	Long	0.075 [0.003; 0.147]	9,580	9	0.068 [-0.021; 0.155]	0.044	1.540	0.009	84	421*	2
	Short	0.142 [0.091; 0.192]	22,845	31							
Curiosity	Long	0.270 [0.196; 0.341]	9,580	9	-0.040 [-0.137; 0.057]	0.048	-0.833	0.011	85	303*	1
	Short	0.232 [0.177; 0.287]	21,852	28							
Fairness	Long	0.082 [-0.002; 0.166]	7,853	7	0.014 [-0.088; 0.116]	0.050	0.279	0.010	83	264*	0
	Short	0.096 [0.040; 0.152]	20,792	27							
Forgiveness	Long	0.218 [0.165; 0.270]	9,542	14	-0.049 [-0.121; 0.024]	0.036	-1.364	0.007	76	176*	2
	Short	0.171 [0.125; 0.216]	21,852	28							
Gratitude	Long	0.244 [0.149; 0.335]	8,708	11	0.078 [-0.045; 0.198]	0.061	1.284	0.019	90	563*	2
	Short	0.316 [0.250; 0.380]	23,019	31							
Honesty	Long	0.059 [-0.068; 0.184]	8,125	8	0.126 [-0.029; 0.274]	0.076	1.658	0.025	93	378*	3
	Short	0.183 [0.097; 0.267]	21,852	28							
Hope	Long	0.354 [0.260; 0.442]	9,620	13	0.128 [-0.005; 0.257]	0.066	1.941	0.027	93	667*	4
	Short	0.461 [0.392; 0.525]	21,852	28							
Humility	Long	-0.008 [-0.066; 0.051]	7,853	7	0.028 [-0.042; 0.098]	0.034	0.818	0.004	64	95*	1
	Short	0.021 [-0.017; 0.059]	21,852	28							
Humor	Long	0.206 [0.121; 0.289]	8,148	9	-0.058 [-0.164; 0.049]	0.053	-1.100	0.013	88	296*	1
	Short	0.150 [0.089; 0.209]	21,852	28							
Judgment	Long	0.153 [0.077; 0.228]	9,780	10	-0.028 [-0.125; 0.070]	0.048	-0.576	0.011	86	324*	0
	Short	0.126 [0.066; 0.185]	21,852	28							
Kindness	Long	0.083 [0.001; 0.164]	8,125	8	-0.014 [-0.114; 0.085]	0.049	-0.293	0.010	84	227*	0
	Short	0.069 [0.012; 0.125]	21,852	28							
Leadership	Long	0.125 [0.021; 0.227]	7,853	7	0.058 [-0.067; 0.181]	0.062	0.936	0.016	89	338*	1
	Short	0.181 [0.115; 0.246]	21,852	28							
Love of learning	Long	0.174 [0.082; 0.262]	9,580	9	0.005 [-0.111; 0.121]	0.057	0.089	0.016	90	425*	0
	Short	0.178 [0.110; 0.245]	21,852	28							
Love	Long	0.226 [0.074; 0.368]	7,853	7	0.115 [-0.070; 0.292]	0.091	1.263	0.033	94	819*	2
	Short	0.332 [0.240; 0.418]	21,852	28							
Perseverance	Long	0.200 [0.103; 0.294]	8,853	9	0.086 [-0.036; 0.205]	0.060	1.429	0.015	89	394*	2
	Short	0.281 [0.215; 0.344]	21,852	28							
Perspective	Long	0.198 [0.114; 0.278]	9,580	9	-0.065 [-0.170; 0.042]	0.053	-1.235	0.013	88	348*	2
	Short	0.134 [0.072; 0.196]	21,852	28							
Prudence	Long	0.087 [-0.047; 0.218]	7,853	7	0.075 [-0.085; 0.231]	0.079	0.950	0.024	92	591*	1
	Short	0.161 [0.075; 0.244]	21,852	28							
Self regulation	Long	0.235 [0.129; 0.335]	8,329	9	0.052 [-0.081; 0.183]	0.066	0.788	0.019	90	408*	1
	Short	0.283 [0.212; 0.352]	21,852	28							
Social intelligence	Long	0.161 [0.057; 0.261]	9,460	9	0.068 [-0.063; 0.196]	0.064	1.050	0.019	91	488*	1
	Short	0.226 [0.151; 0.299]	21,852	28							
Spirituality	Long	0.130 [0.042; 0.216]	8,348	10	0.019 [-0.090; 0.129]	0.054	0.359	0.012	87	384*	0
	Short	0.149 [0.085; 0.211]	21,852	28							
Teamwork	Long	0.115 [0.012; 0.217]	7,853	7	0.077 [-0.047; 0.199]	0.061	1.259	0.014	88	358*	2
	Short	0.191 [0.125; 0.255]	21,852	28							
Zest	Long	0.369 [0.242; 0.484]	8,053	8	0.163 [-0.007; 0.324]	0.084	1.953	0.032	94	825*	4
	Short	0.502 [0.426; 0.572]	21,852	28							

N = total sample size; k = number of effects;
r = back-transformed meta-analytic correlation coefficient; se = standard error;
* CI = confidence intervals; PI = predicted intervals;
tau2 = total variance (between + within); I2 = percentage of variance due to heterogeneity;
Q = Q statistic; QM = Q test for the moderator analysis. See the shiny app for additional info

6 Detailed results on short vs long VIA formats (WB)

Table S 6: Moderator analysis testing for differences between short and long VIA formats on WB outcomes

Strength	VIA	r	N	k	delta r	se	z	tau2	I2	Q	QM
Appreciation of beauty	Long	0.195 [0.170; 0.220]	132,486	100	-0.018 [-0.047; 0.011]	0.015	-1.246	0.010	90	1528*	2
	Short	0.177 [0.148; 0.206]	135,480	69							
Bravery	Long	0.289 [0.262; 0.316]	131,644	94	-0.020 [-0.051; 0.011]	0.016	-1.284	0.013	92	2385*	2
	Short	0.271 [0.239; 0.302]	135,480	69							
Creativity	Long	0.231 [0.204; 0.258]	131,630	94	-0.004 [-0.032; 0.024]	0.014	-0.264	0.012	93	2639*	0
	Short	0.227 [0.197; 0.257]	136,116	73							
Curiosity	Long	0.403 [0.372; 0.433]	133,907	98	-0.063* [-0.096; -0.031]	0.016	-3.856	0.023	96	3656*	15*
	Short	0.349 [0.313; 0.383]	136,939	76							
Fairness	Long	0.226 [0.202; 0.250]	131,845	95	-0.002 [-0.030; 0.027]	0.014	-0.113	0.008	89	844*	0
	Short	0.225 [0.197; 0.252]	135,860	70							
Forgiveness	Long	0.253 [0.231; 0.274]	132,897	100	-0.005 [-0.033; 0.023]	0.014	-0.360	0.007	87	878*	0
	Short	0.248 [0.223; 0.273]	138,180	74							
Gratitude	Long	0.428 [0.400; 0.454]	150,549	108	0.025 [-0.005; 0.055]	0.015	1.622	0.020	95	4298*	3
	Short	0.448 [0.418; 0.476]	139,220	79							
Honesty	Long	0.296 [0.270; 0.321]	131,644	94	-0.021 [-0.051; 0.009]	0.015	-1.358	0.011	92	1506*	2
	Short	0.277 [0.247; 0.306]	135,480	69							
Hope	Long	0.540 [0.505; 0.572]	175,967	103	0.016 [-0.018; 0.050]	0.017	0.939	0.046	98	6393*	1
	Short	0.551 [0.515; 0.585]	137,193	80							
Humility	Long	0.084 [0.058; 0.109]	174,627	96	-0.010 [-0.039; 0.020]	0.015	-0.641	0.009	91	1173*	0
	Short	0.074 [0.045; 0.104]	137,800	73							
Humor	Long	0.314 [0.291; 0.338]	178,624	111	-0.086* [-0.114; -0.059]	0.014	-6.102	0.010	92	1687*	37*
	Short	0.234 [0.206; 0.262]	137,800	73							
Judgment	Long	0.228 [0.200; 0.256]	131,527	94	-0.033 [-0.058; -0.007]	0.013	-2.554	0.013	93	1891*	7
	Short	0.197 [0.166; 0.227]	135,480	69							
Kindness	Long	0.274 [0.246; 0.301]	132,264	96	-0.025 [-0.056; 0.005]	0.016	-1.635	0.013	92	1463*	3
	Short	0.250 [0.219; 0.280]	138,375	75							
Leadership	Long	0.304 [0.281; 0.327]	131,327	93	-0.038 [-0.066; -0.009]	0.014	-2.616	0.009	89	1719*	7
	Short	0.270 [0.243; 0.296]	138,180	74							
Love of learning	Long	0.267 [0.236; 0.297]	133,907	98	-0.062* [-0.093; -0.031]	0.016	-3.892	0.018	95	2975*	15*
	Short	0.208 [0.173; 0.243]	135,974	71							
Love	Long	0.435 [0.405; 0.464]	131,742	96	0.005 [-0.029; 0.038]	0.017	0.280	0.023	95	3562*	0
	Short	0.439 [0.406; 0.471]	138,806	79							
Perseverance	Long	0.357 [0.331; 0.383]	131,522	96	-0.018 [-0.048; 0.012]	0.015	-1.178	0.014	93	2980*	1
	Short	0.341 [0.312; 0.370]	135,666	70							
Perspective	Long	0.343 [0.316; 0.369]	131,522	96	-0.075* [-0.103; -0.047]	0.014	-5.291	0.013	93	2258*	28*
	Short	0.274 [0.244; 0.304]	135,480	69							
Prudence	Long	0.208 [0.178; 0.238]	131,327	93	-0.027 [-0.059; 0.004]	0.016	-1.695	0.015	93	1391*	3
	Short	0.182 [0.148; 0.216]	135,480	69							
Self regulation	Long	0.330 [0.304; 0.356]	131,760	97	-0.057* [-0.089; -0.026]	0.016	-3.636	0.012	91	3032*	13*
	Short	0.278 [0.247; 0.308]	135,480	69							
Social intelligence	Long	0.349 [0.322; 0.374]	136,065	98	-0.012 [-0.043; 0.019]	0.016	-0.769	0.013	93	1807*	1
	Short	0.338 [0.309; 0.367]	138,622	78							
Spirituality	Long	0.246 [0.219; 0.272]	132,686	101	-0.040* [-0.069; -0.011]	0.015	-2.684	0.012	92	3864*	7*
	Short	0.208 [0.177; 0.238]	135,480	69							
Teamwork	Long	0.322 [0.297; 0.346]	131,630	94	-0.043* [-0.072; -0.014]	0.015	-2.923	0.011	91	1252*	9*
	Short	0.283 [0.254; 0.311]	138,180	74							
Zest	Long	0.522 [0.487; 0.555]	151,426	101	0.014 [-0.021; 0.049]	0.018	0.794	0.043	98	4680*	1
	Short	0.532 [0.495; 0.567]	136,486	75							

N = total sample size; k = number of effects;
r = back-transformed meta-analytic correlation coefficient; se = standard error;
* CI = confidence intervals; PI = predicted intervals;
tau2 = total variance (between + within); I2 = percentage of variance due to heterogeneity;
Q = Q statistic; QM = Q test for the moderator analysis. See the shiny app for additional info

7 Detailed results on specific well-being outcomes

Table S 7: Moderator analysis testing for differences between specific WB outcomes. Back-transformed meta-analytic correlation coefficient and confidence intervals are reported.

Strength	Domain satisfaction	Happiness	Life satisfaction	Negative affect	Positive affect	Psychological wellbeing	Subjective wellbeing	Overall effect	tau2	Q	QM
Appreciation of beauty	0.150 [0.107; 0.192]	0.211 [0.169; 0.252]	0.185 [0.159; 0.211]	0.097 [0.065; 0.130]	0.270 [0.240; 0.299]	0.184 [0.153; 0.215]	0.167 [0.071; 0.261]	0.182 [0.159; 0.204]	0.009	944.411(157)*	31.581(6)*
Bravery	0.193 [0.148; 0.237]	0.413 [0.374; 0.451]	0.261 [0.233; 0.288]	0.129 [0.094; 0.164]	0.323 [0.292; 0.354]	0.362 [0.331; 0.392]	0.204 [0.104; 0.301]	0.269 [0.242; 0.295]	0.012	1604.310(153)*	72.091(6)*
Creativity	0.161 [0.119; 0.203]	0.312 [0.271; 0.351]	0.218 [0.190; 0.246]	0.026 [-0.008; 0.060]	0.344 [0.314; 0.373]	0.291 [0.259; 0.322]	0.161 [0.064; 0.255]	0.224 [0.202; 0.247]	0.012	1321.943(155)*	129.023(6)*
Curiosity	0.254 [0.207; 0.300]	0.534 [0.498; 0.569]	0.374 [0.344; 0.403]	0.137 [0.099; 0.175]	0.464 [0.433; 0.493]	0.410 [0.377; 0.441]	0.348 [0.252; 0.438]	0.383 [0.357; 0.409]	0.018	2032.533(161)*	172.652(6)*
Fairness	0.231 [0.189; 0.272]	0.304 [0.263; 0.344]	0.210 [0.184; 0.236]	0.187 [0.155; 0.220]	0.231 [0.199; 0.262]	0.226 [0.195; 0.257]	0.186 [0.088; 0.280]	0.215 [0.196; 0.235]	0.010	722.874(153)*	6.118(6)*
Forgiveness	0.243 [0.204; 0.282]	0.320 [0.282; 0.357]	0.250 [0.226; 0.274]	0.266 [0.236; 0.295]	0.279 [0.250; 0.307]	0.201 [0.171; 0.230]	0.202 [0.108; 0.292]	0.249 [0.232; 0.266]	0.008	774.577(162)*	8.784(6)*
Gratitude	0.313 [0.268; 0.358]	0.519 [0.482; 0.554]	0.487 [0.461; 0.513]	0.227 [0.190; 0.263]	0.434 [0.403; 0.464]	0.425 [0.393; 0.455]	0.391 [0.297; 0.477]	0.435 [0.412; 0.457]	0.019	2863.571(176)*	114.851(6)*
Honesty	0.212 [0.170; 0.254]	0.341 [0.301; 0.380]	0.275 [0.249; 0.300]	0.160 [0.126; 0.193]	0.283 [0.252; 0.313]	0.376 [0.347; 0.404]	0.257 [0.161; 0.348]	0.275 [0.250; 0.300]	0.010	971.300(151)*	44.344(6)*
Hope	0.357 [0.307; 0.405]	0.674 [0.643; 0.703]	0.558 [0.529; 0.586]	0.384 [0.344; 0.422]	0.581 [0.551; 0.610]	0.523 [0.489; 0.556]	0.554 [0.471; 0.627]	0.534 [0.504; 0.563]	0.032	3535.491(170)*	126.908(6)*
Humility	0.118 [0.073; 0.163]	0.093 [0.047; 0.138]	0.095 [0.066; 0.123]	0.053 [0.019; 0.087]	0.053 [0.019; 0.086]	0.062 [0.028; 0.096]	0.064 [-0.038; 0.166]	0.075 [0.054; 0.095]	0.011	1143.567(157)*	2.873(6)
Humor	0.238 [0.198; 0.276]	0.431 [0.396; 0.464]	0.271 [0.247; 0.294]	0.126 [0.096; 0.156]	0.323 [0.297; 0.350]	0.316 [0.289; 0.343]	0.287 [0.199; 0.372]	0.277 [0.255; 0.298]	0.008	1400.857(172)*	74.981(6)*
Judgment	0.186 [0.141; 0.230]	0.256 [0.213; 0.298]	0.210 [0.181; 0.239]	0.069 [0.033; 0.105]	0.273 [0.241; 0.306]	0.275 [0.242; 0.308]	0.162 [0.061; 0.259]	0.210 [0.185; 0.234]	0.013	1226.730(151)*	53.705(6)*
Kindness	0.247 [0.202; 0.292]	0.330 [0.286; 0.372]	0.254 [0.225; 0.283]	0.114 [0.077; 0.149]	0.284 [0.251; 0.317]	0.316 [0.284; 0.347]	0.216 [0.114; 0.314]	0.259 [0.234; 0.284]	0.014	1095.738(160)*	45.059(6)*
Leadership	0.228 [0.196; 0.260]	0.360 [0.327; 0.392]	0.287 [0.268; 0.306]	0.146 [0.118; 0.173]	0.340 [0.315; 0.363]	0.344 [0.319; 0.367]	0.220 [0.131; 0.306]	0.285 [0.265; 0.305]	0.005	814.174(155)*	58.132(6)*
Love of learning	0.246 [0.200; 0.290]	0.350 [0.307; 0.391]	0.210 [0.179; 0.242]	0.161 [0.124; 0.197]	0.325 [0.291; 0.357]	0.260 [0.225; 0.295]	0.202 [0.100; 0.300]	0.242 [0.216; 0.267]	0.017	2181.254(158)*	40.356(6)*
Love	0.383 [0.340; 0.425]	0.498 [0.460; 0.535]	0.468 [0.441; 0.494]	0.202 [0.165; 0.239]	0.397 [0.365; 0.428]	0.460 [0.430; 0.490]	0.442 [0.351; 0.525]	0.432 [0.405; 0.459]	0.017	2188.001(165)*	103.194(6)*
Perseverance	0.263 [0.221; 0.305]	0.410 [0.372; 0.447]	0.359 [0.332; 0.384]	0.186 [0.151; 0.219]	0.388 [0.359; 0.417]	0.407 [0.378; 0.436]	0.285 [0.191; 0.374]	0.348 [0.325; 0.370]	0.013	1930.815(154)*	74.661(6)*
Perspective	0.216 [0.171; 0.260]	0.390 [0.350; 0.429]	0.325 [0.297; 0.352]	0.140 [0.104; 0.175]	0.386 [0.356; 0.416]	0.368 [0.337; 0.399]	0.261 [0.163; 0.354]	0.304 [0.280; 0.327]	0.013	1453.834(153)*	86.717(6)*
Prudence	0.174 [0.126; 0.221]	0.201 [0.154; 0.248]	0.214 [0.185; 0.245]	0.128 [0.090; 0.165]	0.200 [0.164; 0.236]	0.224 [0.187; 0.259]	0.094 [-0.013; 0.198]	0.194 [0.167; 0.220]	0.015	1072.768(150)*	10.562(6)*
Self regulation	0.197 [0.152; 0.241]	0.338 [0.296; 0.378]	0.336 [0.310; 0.362]	0.287 [0.254; 0.319]	0.353 [0.322; 0.382]	0.321 [0.290; 0.352]	0.206 [0.104; 0.304]	0.306 [0.283; 0.329]	0.011	2319.536(156)*	14.123(6)*
Social intelligence	0.264 [0.222; 0.305]	0.439 [0.402; 0.475]	0.338 [0.313; 0.363]	0.170 [0.137; 0.203]	0.403 [0.375; 0.430]	0.393 [0.364; 0.421]	0.290 [0.194; 0.381]	0.333 [0.309; 0.357]	0.011	925.274(164)*	87.935(6)*
Spirituality	0.171 [0.128; 0.214]	0.328 [0.289; 0.367]	0.254 [0.227; 0.280]	0.103 [0.069; 0.136]	0.257 [0.226; 0.288]	0.226 [0.194; 0.258]	0.210 [0.114; 0.303]	0.232 [0.210; 0.254]	0.011	2765.557(158)*	41.181(6)*
Teamwork	0.300 [0.258; 0.340]	0.340 [0.299; 0.379]	0.306 [0.280; 0.332]	0.202 [0.169; 0.235]	0.299 [0.269; 0.330]	0.332 [0.301; 0.362]	0.287 [0.191; 0.377]	0.298 [0.276; 0.321]	0.011	894.757(156)*	18.691(6)*
Zest	0.399 [0.355; 0.441]	0.684 [0.652; 0.715]	0.529 [0.495; 0.561]	0.300 [0.254; 0.345]	0.602 [0.569; 0.633]	0.500 [0.461; 0.537]	0.474 [0.379; 0.560]	0.533 [0.505; 0.560]	0.040	2689.395(164)*	205.386(6)*

* tau2 = total variance (between + within); I2 = percentage of variance due to heterogeneity;

Q = Q statistic; QM = Q test for the moderator analysis. See the shiny app for additional info

8 Detailed results on specific mental health outcome

Table S 8: Moderator analysis testing for differences between specific MH outcomes. Back-transformed meta-analytic correlation coefficient and confidence intervals are reported.

Strength	Anxiety	Depression	General mental health	Stress	Overall effect	tau2	I2	Q	QM
Appreciation of beauty	-0.05 [-0.12; 0.02]	0.03 [-0.03; 0.08]	0.07 [-0.01; 0.15]	0 [-0.07; 0.07]	0.06 [0.03; 0.09]	0.012	93	302.745*	4.155
Bravery	0.08 [0; 0.15]	0.17 [0.1; 0.23]	0.15 [0.06; 0.23]	0.11 [0.03; 0.19]	0.17 [0.14; 0.21]	0.017	95	270.841*	4.333
Creativity	0.03 [-0.04; 0.09]	0.14 [0.09; 0.2]	0.16 [0.08; 0.23]	0.07 [0.01; 0.14]	0.11 [0.08; 0.14]	0.012	93	444.320*	9.814*
Curiosity	0.12 [0.05; 0.18]	0.29 [0.24; 0.34]	0.25 [0.18; 0.32]	0.18 [0.12; 0.25]	0.25 [0.22; 0.29]	0.012	95	197.336*	17.623*
Fairness	0.06 [0; 0.13]	0.08 [0.03; 0.13]	0.1 [0.03; 0.18]	0.13 [0.07; 0.2]	0.14 [0.11; 0.17]	0.008	92	214.068*	1.724
Forgiveness	0.15 [0.1; 0.2]	0.19 [0.15; 0.23]	0.16 [0.1; 0.23]	0.25 [0.19; 0.3]	0.21 [0.18; 0.23]	0.007	87	134.141*	3.778
Gratitude	0.14 [0.07; 0.22]	0.34 [0.28; 0.4]	0.23 [0.15; 0.32]	0.22 [0.14; 0.3]	0.3 [0.26; 0.33]	0.022	95	449.677*	24.174*
Honesty	0.13 [0.06; 0.2]	0.19 [0.13; 0.25]	0.14 [0.05; 0.22]	0.16 [0.08; 0.24]	0.2 [0.17; 0.23]	0.014	94	288.411*	2.171
Hope	0.3 [0.22; 0.38]	0.48 [0.42; 0.54]	0.34 [0.24; 0.42]	0.34 [0.25; 0.42]	0.46 [0.42; 0.5]	0.035	98	500.465*	27.882*
Humility	0.01 [-0.04; 0.06]	-0.01 [-0.04; 0.03]	0.05 [-0.01; 0.1]	0.06 [0; 0.11]	0.06 [0.03; 0.09]	0.003	89	72.977*	2.371
Humor	0.1 [0.04; 0.17]	0.18 [0.12; 0.23]	0.22 [0.14; 0.29]	0.12 [0.04; 0.19]	0.2 [0.16; 0.22]	0.014	94	212.629*	5.260*
Judgment	0.11 [0.04; 0.17]	0.14 [0.09; 0.19]	0.13 [0.06; 0.21]	0.14 [0.08; 0.21]	0.16 [0.13; 0.19]	0.011	93	302.016*	0.715
Kindness	0.02 [-0.05; 0.09]	0.09 [0.03; 0.14]	0.06 [-0.02; 0.14]	0.08 [0; 0.15]	0.14 [0.1; 0.17]	0.011	95	161.189*	2.212
Leadership	0.12 [0.04; 0.19]	0.19 [0.12; 0.25]	0.18 [0.09; 0.27]	0.1 [0.02; 0.18]	0.19 [0.16; 0.22]	0.019	92	304.859*	3.884
Love of learning	0.09 [0.02; 0.16]	0.2 [0.14; 0.26]	0.21 [0.12; 0.29]	0.13 [0.05; 0.2]	0.19 [0.16; 0.22]	0.017	94	379.885*	6.881*
Love	0.18 [0.07; 0.27]	0.36 [0.28; 0.44]	0.22 [0.11; 0.33]	0.2 [0.09; 0.3]	0.34 [0.3; 0.37]	0.040	96	732.454*	22.523*
Perseverance	0.17 [0.09; 0.24]	0.31 [0.24; 0.37]	0.18 [0.09; 0.27]	0.17 [0.09; 0.26]	0.27 [0.24; 0.3]	0.021	93	343.252*	15.308*
Perspective	0.06 [-0.01; 0.13]	0.18 [0.12; 0.24]	0.16 [0.07; 0.24]	0.12 [0.05; 0.2]	0.2 [0.17; 0.23]	0.018	94	307.158*	7.934*
Prudence	0.11 [0.02; 0.2]	0.15 [0.07; 0.23]	0.1 [0; 0.2]	0.16 [0.07; 0.25]	0.18 [0.15; 0.21]	0.027	93	553.154*	1.694
Self regulation	0.24 [0.17; 0.31]	0.26 [0.2; 0.32]	0.28 [0.2; 0.36]	0.35 [0.28; 0.42]	0.29 [0.26; 0.32]	0.017	91	311.970*	4.212
Social intelligence	0.12 [0.05; 0.2]	0.21 [0.14; 0.27]	0.22 [0.14; 0.3]	0.2 [0.11; 0.28]	0.24 [0.2; 0.27]	0.019	94	401.463*	4.161
Spirituality	0.05 [-0.02; 0.12]	0.18 [0.12; 0.23]	0.09 [0.01; 0.17]	0.09 [0.01; 0.16]	0.14 [0.1; 0.16]	0.012	92	324.245*	10.510*
Teamwork	0.12 [0.04; 0.19]	0.19 [0.12; 0.25]	0.15 [0.06; 0.24]	0.14 [0.06; 0.22]	0.23 [0.2; 0.26]	0.017	93	311.059*	2.879
Zest	0.28 [0.18; 0.37]	0.52 [0.44; 0.58]	0.38 [0.27; 0.47]	0.31 [0.21; 0.41]	0.43 [0.39; 0.47]	0.045	97	673.665*	44.837*

tau2 = total variance (between + within);

* I2 = percentage of variance due to heterogeneity;

Q = Q statistic; QM = Q test for the moderator analysis.

See the shiny app for additional info

9 Clinical and non-clinical samples

For what concerns clinical and non-clinical population, results for both well-being and mental health outcomes are mainly inconclusive. Indeed, although effects are generally higher in non-clinical populations, effects within clinical populations are extremely heterogeneous and significance tests not informative. The high heterogeneity of the findings, other than visually clear, is supported by the Q and tau statistics. According to these results, we did not proceed with further analysis of clinical populations.

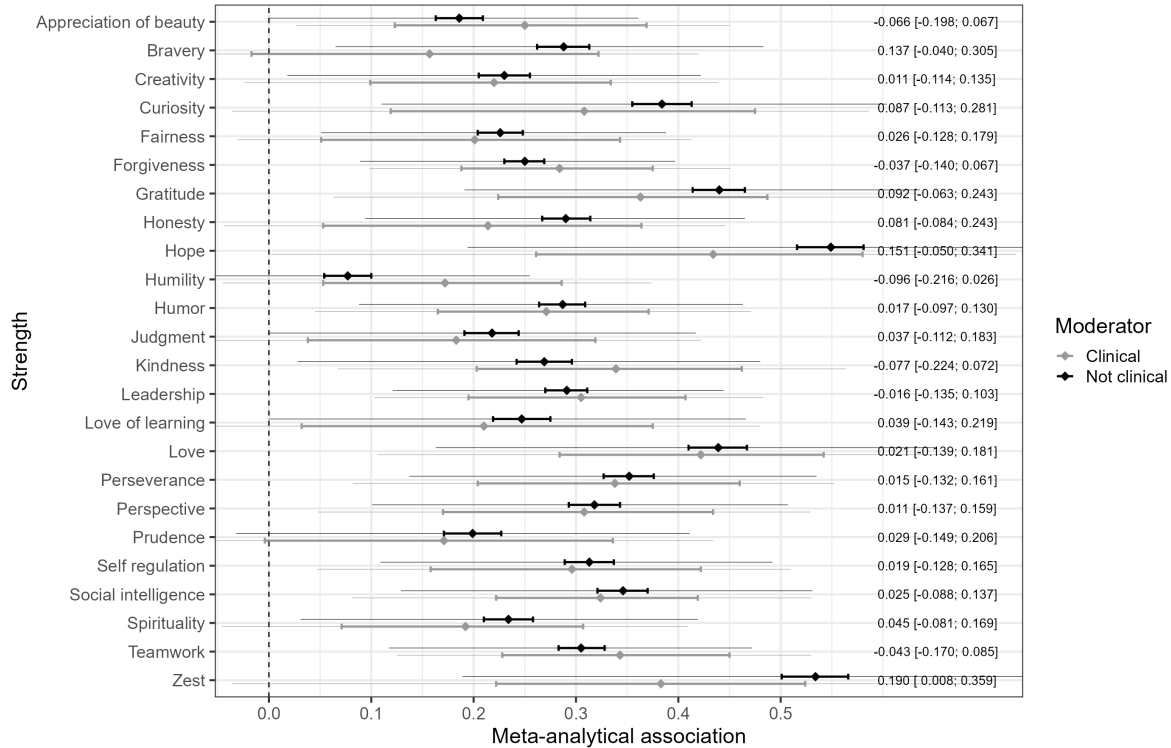


Figure S 1: Well-being associations by population

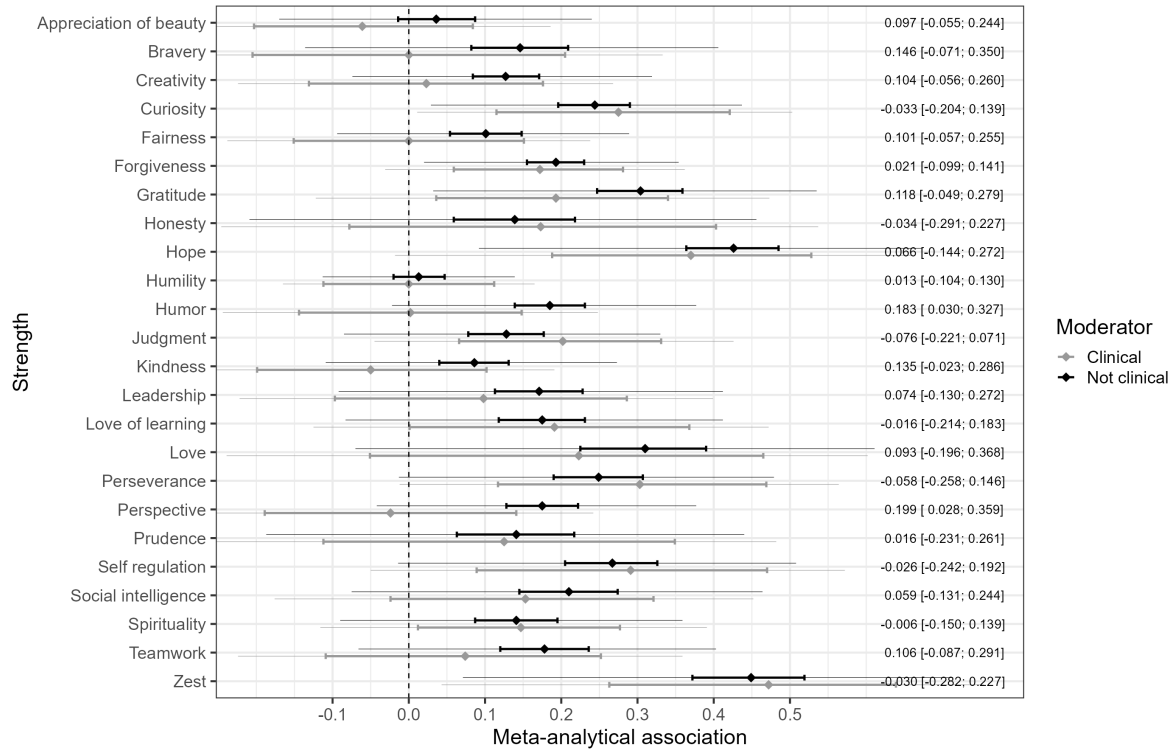


Figure S 2: Mental health associations by population

9.1 Well-being - Detailed results on clinical vs non-clinical population

Table S 9: Moderator analysis testing for differences between clinical and non-clinical population on WB outcomes

Strength	Population	r	N	k	delta r	se	z	tau2	I2	Q	QM
Appreciation of beauty	Clinical	0.250 [0.123; 0.369]	736	9	-0.066 [-0.198; 0.067]	0.068	-0.981	0.009	91	1601*	1
	Not clinical	0.186 [0.163; 0.209]	267,230	160							
Bravery	Clinical	0.157 [-0.017; 0.322]	541	6	0.137 [-0.040; 0.305]	0.090	1.530	0.014	93	2423*	2
	Not clinical	0.288 [0.262; 0.313]	266,645	159							
Creativity	Clinical	0.220 [0.099; 0.334]	835	8	0.011 [-0.114; 0.135]	0.063	0.169	0.012	93	3156*	0
	Not clinical	0.230 [0.205; 0.255]	266,911	159							
Curiosity	Clinical	0.308 [0.119; 0.475]	541	6	0.087 [-0.113; 0.281]	0.102	0.858	0.022	96	3653*	1
	Not clinical	0.384 [0.355; 0.413]	270,305	168							
Fairness	Clinical	0.201 [0.051; 0.343]	541	6	0.026 [-0.128; 0.179]	0.078	0.334	0.008	90	921*	0
	Not clinical	0.226 [0.204; 0.248]	267,164	159							
Forgiveness	Clinical	0.284 [0.188; 0.375]	3,061	11	-0.037 [-0.140; 0.067]	0.053	-0.704	0.007	88	842*	0
	Not clinical	0.250 [0.230; 0.269]	268,016	163							
Gratitude	Clinical	0.363 [0.224; 0.487]	839	9	0.092 [-0.063; 0.243]	0.079	1.171	0.020	95	4657*	1
	Not clinical	0.440 [0.414; 0.465]	288,992	180							
Honesty	Clinical	0.214 [0.053; 0.364]	541	6	0.081 [-0.084; 0.243]	0.084	0.969	0.011	92	1851*	1
	Not clinical	0.290 [0.267; 0.314]	266,583	157							
Hope	Clinical	0.434 [0.261; 0.580]	936	10	0.151 [-0.050; 0.341]	0.103	1.487	0.045	98	6363*	2
	Not clinical	0.549 [0.516; 0.581]	312,224	173							
Humility	Clinical	0.172 [0.053; 0.286]	2,861	10	-0.096 [-0.216; 0.026]	0.062	-1.551	0.009	91	1655*	2
	Not clinical	0.077 [0.054; 0.100]	309,566	159							
Humor	Clinical	0.271 [0.165; 0.371]	3,089	14	0.017 [-0.097; 0.130]	0.058	0.292	0.011	93	2304*	0
	Not clinical	0.287 [0.264; 0.309]	313,335	170							
Judgment	Clinical	0.183 [0.038; 0.319]	741	7	0.037 [-0.112; 0.183]	0.075	0.486	0.013	93	1976*	0
	Not clinical	0.218 [0.191; 0.244]	266,266	156							
Kindness	Clinical	0.339 [0.203; 0.462]	2,861	10	-0.077 [-0.224; 0.072]	0.076	-1.021	0.015	94	1579*	1
	Not clinical	0.269 [0.242; 0.296]	269,415	163							
Leadership	Clinical	0.305 [0.195; 0.407]	2,861	10	-0.016 [-0.135; 0.103]	0.061	-0.261	0.008	89	1739*	0
	Not clinical	0.291 [0.270; 0.311]	266,646	157							
Love of learning	Clinical	0.210 [0.032; 0.375]	541	6	0.039 [-0.143; 0.219]	0.093	0.425	0.016	95	3072*	0
	Not clinical	0.247 [0.219; 0.275]	269,402	165							
Love	Clinical	0.422 [0.284; 0.542]	2,959	12	0.021 [-0.139; 0.181]	0.082	0.261	0.024	96	3502*	0
	Not clinical	0.439 [0.410; 0.467]	267,651	165							
Perseverance	Clinical	0.338 [0.204; 0.460]	736	9	0.015 [-0.132; 0.161]	0.075	0.203	0.013	94	3025*	0
	Not clinical	0.352 [0.327; 0.376]	266,452	157							
Perspective	Clinical	0.308 [0.170; 0.434]	736	9	0.011 [-0.137; 0.159]	0.076	0.149	0.013	93	2311*	0
	Not clinical	0.318 [0.293; 0.343]	266,266	156							
Prudence	Clinical	0.171 [-0.004; 0.336]	541	6	0.029 [-0.149; 0.206]	0.091	0.322	0.014	93	1583*	0
	Not clinical	0.199 [0.171; 0.227]	266,266	156							
Self regulation	Clinical	0.296 [0.158; 0.422]	736	9	0.019 [-0.128; 0.165]	0.075	0.258	0.012	92	3119*	0
	Not clinical	0.313 [0.289; 0.337]	266,566	159							
Social intelligence	Clinical	0.324 [0.222; 0.419]	3,355	13	0.025 [-0.088; 0.137]	0.057	0.436	0.013	93	1761*	0
	Not clinical	0.346 [0.321; 0.370]	271,332	163							
Spirituality	Clinical	0.192 [0.071; 0.307]	936	10	0.045 [-0.081; 0.169]	0.064	0.701	0.011	92	4517*	0
	Not clinical	0.234 [0.210; 0.258]	267,230	160							
Teamwork	Clinical	0.343 [0.228; 0.450]	2,861	10	-0.043 [-0.170; 0.085]	0.065	-0.657	0.010	91	1231*	0
	Not clinical	0.305 [0.283; 0.328]	266,949	158							
Zest	Clinical	0.383 [0.222; 0.524]	1,034	12	0.190 [0.008; 0.359]	0.093	2.063	0.041	98	4649*	4
	Not clinical	0.534 [0.501; 0.566]	286,878	164							

N = total sample size; k = number of effects;
r = back-transformed meta-analytic correlation coefficient; se = standard error;
* CI = confidence intervals; PI = predicted intervals;
tau2 = total variance (between + within); I2 = percentage of variance due to heterogeneity;
Q = Q statistic; QM = Q test for the moderator analysis. See the shiny app for additional info

9.2 Mental health - Detailed results on clinical vs non-clinical populations

Table S 10: Moderator analysis testing for differences between clinical and non-clinical populations on MH outcomes

Strength	Population	r	N	k	delta r	se	z	tau2	I2	Q	QM
Appreciation of beauty	Clinical	-0.061 [-0.203; 0.084]	1,302	3	0.097 [-0.055; 0.244]	0.075	1.296	0.010	85	318*	2
	Not clinical	0.036 [-0.014; 0.087]	28,698	34							
Bravery	Clinical	0.000 [-0.205; 0.205]	1,248	2	0.146 [-0.071; 0.350]	0.107	1.369	0.019	91	381*	2
	Not clinical	0.146 [0.082; 0.209]	28,729	34							
Creativity	Clinical	0.023 [-0.131; 0.176]	1,248	2	0.104 [-0.056; 0.260]	0.080	1.316	0.010	85	462*	2
	Not clinical	0.127 [0.084; 0.171]	31,177	38							
Curiosity	Clinical	0.275 [0.115; 0.421]	1,248	2	-0.033 [-0.204; 0.139]	0.086	-0.391	0.011	87	341*	0
	Not clinical	0.244 [0.196; 0.290]	30,184	35							
Fairness	Clinical	0.000 [-0.151; 0.151]	1,248	2	0.101 [-0.057; 0.255]	0.078	1.301	0.009	83	255*	2
	Not clinical	0.101 [0.054; 0.148]	27,397	32							
Forgiveness	Clinical	0.172 [0.059; 0.281]	1,502	4	0.021 [-0.099; 0.141]	0.060	0.354	0.007	79	181*	0
	Not clinical	0.193 [0.155; 0.230]	29,892	38							
Gratitude	Clinical	0.193 [0.036; 0.340]	1,502	4	0.118 [-0.049; 0.279]	0.083	1.432	0.019	91	552*	2
	Not clinical	0.304 [0.247; 0.359]	30,225	38							
Honesty	Clinical	0.173 [-0.078; 0.403]	1,248	2	-0.034 [-0.291; 0.227]	0.130	-0.262	0.028	94	381*	0
	Not clinical	0.139 [0.059; 0.218]	28,729	34							
Hope	Clinical	0.370 [0.188; 0.528]	1,502	4	0.066 [-0.144; 0.272]	0.105	0.635	0.031	94	667*	0
	Not clinical	0.426 [0.364; 0.485]	29,970	37							
Humility	Clinical	0.000 [-0.112; 0.112]	1,248	2	0.013 [-0.104; 0.130]	0.058	0.229	0.004	66	102*	0
	Not clinical	0.013 [-0.020; 0.047]	28,457	33							
Humor	Clinical	0.002 [-0.144; 0.148]	1,302	3	0.183 [0.030; 0.327]	0.076	2.429	0.010	86	262*	6
	Not clinical	0.185 [0.139; 0.231]	28,698	34							
Judgment	Clinical	0.202 [0.066; 0.331]	1,448	3	-0.076 [-0.221; 0.071]	0.073	-1.047	0.011	86	332*	1
	Not clinical	0.128 [0.078; 0.177]	30,184	35							
Kindness	Clinical	-0.050 [-0.199; 0.102]	1,248	2	0.135 [-0.023; 0.286]	0.078	1.738	0.009	82	216*	3
	Not clinical	0.086 [0.040; 0.131]	28,729	34							
Leadership	Clinical	0.098 [-0.097; 0.286]	1,248	2	0.074 [-0.130; 0.272]	0.101	0.738	0.016	90	339*	1
	Not clinical	0.171 [0.113; 0.228]	28,457	33							
Love of learning	Clinical	0.191 [0.001; 0.368]	1,248	2	-0.016 [-0.214; 0.183]	0.099	-0.163	0.016	90	430*	0
	Not clinical	0.175 [0.118; 0.231]	30,184	35							
Love	Clinical	0.223 [-0.051; 0.465]	1,248	2	0.093 [-0.196; 0.368]	0.144	0.651	0.035	95	806*	0
	Not clinical	0.310 [0.225; 0.390]	28,457	33							
Perseverance	Clinical	0.303 [0.117; 0.469]	1,248	2	-0.058 [-0.258; 0.146]	0.101	-0.578	0.016	91	396*	0
	Not clinical	0.249 [0.190; 0.307]	29,457	35							
Perspective	Clinical	-0.024 [-0.189; 0.141]	1,248	2	0.199 [0.028; 0.359]	0.086	2.357	0.011	86	322*	6
	Not clinical	0.175 [0.128; 0.222]	30,184	35							
Prudence	Clinical	0.125 [-0.112; 0.349]	1,248	2	0.016 [-0.231; 0.261]	0.123	0.127	0.025	93	604*	0
	Not clinical	0.141 [0.063; 0.217]	28,457	33							
Self regulation	Clinical	0.291 [0.089; 0.470]	1,248	2	-0.026 [-0.242; 0.192]	0.109	-0.243	0.019	90	408*	0
	Not clinical	0.267 [0.205; 0.326]	28,933	35							
Social intelligence	Clinical	0.153 [-0.024; 0.321]	1,448	3	0.059 [-0.131; 0.244]	0.094	0.628	0.019	91	488*	0
	Not clinical	0.210 [0.145; 0.274]	29,864	34							
Spirituality	Clinical	0.147 [0.012; 0.277]	1,502	4	-0.006 [-0.150; 0.139]	0.072	-0.081	0.012	88	385*	0
	Not clinical	0.141 [0.087; 0.195]	28,698	34							
Teamwork	Clinical	0.074 [-0.109; 0.252]	1,248	2	0.106 [-0.087; 0.291]	0.095	1.115	0.014	88	370*	1
	Not clinical	0.178 [0.120; 0.236]	28,457	33							
Zest	Clinical	0.472 [0.263; 0.639]	1,448	3	-0.030 [-0.282; 0.227]	0.128	-0.231	0.039	96	860*	0
	Not clinical	0.449 [0.372; 0.519]	28,783	34							

N = total sample size; k = number of effects;

r = back-transformed meta-analytic correlation coefficient; se = standard error;

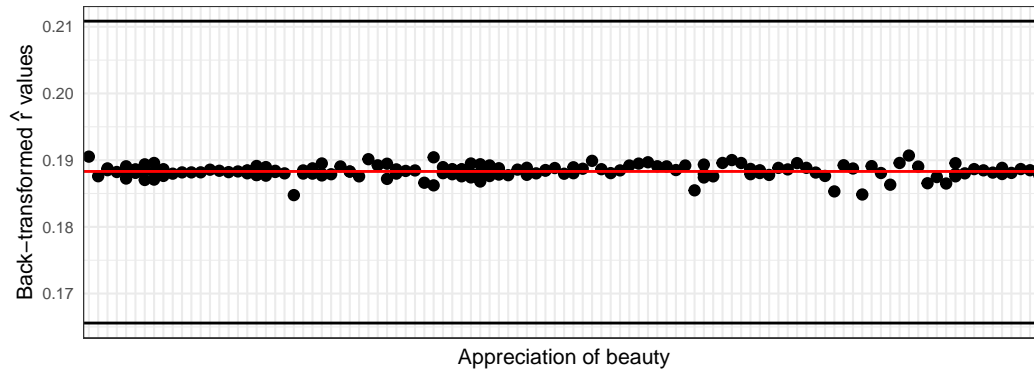
* CI = confidence intervals; PI = predicted intervals;

tau2 = total variance (between + within); I2 = percentage of variance due to heterogeneity;

Q = Q statistic; QM = Q test for the moderator analysis. See the shiny app for additional info

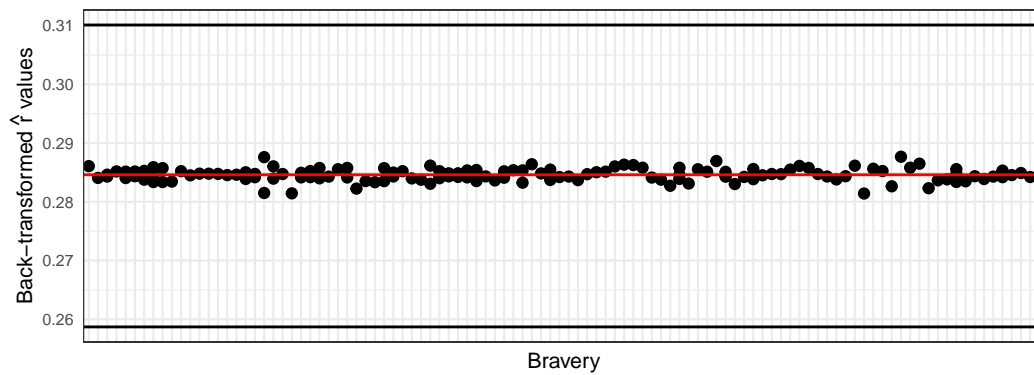
10 Robustness checks

10.1 Well-being



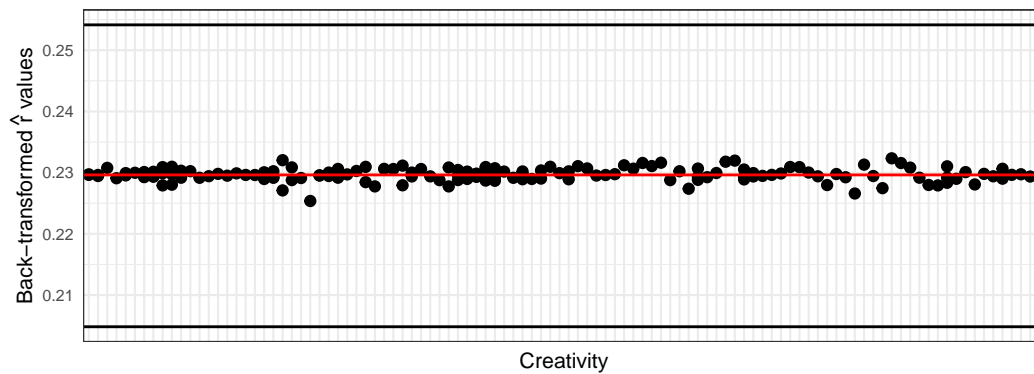
Figure

FigureS1. Appreciation of beauty and well-being leave one out results



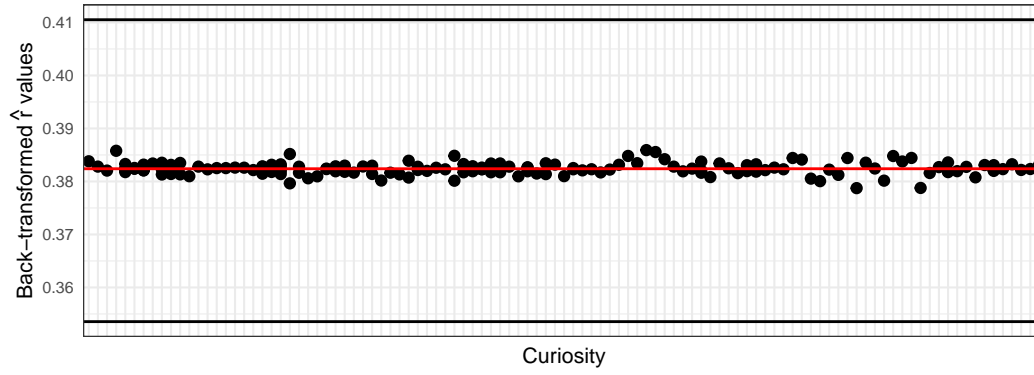
Figure

FigureS2. Bravery and well-being leave one out results



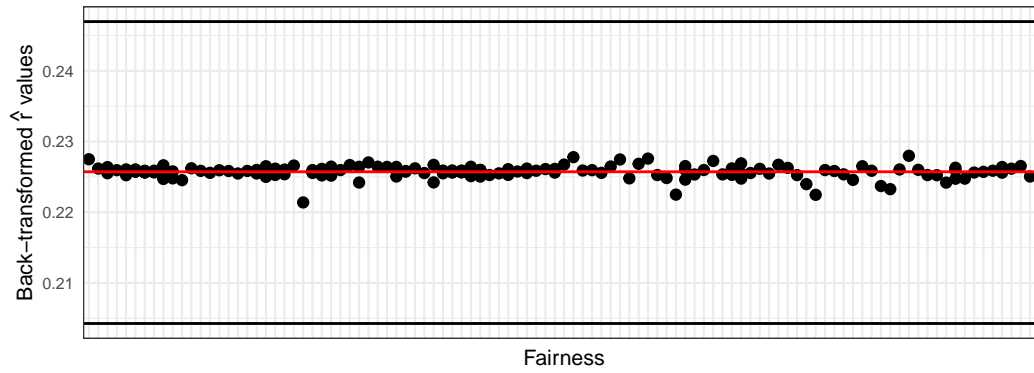
Figure

FigureS3. Creativity and well-being leave one out results



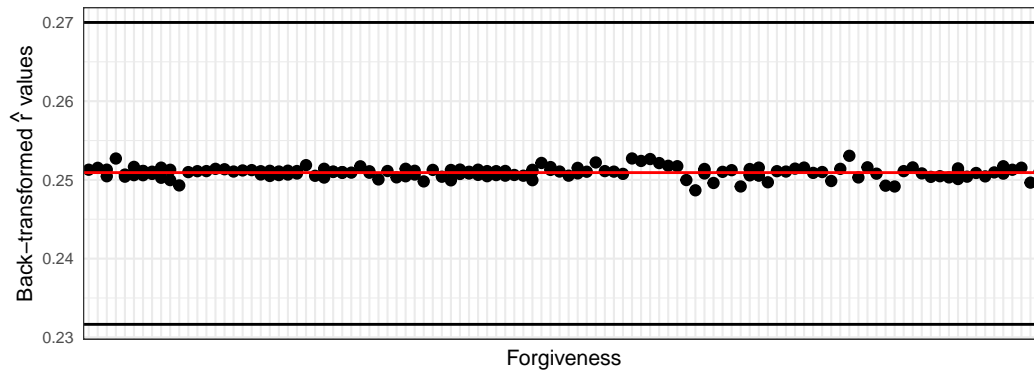
FigureS4. Curiosity and well-being leave one out results

Figure



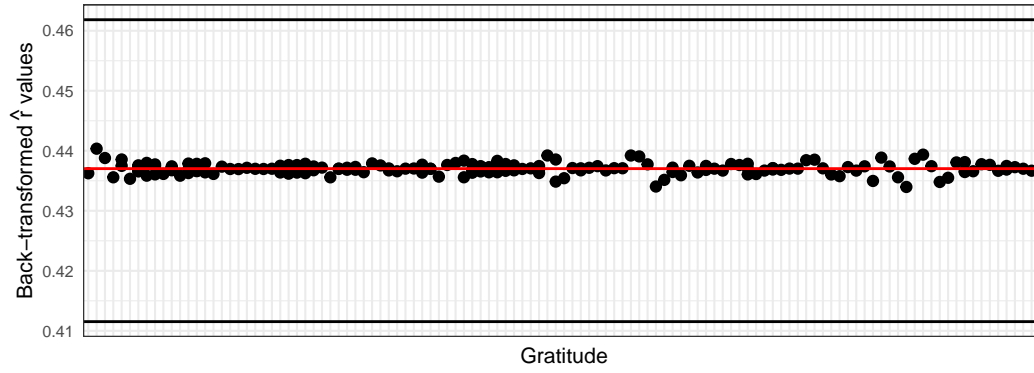
FigureS5. Fairness and well-being leave one out results

Figure



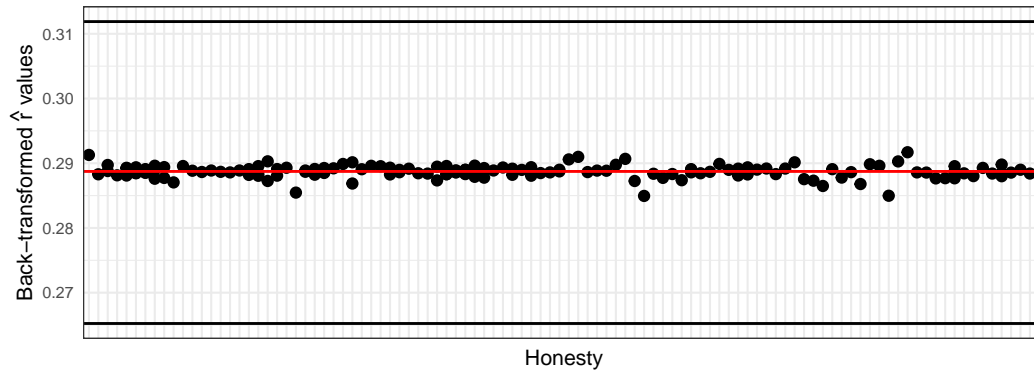
FigureS6. Forgiveness and well-being leave one out results

Figure



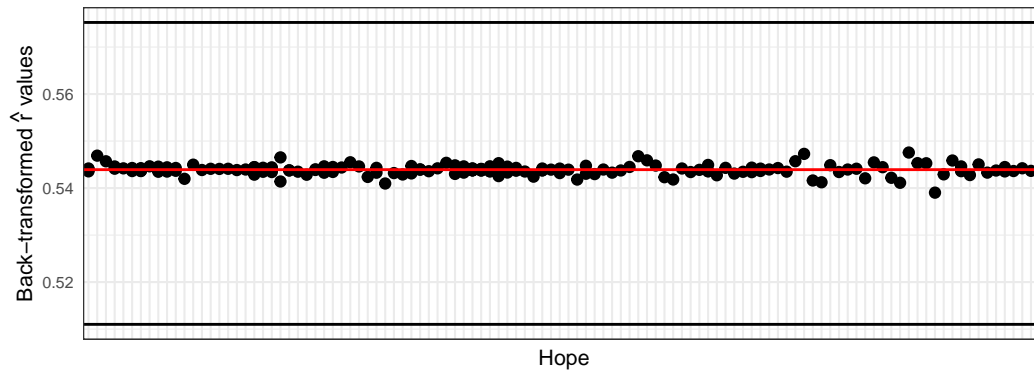
Figure

FigureS7. Gratitude and well-being leave one out results



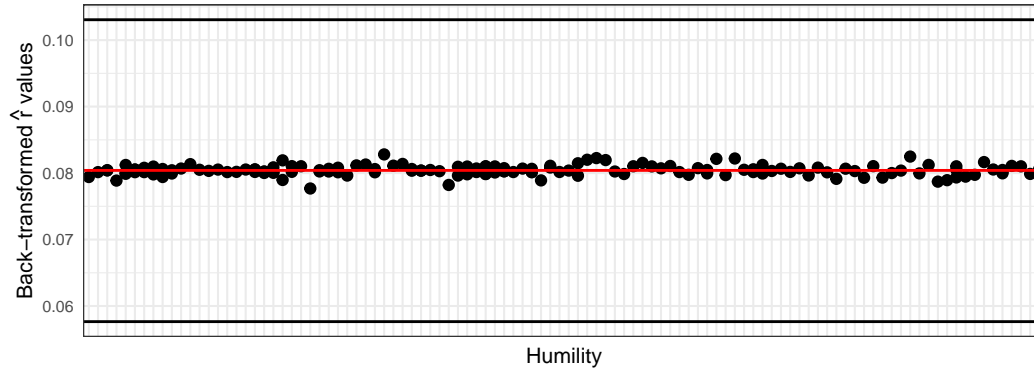
Figure

FigureS8. Honesty and well-being leave one out results



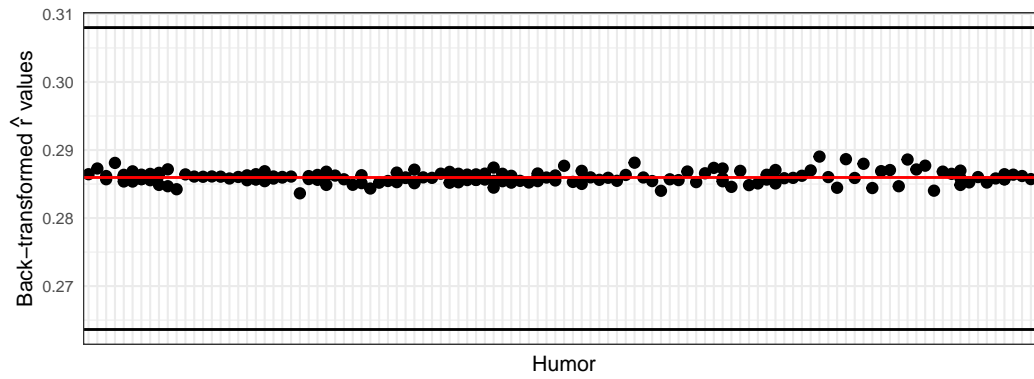
Figure

FigureS9. Hope and well-being leave one out results



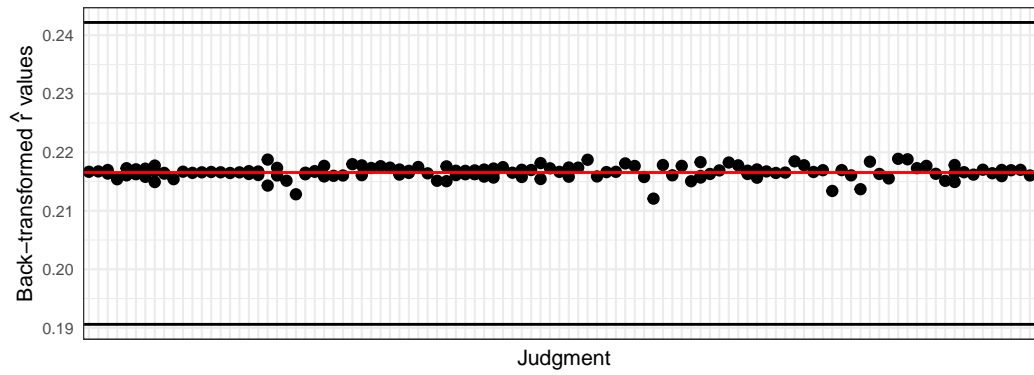
Figure

FigureS10. Humility and well-being leave one out results



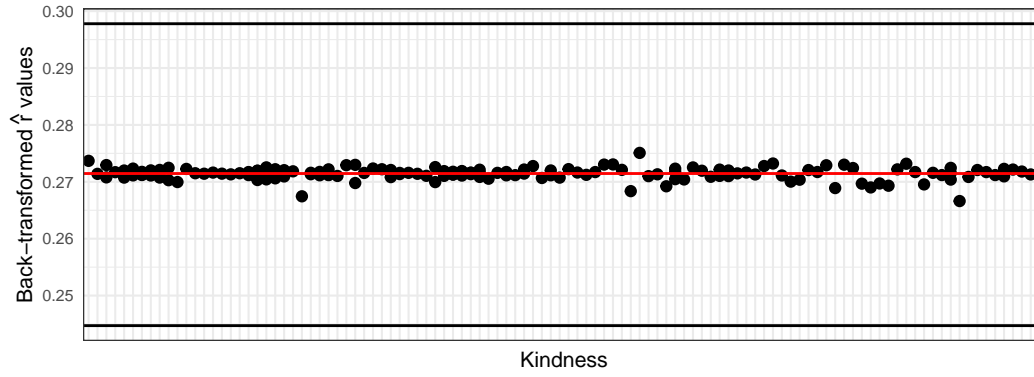
Figure

FigureS11. Humor and well-being leave one out results



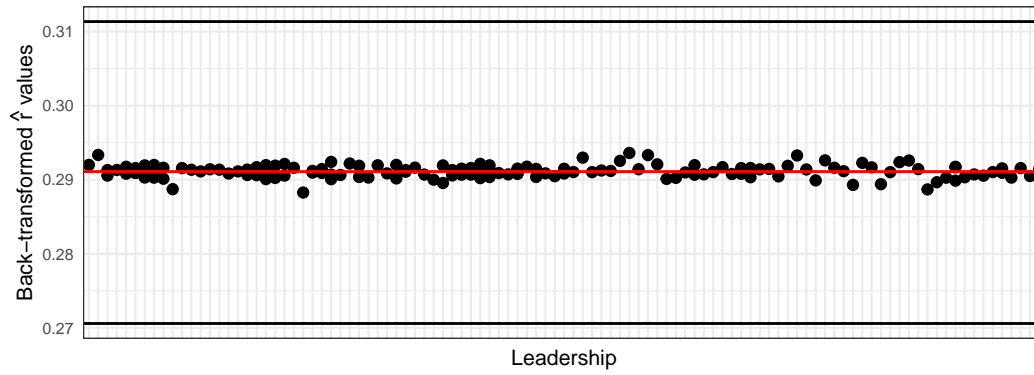
Figure

FigureS12. Judgment and well-being leave one out results



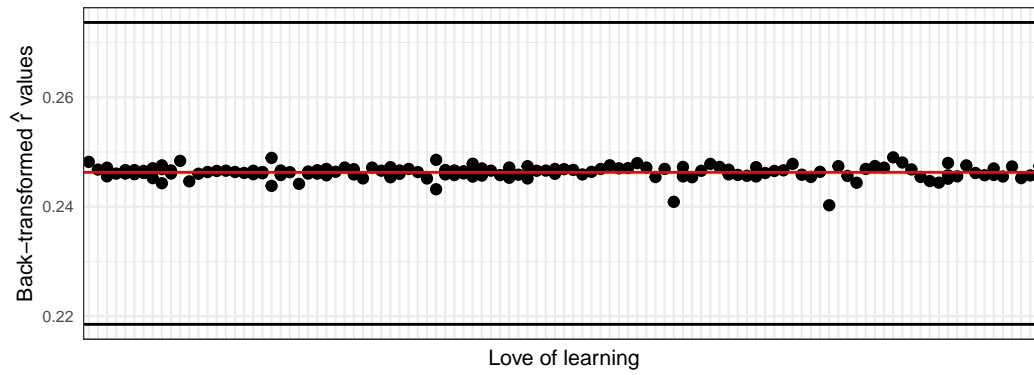
Figure

FigureS13. Kindness and well-being leave one out results



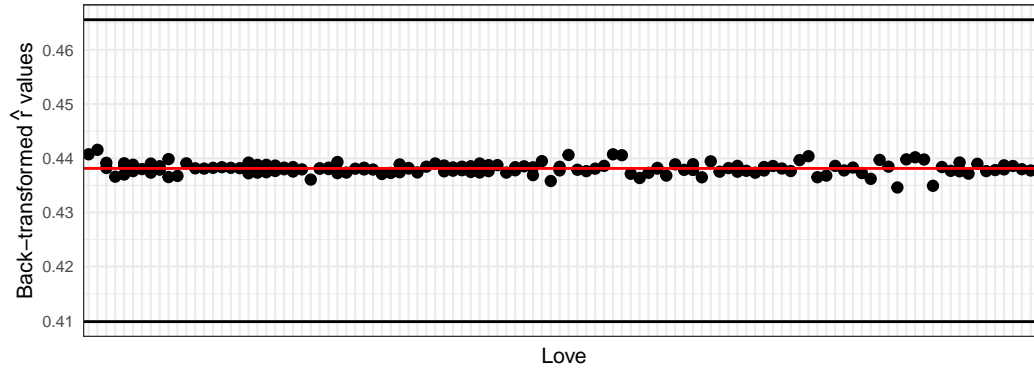
Figure

FigureS14. Leadership and well-being leave one out results



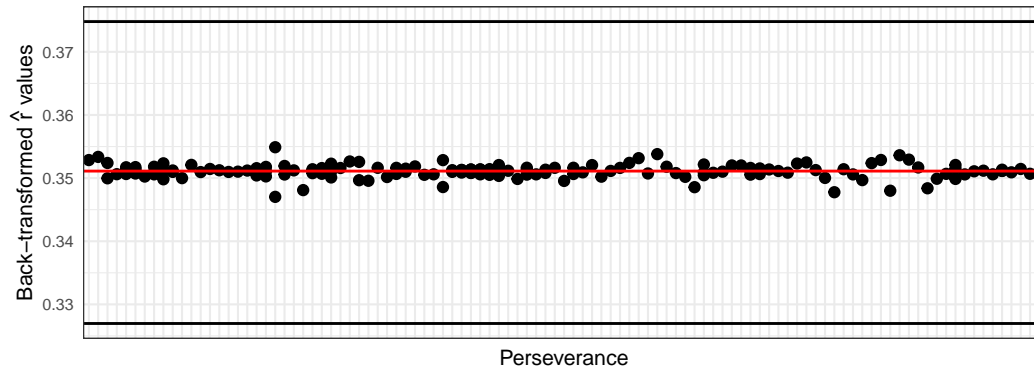
Figure

FigureS15. Love of learning and well-being leave one out results



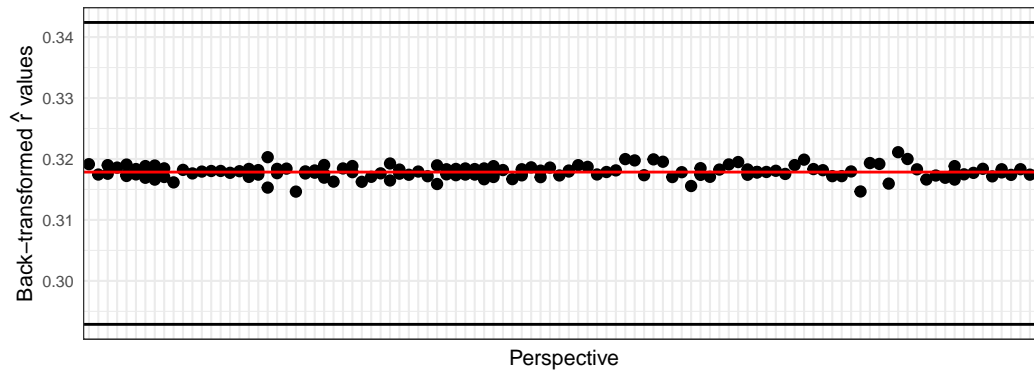
Figure

FigureS16. Love and well-being leave one out results



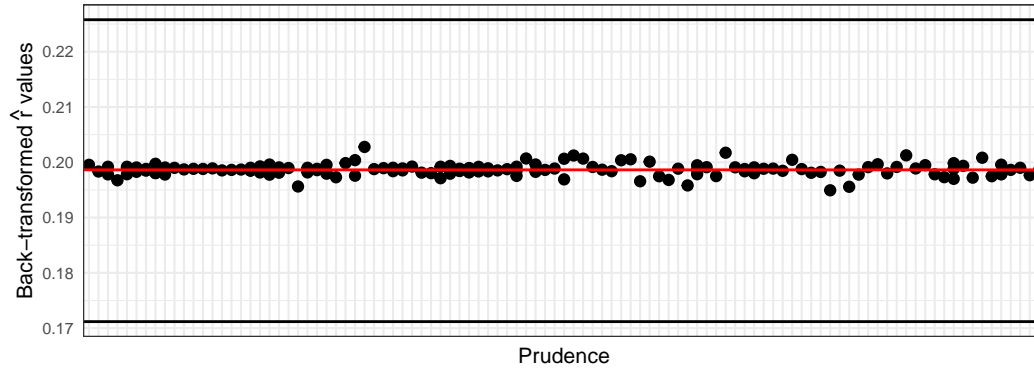
Figure

FigureS17. Perseverance and well-being leave one out results



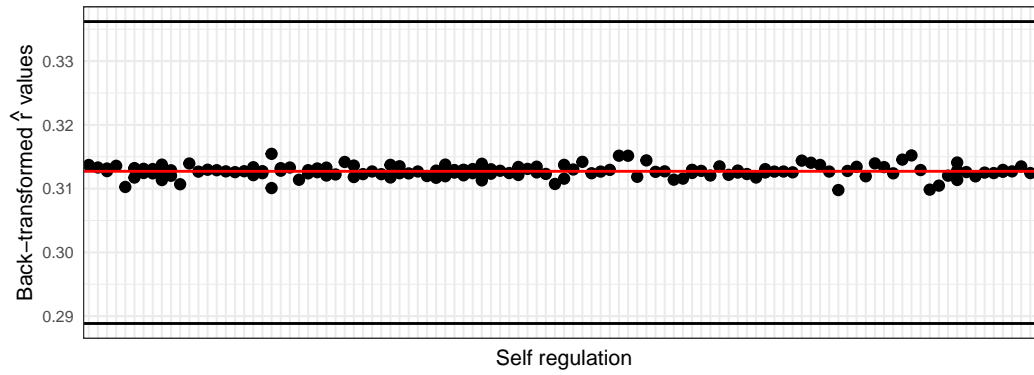
Figure

FigureS18. Perspective and well-being leave one out results



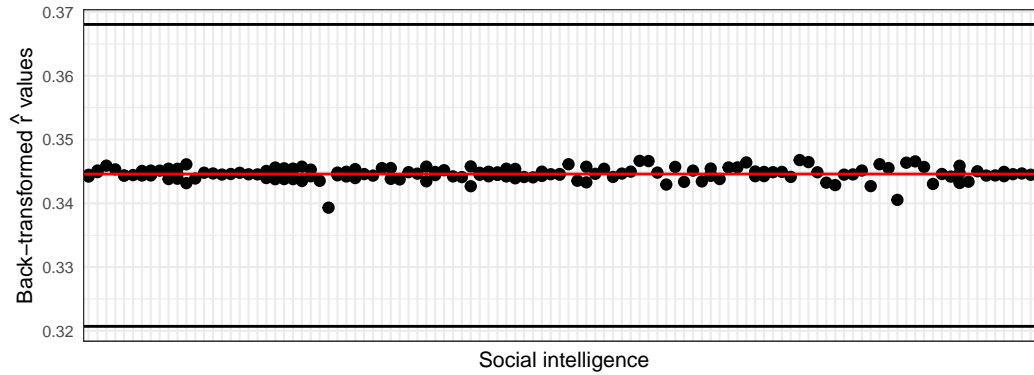
Figure

FigureS19. Prudence and well-being leave one out results



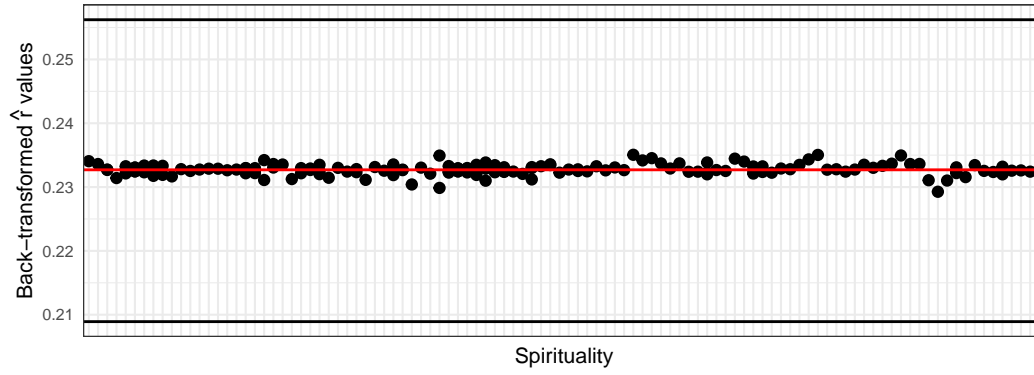
Figure

FigureS20. Self regulation and well-being leave one out results



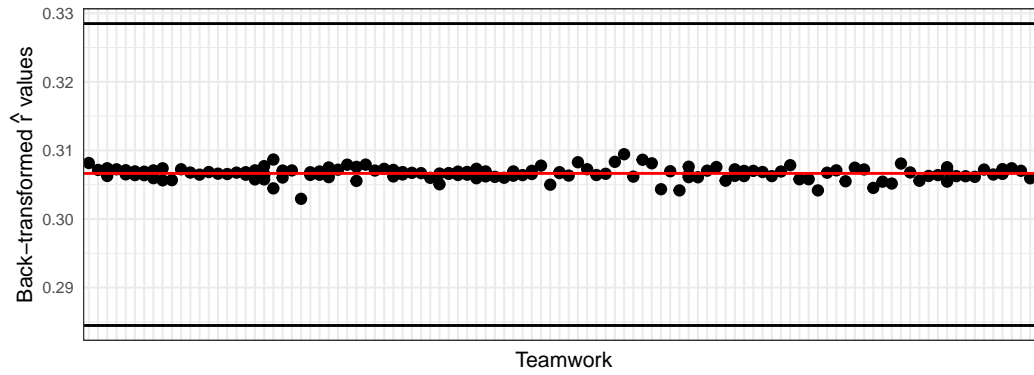
Figure

FigureS21. Social intelligence and well-being leave one out results



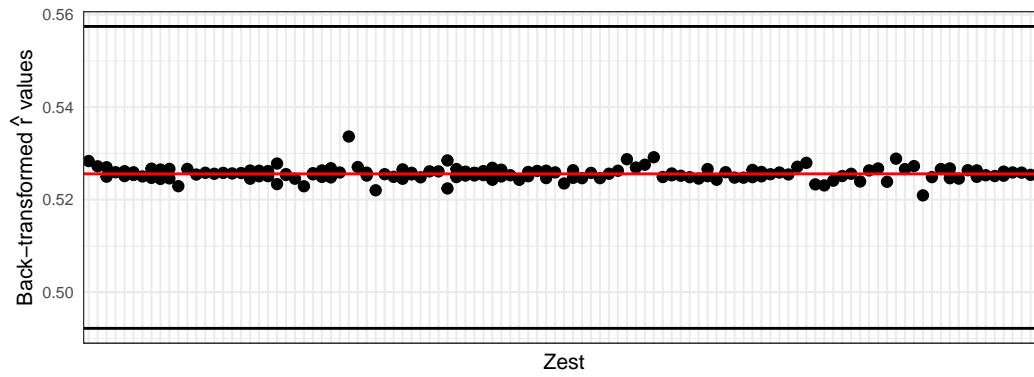
Figure

FigureS22. Spirituality and well-being leave one out results



Figure

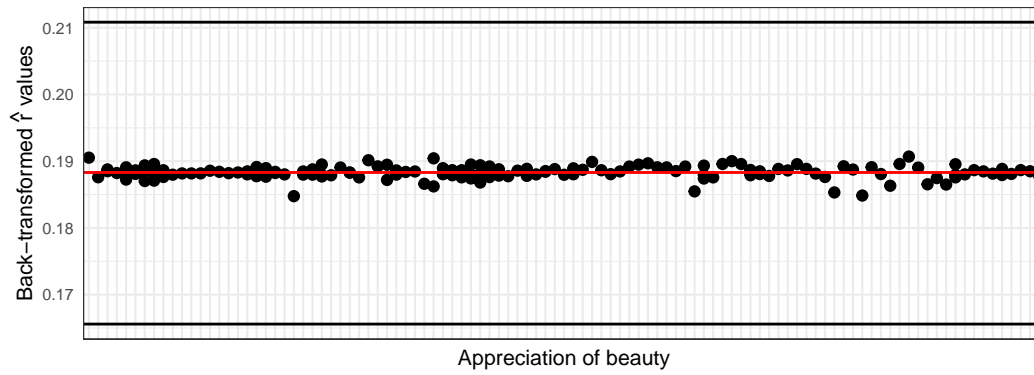
FigureS23. Teamwork and well-being leave one out results



Figure

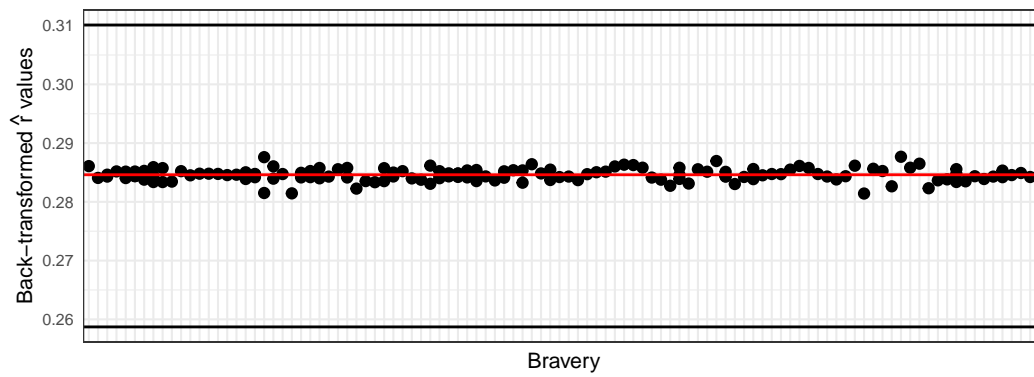
FigureS24. Zest and well-being leave one out results

10.2 Mental health



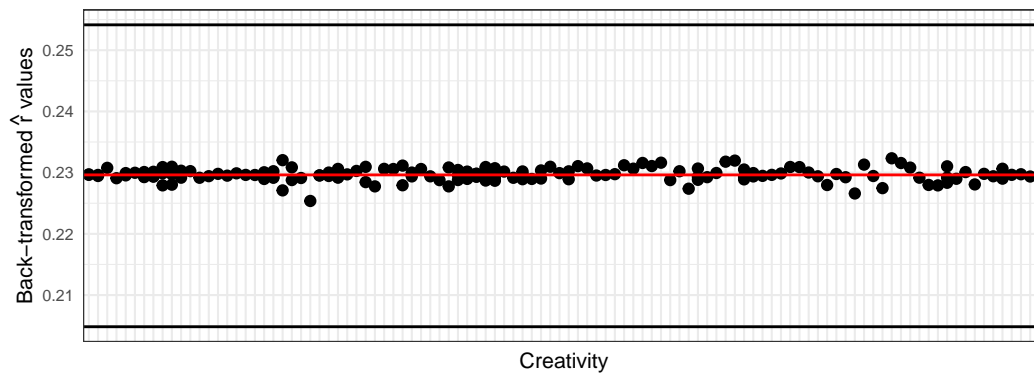
Figure

FigureS25. Appreciation of beauty and mental health leave one out results



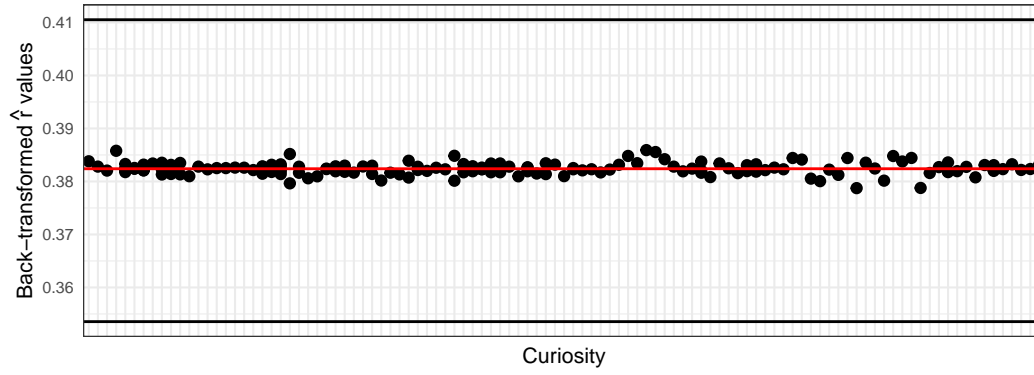
Figure

FigureS26. Bravery and mental health leave one out results



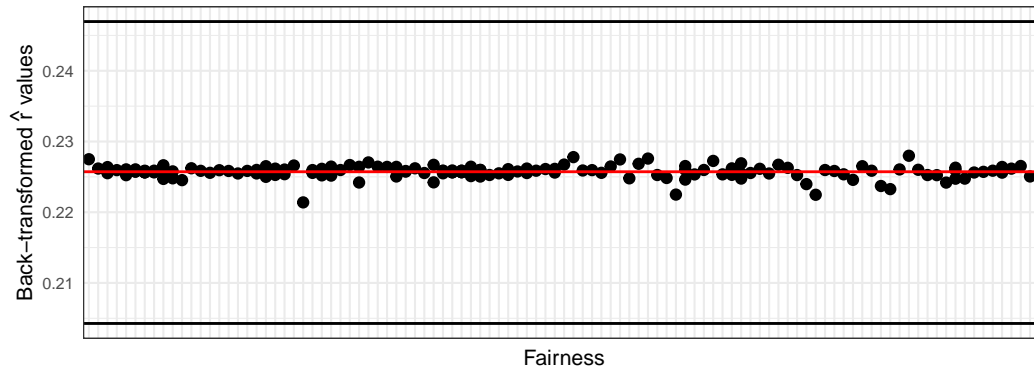
Figure

FigureS27. Creativity and mental health leave one out results



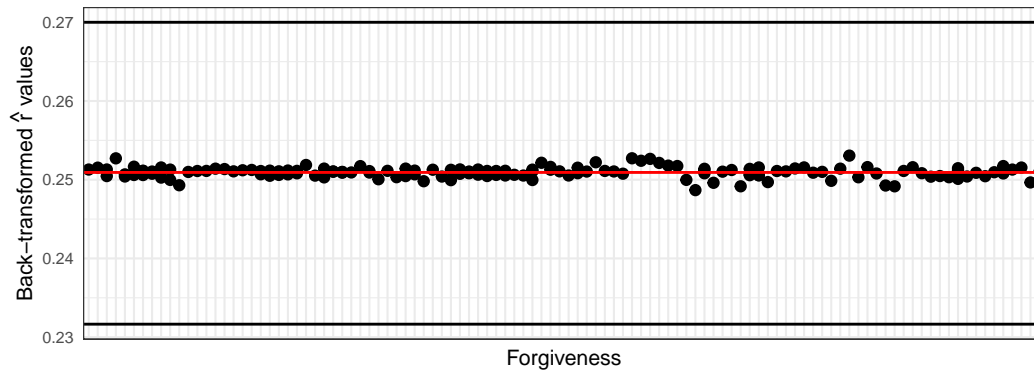
Figure

FigureS28. Curiosity and mental health leave one out results



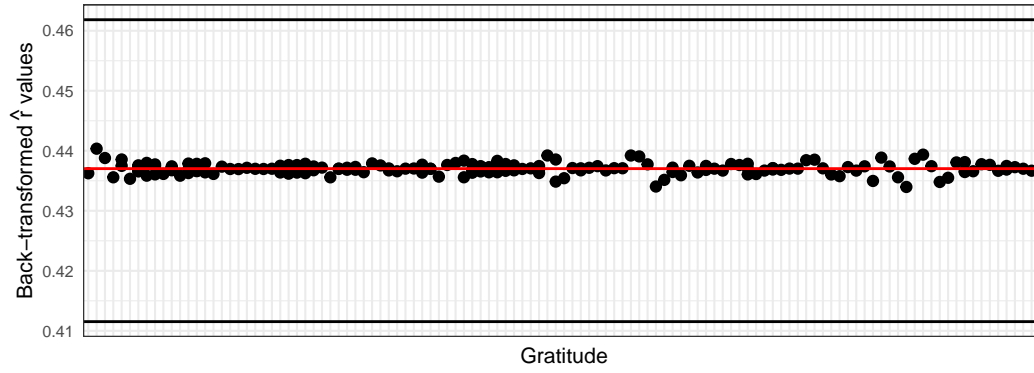
Figure

FigureS29. Fairness and mental health leave one out results



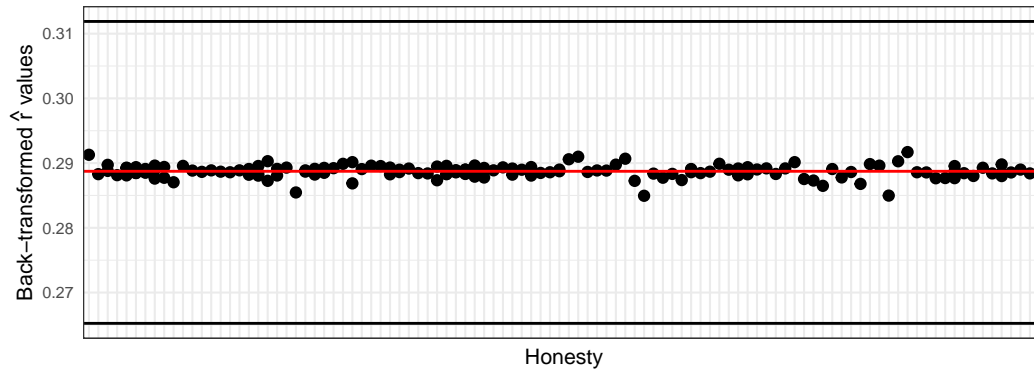
Figure

FigureS30. Forgiveness and mental health leave one out results



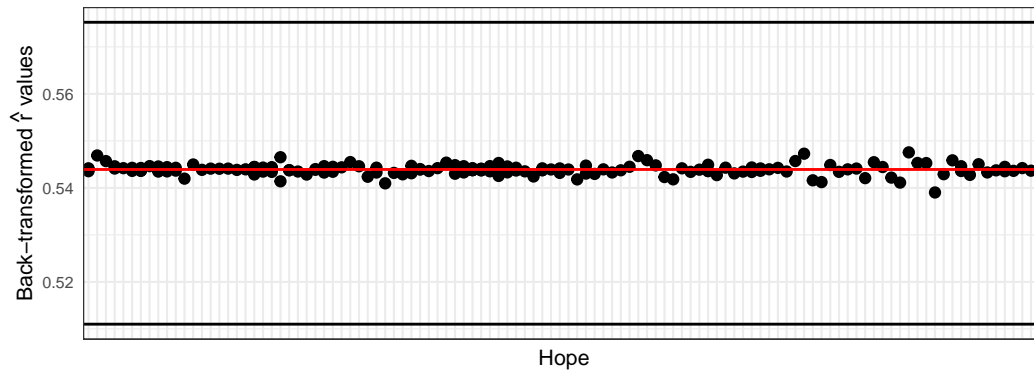
Figure

FigureS31. Gratitude and mental health leave one out results



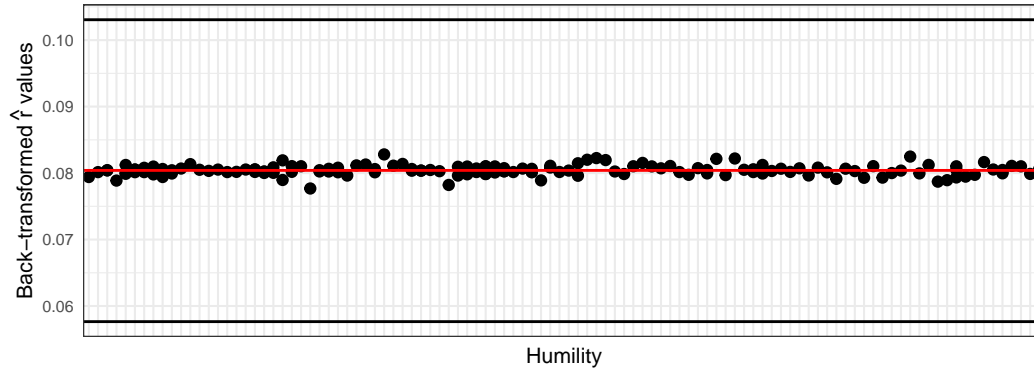
Figure

FigureS32. Honesty and mental health leave one out results



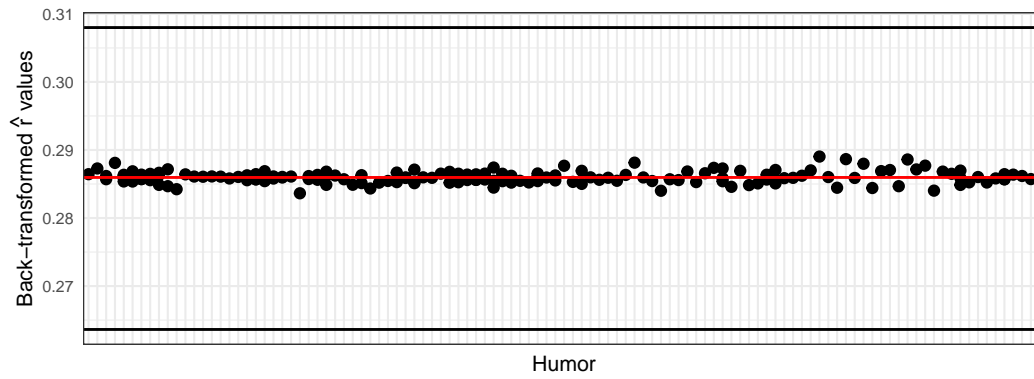
Figure

FigureS33. Hope and mental health leave one out results



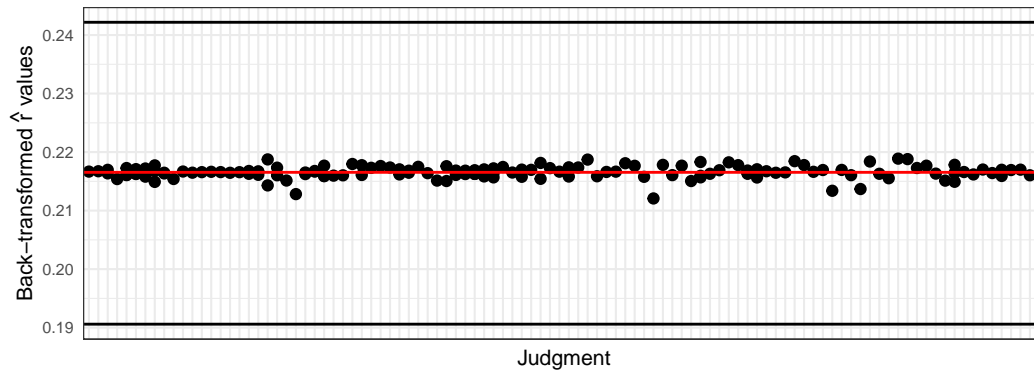
Figure

FigureS34. Humility and mental health leave one out results



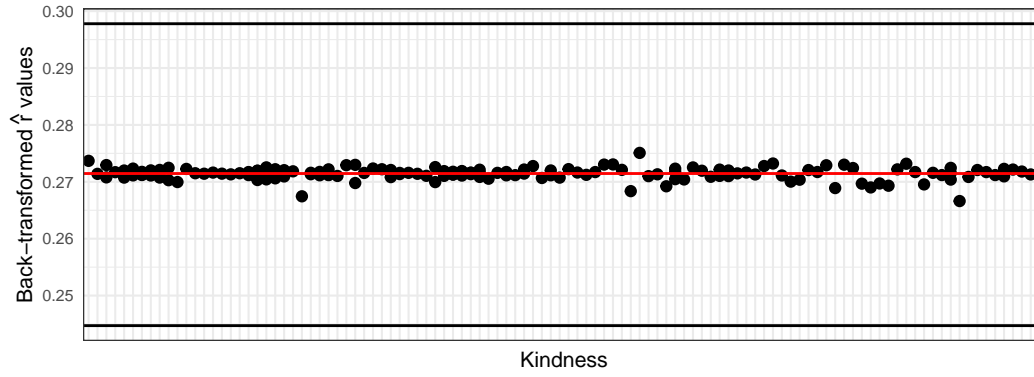
Figure

FigureS35. Humor and mental health leave one out results



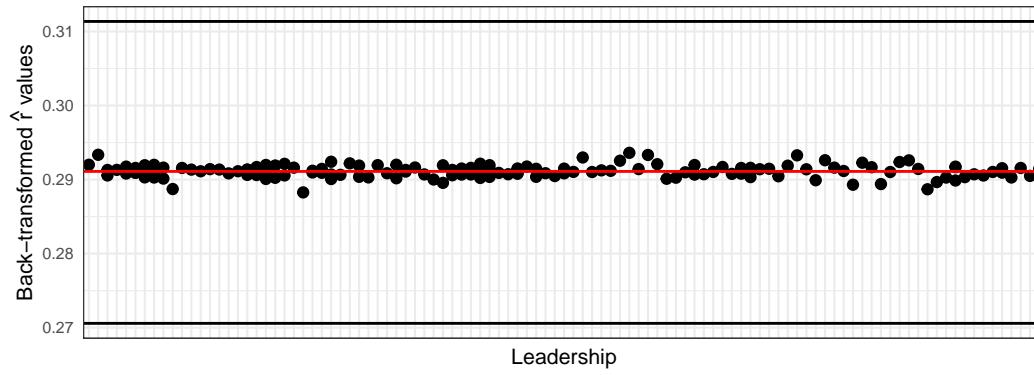
Figure

FigureS36. Judgment and mental health leave one out results



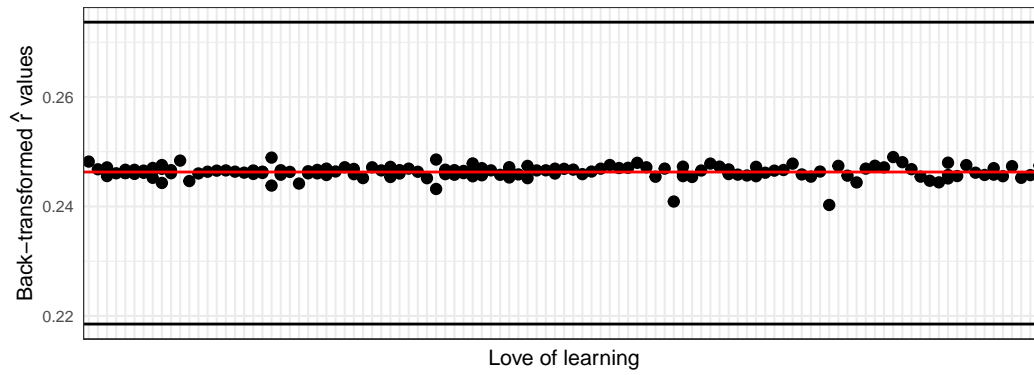
Figure

FigureS37. Kindness and mental health leave one out results



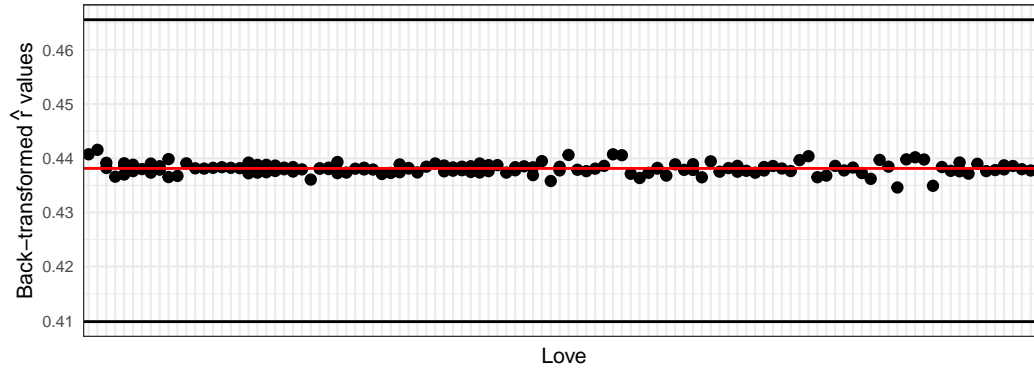
Figure

FigureS38. Leadership and mental health leave one out results



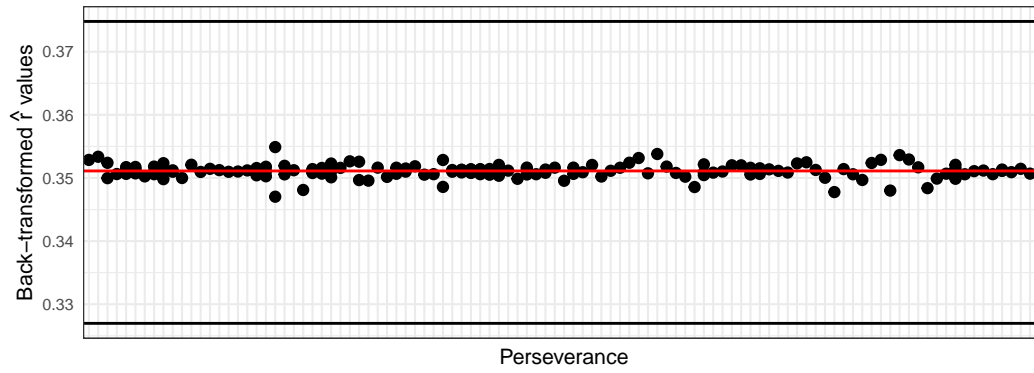
Figure

FigureS39. Love of learning and mental health leave one out results



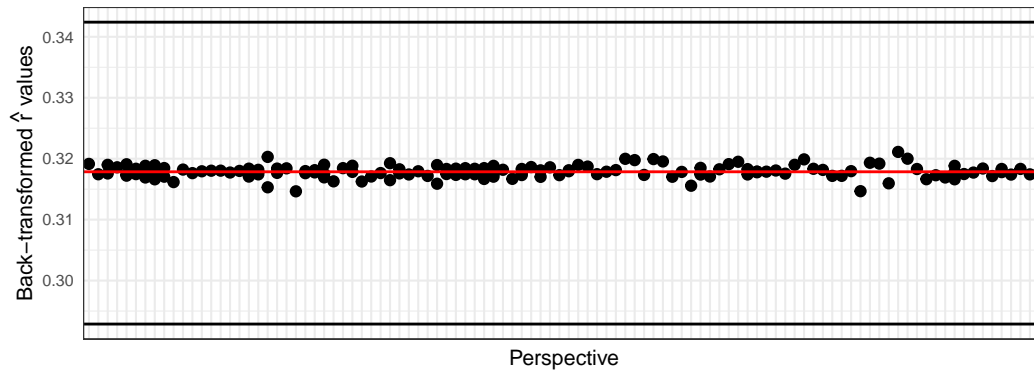
Figure

FigureS40. Love and mental health leave one out results



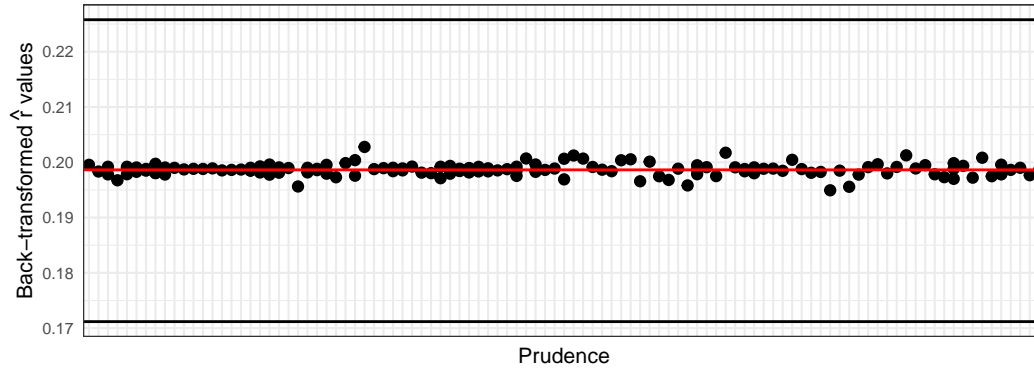
Figure

FigureS41. Perseverance and mental health leave one out results



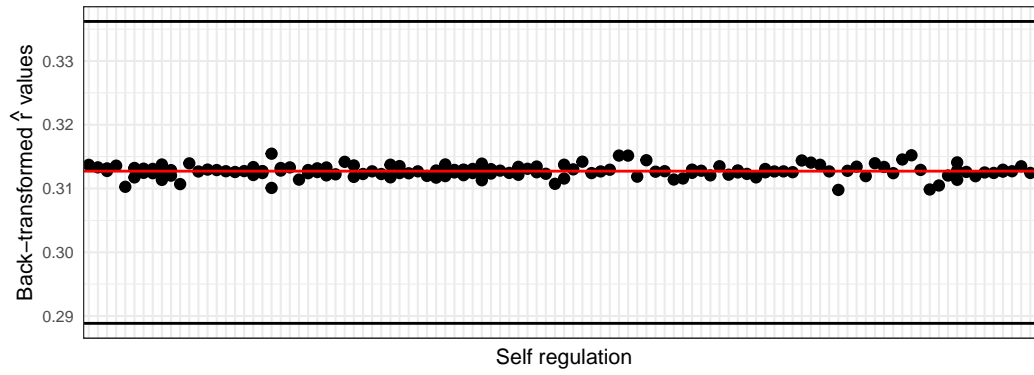
Figure

FigureS42. Perspective and mental health leave one out results



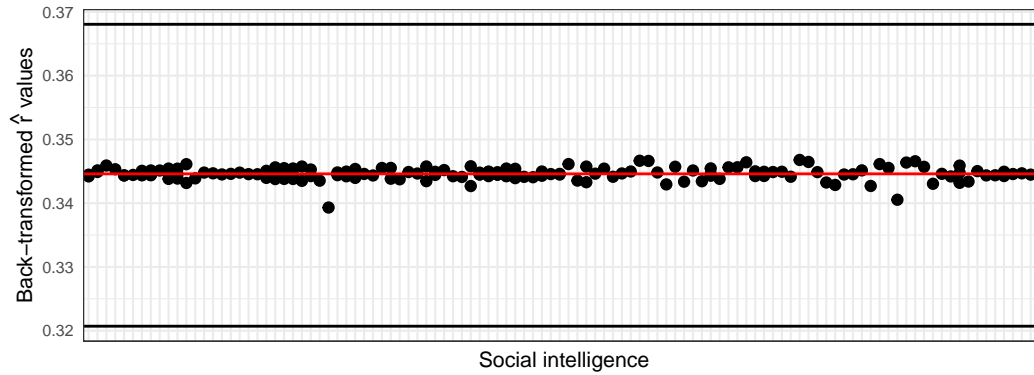
Figure

FigureS43. Prudence and mental health leave one out results



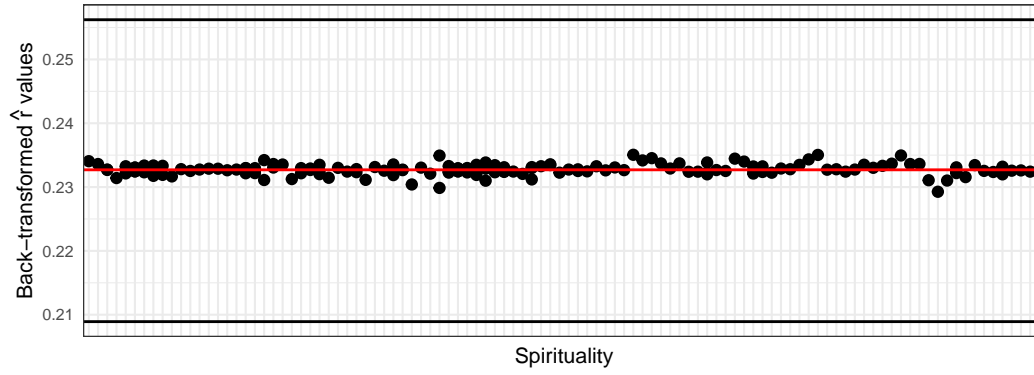
Figure

FigureS44. Self regulation and mental health leave one out results



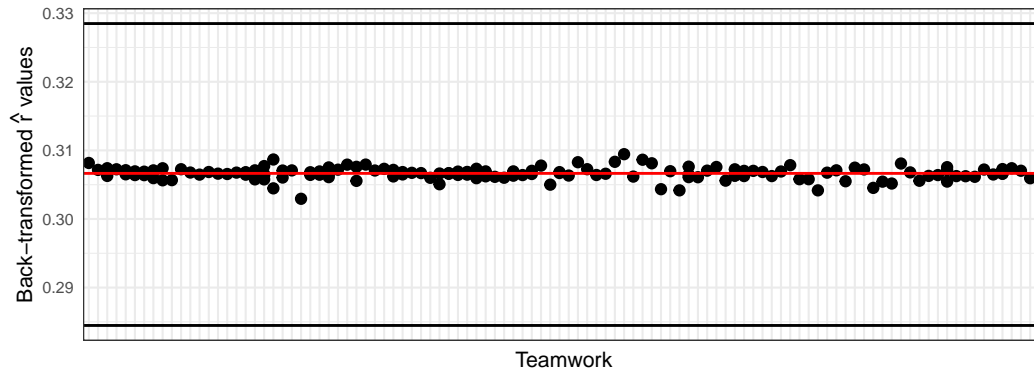
Figure

FigureS45. Social intelligence and mental health leave one out results



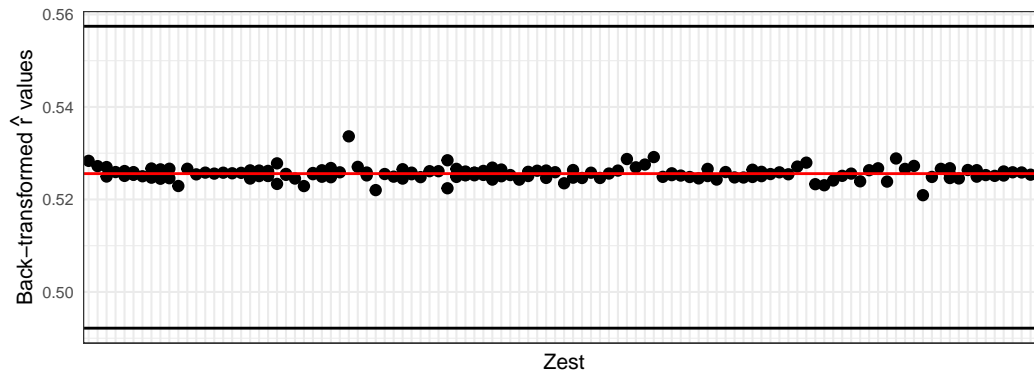
Figure

FigureS46. Spirituality and mental health leave one out results



Figure

FigureS47. Teamwork and mental health leave one out results



Figure

FigureS48. Zest and mental health leave one out results