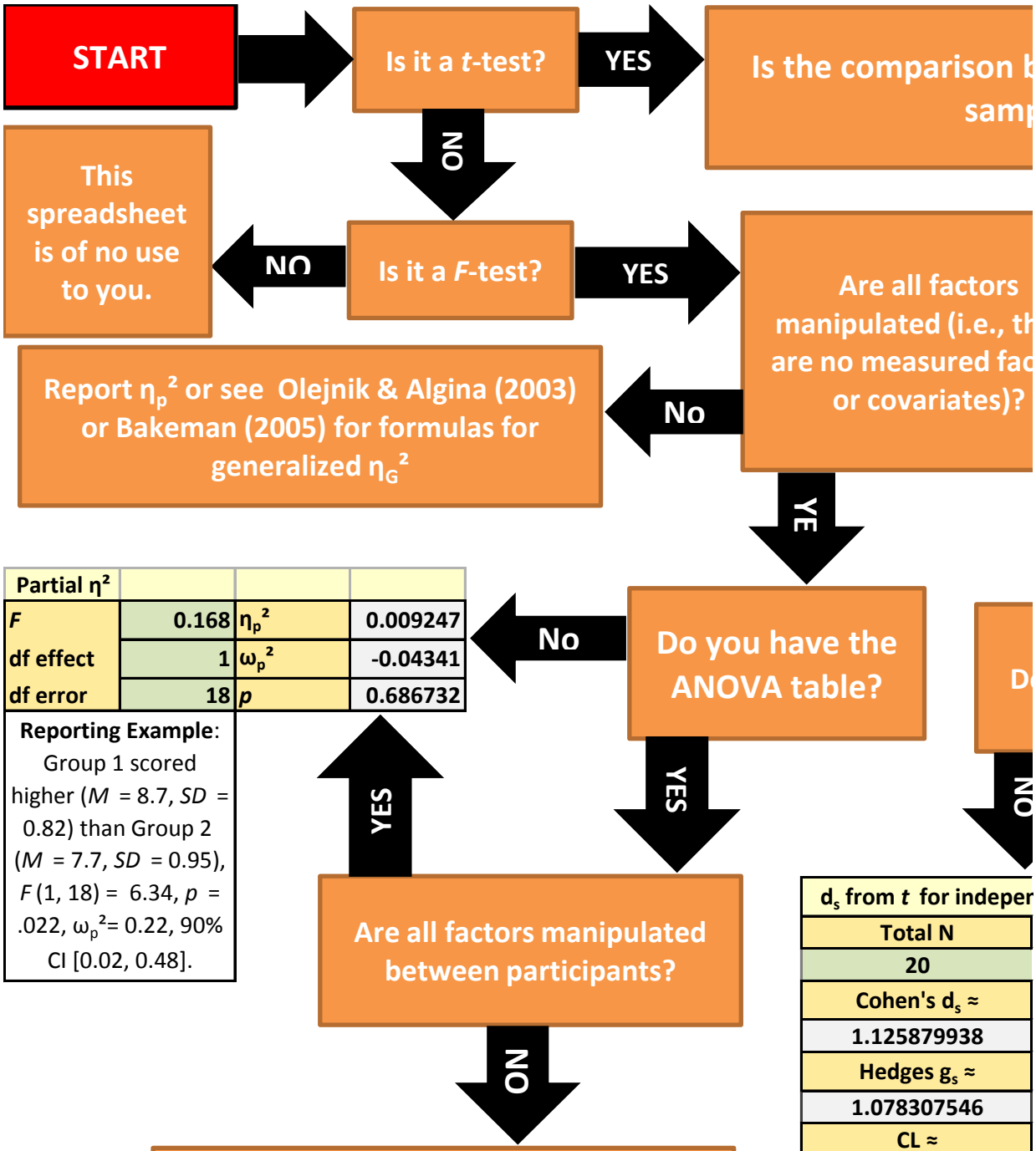
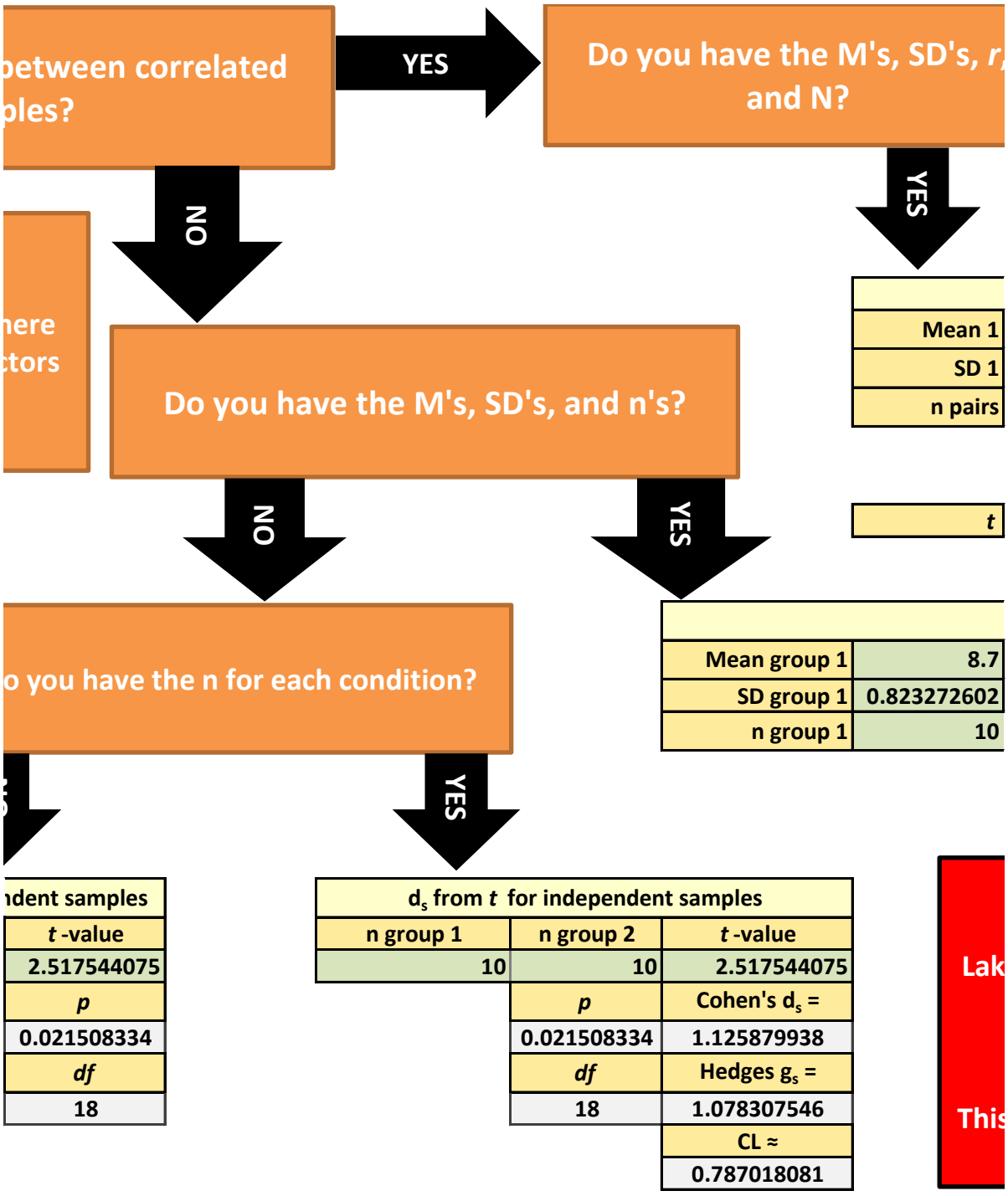

START
Is it a t-test?
YES
Is the comparison b
samp
NO
This spreadsheet is of no use to you.
NO
Is it a F-test?
YES
Are all factors manipulated (i.e., th
are no measured fac
or covariates)?
Report ηp² or see Olejnik & Algina (2003) or Bakeman (2005) for formulas for generalized ηG²
No
YE
Partial η²
F 0.168 ηp² 0.009247
df effect 1 ωp² -0.04341
df error 18 p 0.686732
No
Do you have the ANOVA table?
Reporting Example: Group 1 scored higher (M = 8.7, SD = 0.82) than Group 2 (M = 7.7, SD = 0.95), F (1, 18) = 6.34, p = .022, ωp²= 0.22, 90% CI [0.02, 0.48].
YES
YES
Are all factors manipulated between participants?
NO
ds from t for indeper
Total N
20
Cohen's ds ≈
1.125879938
Hedges gs ≈
1.078307546
CL ≈
0.787018081
Click here to go to the next sheet which will help you to calculate ηG² for the following designs:
1 Within Factor
2 Within Factors
1 Within x 1 Between Factors
2 Within x 1 Between Factors
1 Within x 2 Between Factors
For other designs report ηp²
or see Olejnik & Algina (2003) or Bakeman

or see Olejnik & Algina (2003) or Bakeman (2005)


between correlated
ples?
YES
Do you have the M's, SD's, r,
and N?
YES
NO
here
ctors
Mean 1
SD 1
n pairs
Do you have the M's, SD's, and n's?
NO
YES
t
Mean group 1 8.7
SD group 1 0.823272602
n group 1 10
o you have the n for each condition?
YES
ndent samples
t -value
2.517544075
p
0.021508334
df
18
ds from t for independent samples
n group 1 n group 2 t -value
10 10 2.517544075
p Cohen's ds =
0.021508334 1.125879938
df Hedges gs =
18 1.078307546
CL ≈
0.787018081
Lak
This

NO

d_z from t for correlated samples	
n pairs	t-value
10	4.74341649
Cohen's d_z	
1.5	
CL effect size	
0.933192799	

Correlated (or Dependent) Samples					
8.7	Mean 2	7.7	M_{diff}	1	Cohen's d_z
0.823272602	SD 2	0.948683298	S_{diff}	0.666666667	Cohen's d_{rm}
10	r	0.72554232	SE_{diff}	0.210818511	Hedges g_{rm}
			95% CI M_{diff}	0.5231	Cohen's d_{av}
			[Low; High]	1.4769	Hedges g_{av}
4.74341649	df	9	p	0.00	Recommended:
					CL effect size

Independent Samples					
Mean group 2	7.7	95% CI M_{diff}	0.165487484	Cohen's d_s	1.125879938
SD group 2	0.948683	[Low; High]	1.834512516	Cohen's d	1.186781658
n group 2	10	t	2.517544075	Hedges's g_s	1.078307546
		df	18	CL effect size	0.787018081
		p	0.0215		

Insert values in green cells. Grey cells are output.
You can cite this spreadsheet and the accompanying article as:
ens, D. (2013). Calculating and reporting effect sizes to facilitate cumulati
A practical primer for t-tests and ANOVAs. *Frontiers in Psychology, 4:8*
doi:10.3389/fpsyg.2013.00863
For comments, contact me at D.Lakens@tue.nl
s is version 3.4. For updates, check: http://opensciencefframework.org/pro
or follow me @Lakens

Data for two groups of observations used as the example results.

	Group 1	Group 2
	9.00	9.00
	7.00	6.00
	8.00	7.00
	9.00	8.00
	8.00	7.00
	9.00	9.00
	9.00	8.00
	10.00	8.00
	9.00	8.00

	9.00	7.00
M	8.70	7.70
SD	0.82	0.95

1.5
1.111332336
1.016075279
1.125879938
1.029375943
Gav
0.933192799

Reporting Example: Mean 1 was higher (M = 8.7, SD = 0.82) than Mean 2 (M = 7.7, SD = 0.95), t (9) = 4.74, p = .001, 95% CI [0.52, 1.48], Hedges's g_{av} = 1.03 95% CI [0.50, 1.72]. The CL effect size indicates that after controlling for individual differences, the likelihood that a person scores higher for Mean 1 than for Mean 2 is 93%.

Reporting Example: Group 1 scored higher (M = 8.7, SD = 0.82) than Group 2 (M = 7.7, SD = 0.95), t (18) = 2.52, p = .022, 95% CI [0.17, 1.83], Hedges's g_s = 1.08, 95% CI [0.13, 2.01]. The CL effect size indicates that the chance that for a randomly selected pair of individuals the score of a person from Group 1 is higher than the score of a person from group 2 is 79%.

ve science:
863.

oject/ixGcd

basis for the

Difference
0.00
1.00
1.00
1.00
1.00
0.00
1.00
2.00
1.00

2.00
1.00
0.67

Find the correct design by scrolling to the right. Insert values in green cells. Look at the example SPSS output to see which Sum of Squares and Mean Squares you need to insert. For additional information, read Bakeman (2005) or Olejnik & Algina (2003)

(P; withir

Tests of Within-Subjects Effects

Measure: MEASURE_1

Source		Type III Sum of Squares	df	Mean Square
WithinFactor1	Sphericity Assumed	40.613	1	40.613
	Greenhouse-Geisser	40.613	1.000	40.613
	Huynh-Feldt	40.613	1.000	40.613
	Lower-bound	40.613	1.000	40.613
Error(WithinFactor1)	Sphericity Assumed	74.888	39	1.920
	Greenhouse-Geisser	74.888	39.000	1.920
	Huynh-Feldt	74.888	39.000	1.920
	Lower-bound	74.888	39.000	1.920

Tests of Between-Subjects Effects

Measure: MEASURE_1

Source	Type III Sum of Squares	df	Mean Square	F
Intercept	2820.313	1	2820.313	2806.818
Error	39.188	39	1.005	

ı) Design

F	Sig.	Partial Eta Squared
21.150	.000	.352
21.150	.000	.352
21.150	.000	.352
21.150	.000	.352

Sig.	Partial Eta Squared
.000	.986

η_G^2 for (P; within)	
Main Within	
SS_P	MS_P
40.6125	40.6125
SS_{Ps}	MS_{Ps}
74.8875	1.920192
SS_s	MS_s
39.1875	1.004808
F-ratio	*df effect*
21.15023	1
η_G^2	*N*
0.26255	40
η_p^2	ω_p^2
0.35162	0.334998
η^2	ω^2
0.26255	0.248518

Measure: MEASUR

Source
WithinFactor1
WithinFactor1 * BetweenFactor
Error(WithinFactor 1)

Measure: MEASUR

Source
Intercept
BetweenFactor
Error

(A; between) X (P; within) Design

Tests of Within-Subjects Effects

E_1

	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Sphericity Assumed	40.613	1	40.613	61.059	.000	.616
Greenhouse-Geisser	40.613	1.000	40.613	61.059	.000	.616
Huynh-Feldt	40.613	1.000	40.613	61.059	.000	.616
Lower-bound	40.613	1.000	40.613	61.059	.000	.616
Sphericity Assumed	49.613	1	49.613	74.591	.000	.662
Greenhouse-Geisser	49.613	1.000	49.613	74.591	.000	.662
Huynh-Feldt	49.613	1.000	49.613	74.591	.000	.662
Lower-bound	49.613	1.000	49.613	74.591	.000	.662
Sphericity Assumed	25.275	38	.665			
Greenhouse-Geisser	25.275	38.000	.665			
Huynh-Feldt	25.275	38.000	.665			
Lower-bound	25.275	38.000	.665			

Tests of Between-Subjects Effects

E_1

Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
2820.313	1	2820.313	4488.874	.000	.992
15.313	1	15.313	24.372	.000	.391
23.875	38	.628			

η_G^2 for (A; between) X (P; within)		
Main Between	***Main Within***	***Interaction***
SS_A	SS_P	SS_{PA}
15.3125	**40.6125**	**49.6125**
$SS_{s/A}$	$SS_{Ps/A}$	
23.875	**25.275**	
MS_A	MS_P	MS_{PA}
15.3125	**40.6125**	**49.6125**
$MS_{s/A}$	$MS_{Ps/A}$	
0.628289474	**0.665131579**	
df_A	df_P	df_{PA}
1	**1**	**1**
F-ratio	***F-ratio***	***F-ratio***
24.37172775	**61.05934718**	**74.59050445**
η_G^2	η_G^2	η_G^2
0.23754	**0.45244**	**0.50234**
η_p^2	η_p^2	η_p^2
0.39075	**0.61639**	**0.66249**
η^2	η^2	η^2
0.39075	**0.35162**	**0.42955**

Tests of Wi

Measure: MEASURE_1

Source		Type III Sum of Squares
WithinFactor1	Sphericity Assumed	124.256
	Greenhouse-Geisser	124.256
	Huynh-Feldt	124.256
	Lower-bound	124.256
Error(WithinFactor1)	Sphericity Assumed	27.494
	Greenhouse-Geisser	27.494
	Huynh-Feldt	27.494
	Lower-bound	27.494
WithinFactor2	Sphericity Assumed	13.806
	Greenhouse-Geisser	13.806
	Huynh-Feldt	13.806
	Lower-bound	13.806
Error(WithinFactor2)	Sphericity Assumed	126.944
	Greenhouse-Geisser	126.944
	Huynh-Feldt	126.944
	Lower-bound	126.944
WithinFactor1 * WithinFactor2	Sphericity Assumed	28.056
	Greenhouse-Geisser	28.056
	Huynh-Feldt	28.056
	Lower-bound	28.056
Error(WithinFactor1*WithinFactor2)	Sphericity Assumed	23.694
	Greenhouse-Geisser	23.694
	Huynh-Feldt	23.694
	Lower-bound	23.694

Tests of Between-

Measure: MEASURE_1

Source	Type III Sum of Squares	df
Intercept	7439.256	1

Error	27.494	39

(P; within) X (Q; Within) Design

thin-Subjects Effects

df	Mean Square	F	Sig.	Partial Eta Squared
1	124.256	176.258	.000	.819
1.000	124.256	176.258	.000	.819
1.000	124.256	176.258	.000	.819
1.000	124.256	176.258	.000	.819
39	.705			
39.000	.705			
39.000	.705			
39.000	.705			
1	13.806	4.242	.046	.098
1.000	13.806	4.242	.046	.098
1.000	13.806	4.242	.046	.098
1.000	13.806	4.242	.046	.098
39	3.255			
39.000	3.255			
39.000	3.255			
39.000	3.255			
1	28.056	46.181	.000	.542
1.000	28.056	46.181	.000	.542
1.000	28.056	46.181	.000	.542
1.000	28.056	46.181	.000	.542
39	.608			
39.000	.608			
39.000	.608			
39.000	.608			

Subjects Effects

Mean Square	F	Sig.	Partial Eta Squared
7439.256	10552.616	.000	.996

η_G^2 for (P; within) X

Main Within P	*Main Within Q*
SS_P	SS_Q
124.25625	13.80625
SS_{Ps}	SS_{Qs}
27.49375	126.94375
MS_P	MS_Q
124.25625	13.80625
MS_{Ps}	MS_{Qs}
0.704967949	3.254967949
F-ratio	*F-ratio*
176.2580132	4.241593225
η_G^2	η_G^2
0.37667	0.06292
η_p^2	η_p^2
0.81882	0.09809
η^2	η^2
0.33425	0.03714

.705				

(Q; within)	
Interaction	***Between***
SS_{PQ}	SS_{s}
28.05625	**27.49375**
SS_{PQs}	
23.69375	
MS_{PQ}	
28.05625	
MS_{PQs}	
0.607532051	
F-ratio	
46.18069111	
η_{G}^{2}	
0.12006	
η_{p}^{2}	
0.54215	
η^{2}	
0.07547	

Tests of Within-Subjects Effects

Measure: MEASURE_1

Source		Type III Sum of Squares	df	Mean Square
WithinFactor1	Sphericity Assumed	124.256	1	124.256
	Greenhouse-Geisser	124.256	1.000	124.256
	Huynh-Feldt	124.256	1.000	124.256
	Lower-bound	124.256	1.000	124.256
WithinFactor1 * BetweenFactor	Sphericity Assumed	9.506	1	9.506
	Greenhouse-Geisser	9.506	1.000	9.506
	Huynh-Feldt	9.506	1.000	9.506
	Lower-bound	9.506	1.000	9.506
Error(WithinFactor 1)	Sphericity Assumed	17.988	38	.473
	Greenhouse-Geisser	17.988	38.000	.473
	Huynh-Feldt	17.988	38.000	.473
	Lower-bound	17.988	38.000	.473
WithinFactor2	Sphericity Assumed	13.806	1	13.806
	Greenhouse-Geisser	13.806	1.000	13.806
	Huynh-Feldt	13.806	1.000	13.806
	Lower-bound	13.806	1.000	13.806
WithinFactor2 * BetweenFactor	Sphericity Assumed	97.656	1	97.656
	Greenhouse-Geisser	97.656	1.000	97.656
	Huynh-Feldt	97.656	1.000	97.656
	Lower-bound	97.656	1.000	97.656
Error(WithinFactor 2)	Sphericity Assumed	29.288	38	.771
	Greenhouse-Geisser	29.288	38.000	.771
	Huynh-Feldt	29.288	38.000	.771
	Lower-bound	29.288	38.000	.771
WithinFactor1 * WithinFactor2	Sphericity Assumed	28.056	1	28.056
	Greenhouse-Geisser	28.056	1.000	28.056
	Huynh-Feldt	28.056	1.000	28.056
	Lower-bound	28.056	1.000	28.056
WithinFactor1 * WithinFactor2 *	Sphericity Assumed	.006	1	.006

BetweenFactor	Greenhouse-Geisser	.006	1.000	.006
	Huynh-Feldt	.006	1.000	.006
	Lower-bound	.006	1.000	.006
Error(WithinFactor 1*WithinFactor2)	Sphericity Assumed	23.688	38	.623
	Greenhouse-Geisser	23.688	38.000	.623
	Huynh-Feldt	23.688	38.000	.623
	Lower-bound	23.688	38.000	.623

Tests of Between-Subjects Effects

Measure: MEASURE_1

Source	Type III Sum of Squares	df	Mean Square	F
Intercept	7439.256	1	7439.256	13156.102
BetweenFactor	6.006	1	6.006	10.622
Error	21.488	38	.565	

(A; Between) X (P; within) X (Q; Within) Design		
F	Sig.	Partial Eta Squared
262.501	.000	.874
262.501	.000	.874
262.501	.000	.874
262.501	.000	.874
20.083	.000	.346
20.083	.000	.346
20.083	.000	.346
20.083	.000	.346
17.913	.000	.320
17.913	.000	.320
17.913	.000	.320
17.913	.000	.320
126.707	.000	.769
126.707	.000	.769
126.707	.000	.769
126.707	.000	.769
45.008	.000	.542
45.008	.000	.542
45.008	.000	.542
45.008	.000	.542
.010	.921	.000

η_G^2 for		
Main Between A	***Main Within P***	***Interaction P A***
SS_A	SS_P	SS_{PA}
6.00625	**124.25625**	**9.50625**
$SS_{s/A}$	$SS_{Ps/A}$	
21.4875	**17.9875**	
MS_A	MS_P	MS_{PA}
6.00625	**124.25625**	**9.50625**
$MS_{s/A}$	$MS_{Ps/A}$	
0.565460526	**0.473355263**	
F-ratio	***F-ratio***	***F-ratio***
10.62187318	**262.5010424**	**20.08269632**
η_G^2	η_G^2	η_G^2
0.0610	**0.5734**	**0.0932**
η_p^2	η_p^2	η_p^2
0.218458741	**0.873544532**	**0.3457604**

.010	.921	.000
.010	.921	.000
.010	.921	.000

Sig.	Partial Eta Squared
.000	.997
.002	.218

(A; between) X (P; within)			
Main Within Q	***Interaction Q A***	***Interaction P Q***	***Three-Way A P Q***
SS_Q	SS_{QA}	SS_{PQ}	SS_{PQA}
13.80625	**97.65625**	**28.05625**	**0.00625**
$SS_{Qs/A}$		$SS_{PQs/A}$	
29.2875		**23.6875**	
MS_Q	MS_{QA}	MS_{PQ}	MS_{PQA}
13.80625	**97.65625**	**28.05625**	**0.00625**
$MS_{Qs/A}$		$MS_{PQs/A}$	
0.770723684		**0.623355263**	
F-ratio	***F-ratio***	***F-ratio***	***F-ratio***
17.91335894	**126.707213**	**45.00844327**	**0.010026385**
η_G^2	η_G^2	η_G^2	η_G^2
0.1299	**0.1423**	**0.2328**	**0.0001**
η_p^2	η_p^2	η_p^2	η_p^2
0.320377085	**0.769287578**	**0.542215243**	**0.000263783**

Measure: MEASUR

Source
WithinFactor1
WithinFactor1 * BetweenFactor1
WithinFactor1 * BetweenFactor2
WithinFactor1 * BetweenFactor1 * BetweenFactor2
Error(WithinFactor 1)

Measure: MEASUR

Source
Intercept
BetweenFactor1
BetweenFactor2
BetweenFactor1 * BetweenFactor2
Error

(A; Between)

Tests of Within-Subjects Effects

E_1

	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Sphericity Assumed	40.613	1	40.613	60.540	.000	.627
Greenhouse-Geisser	40.613	1.000	40.613	60.540	.000	.627
Huynh-Feldt	40.613	1.000	40.613	60.540	.000	.627
Lower-bound	40.613	1.000	40.613	60.540	.000	.627
Sphericity Assumed	49.613	1	49.613	73.957	.000	.673
Greenhouse-Geisser	49.613	1.000	49.613	73.957	.000	.673
Huynh-Feldt	49.613	1.000	49.613	73.957	.000	.673
Lower-bound	49.613	1.000	49.613	73.957	.000	.673
Sphericity Assumed	.113	1	.113	.168	.685	.005
Greenhouse-Geisser	.113	1.000	.113	.168	.685	.005
Huynh-Feldt	.113	1.000	.113	.168	.685	.005
Lower-bound	.113	1.000	.113	.168	.685	.005
Sphericity Assumed	1.013	1	1.013	1.509	.227	.040
Greenhouse-Geisser	1.013	1.000	1.013	1.509	.227	.040
Huynh-Feldt	1.013	1.000	1.013	1.509	.227	.040
Lower-bound	1.013	1.000	1.013	1.509	.227	.040
Sphericity Assumed	24.150	36	.671			
Greenhouse-Geisser	24.150	36.000	.671			
Huynh-Feldt	24.150	36.000	.671			
Lower-bound	24.150	36.000	.671			

Tests of Between-Subjects Effects

E_1

Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
2820.313	1	2820.313	4668.103	.000	.992
15.313	1	15.313	25.345	.000	.413
.013	1	.013	.021	.886	.001
2.113	1	2.113	3.497	.070	.089
21.750	36	.604			

X (B; Between) X (P; Within) Design				
			η_G^2 for (A; between) X (P; within)	
Main Between A	***Main Between B***	***Interaction A X B***	***Main Within***	***Interaction A X P***
SS_A	SS_B	SS_{AB}	SS_P	SS_{PA}
15.3125	0.0125	2.1125	40.6125	49.6125
$SS_{s/AB}$				
21.75				
MS_A	MS_P	MS_Q	MS_P	MS_{PA}
15.3125	0.0125	2.1125	40.6125	49.6125
$MS_{s/AB}$				
0.604166667				0.6
F-ratio	***F-ratio***	***F-ratio***	***F-ratio***	***F-ratio***
25.34482759	0.020689655	3.496551724	60.54037267	73.95652174
η_G^2	η_G^2	η_G^2	η_G^2	η_G^2
0.25015	0.00027	0.04400	0.46944	0.51943
η_p^2	η_p^2	η_p^2	η_p^2	η_p^2
0.41315	0.00057	0.08853	0.62710	0.67260

Interaction P X B	Three-Way P X A X B
SS_{PB}	SS_{PAB}
0.1125	1.0125
$SS_{Ps/AB}$	
24.15	
MS_{PB}	MS_{PAB}
0.1125	1.0125
$MS_{Ps/AB}$	
570833333	
F-ratio	F-ratio
0.167701863	1.50931677
η_G^2	η_G^2
0.00244	0.02158
η_p^2	η_p^2
0.00464	0.04024