

A systematic review of Null Hypothesis Significance Testing,  
sample sizes and statistical power in research using  
the Implicit Relational Assessment Procedure

*Supplementary Materials*

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**Systematic review full text exclusions with reasons**

Publications by Baker et al. (2015), Baker et al. (2017), Smith et al. (2022) and Szarko et al. (2022) each reported employing an IRAP but did not report the procedural features in sufficient detail to determine whether it was a standard IRAP or a variant. Personal correspondence with the authors revealed these studies employed a non-standard IRAP variant. Following the inclusion criteria, these studies were therefore excluded.

Inspection of the full text of Perez et al. (2020) demonstrated that those studies did not employ an IRAP (or IRAP variant).

Inspection of the full texts of four articles by Harte and colleagues (Harte, Barnes-Holmes, et al., 2021; Harte, Barnes-Holmes, et al., 2021; Harte et al., 2018, 2020)(2018, 2020, 2021a, 2021b) demonstrated that those studies employed a Training IRAP (T-IRAP) rather than a standard IRAP. Following the inclusion criteria, these studies were therefore excluded.

**Tables**

**Table S1.** Number of sample sizes in the Social and Personality psychology dataset by journal

Journal	<i>N</i> sample sizes
European Journal of Personality	113
European Journal of Social Psychology	306
Journal of European Social Psychology	589
Journal of Personality	189
Journal of Personality and Social Psychology	631
Journal Research in Personality	157
Psychological Science (articles coded as relevant to Social Psychology)	269
Personality and Social and Psychology Bulletin	527
Social Psychological and Personality Science	266

**Table S2.** Median sample size per year in IRAP studies

Calculated from	Year																
	'06	'07	'08	'09	'10	'11	'12	'13	'14	'15	'16	'17	'18	'19	'20	'21	'22
Participants per study	14 (4)	36 (1)	12 (1)	29 (10)	19 (13)	64 (5)	28 (6)	41 (7)	32 (9)	41 (16)	44 (28)	32 (17)	44 (15)	37 (19)	50 (16)	41 (11)	64 (7)
Participants per group in studies with between-subjects comparisons	15 (1)	12 (1)	6 (1)	13 (9)	11 (6)	17 (3)	15 (3)	21 (5)	14 (8)	18 (12)	20 (22)	16 (11)	22 (9)	19 (10)	24 (12)	19 (7)	30 (5)

This table corresponds with Figure 2. The number of studies each median is calculated from is listed in brackets.

**Table S3.** The statistical power to detect the average published effect size (Cohen's  $d = 0.408$  or Pearson's  $r = 0.20$ ) implied by median sample size per group per year in IRAP studies

Year																
'06	'07	'08	'09	'10	'11	'12	'13	'14	'15	'16	'17	'18	'19	'20	'21	'22
19	16	10	17	15	21	19	25	18	22	24	20	26	23	28	23	34

This table corresponds with Figure 3.

**Table S4.** Median sample size per year in IRAP studies compared to Social and Personality Psychology studies

	Year																
	'06	'07	'08	'09	'10	'11	'12	'13	'14	'15	'16	'17	'18	'19	'20	'21	'22
Social and Personality research	-	-	-	-	-	103 (314)	98 (304)	130 (316)	124 (297)	153 (390)	156 (327)	221 (344)	227 (402)	251 (353)	-	-	-
IRAP research	44 (1)	36 (1)	12 (1)	26 (9)	22 (6)	64 (3)	30 (3)	41 (5)	36 (8)	43 (12)	48 (22)	32 (11)	49 (9)	46 (10)	53 (12)	37 (7)	64 (5)

This table corresponds with Figure 4. The number of studies each median is calculated from is listed in brackets.

**Table S5.** The statistical power to detect the average published effect size (Cohen's  $d = 0.408$  or Pearson's  $r = 0.20$ ) implied by median sample size per study per year in IRAP studies compared to Social and Personality Psychology studies

	Year																
	'06	'07	'08	'09	'10	'11	'12	'13	'14	'15	'16	'17	'18	'19	'20	'21	'22
Social and Personality research	-	-	-	-	-	53	51	63	61	70	71	85	86	89	-	-	-
IRAP research	26	22	10	17	15	36	19	24	22	25	28	20	28	27	30	22	36

This table corresponds with Figure 5.

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