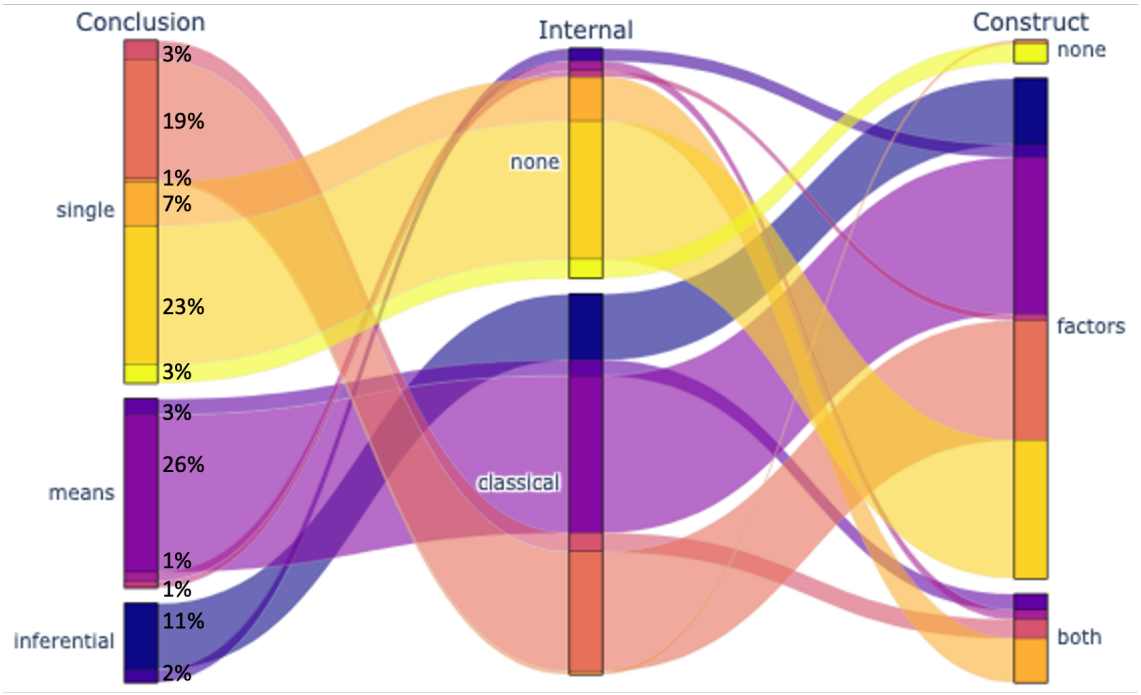

Figure 3: Distribution of experiments' implications.

Description of values

	Value	Description
Conclusion	Single	Single datapoints comparison
	Means	Means comparison
	Inferential	Inferential statistics
Internal	None	No sources of randomness considered
	Classical	Classical sources of randomness considered
	All	All (other than classical) sources of randomness considered
Construct	None	Neither factors nor treatments described
	Factors	Factors completely described but not treatments
	Both	Both factors and treatments completely described

Summary of experimental validity

Conclusion	Internal	Construct	Count	Percentage
single	none	none	6	3%
single	none	factors	44	23%
single	none	both	14	7%
single	classical	none	1	1%
single	classical	factors	38	19%
single	classical	both	6	3%
single	all	none	0	0%
single	all	factors	0	0%
single	all	both	0	0%
means	none	none	0	0%
means	none	factors	2	1%
means	none	both	3	1%
means	classical	none	0	0%
means	classical	factors	50	26%
means	classical	both	5	3%
means	all	none	0	0%
means	all	factors	0	0%
means	all	both	0	0%
inferential	none	none	0	0%
inferential	none	factors	4	2%
inferential	none	both	0	0%
inferential	classical	none	0	0%
inferential	classical	factors	21	11%
inferential	classical	both	0	0%
inferential	all	none	0	0%
inferential	all	factors	0	0%
inferential	all	both	0	0%

Experimental validity

Venue	Paper #	Experiment	Conclusion	Internal	Construct
ICSE	AP1	E1	single	none	factors
		E2	single	classical	factors
		E3	means	classical	factors
		E4	inferential	none	factors
ICSE	AP2	E1	inferential	none	factors
ICSE	AP3	E1	single	classical	factors
		E2	single	classical	factors
		E3	single	classical	factors
ICSE	AP4	E1	single	none	both
		E2	single	none	factors
ICSE	AP5	E1	single	none	factors
		E2	single	none	factors
		E3	single	none	factors
		E4	single	none	none
ICSE	AP6	E1	means	none	both
		E2	means	classical	factors
		E3	means	classical	factors
		E4	means	classical	factors
		E5	single	none	factors
ICSE	AP7	E1	single	none	both
		E2	single	classical	factors
		E3	single	none	factors
ICSE	AP8	E1	single	none	factors
		E2	single	none	factors
		E3	single	none	factors
		E4	single	none	factors
ICSE	AP9	E1	single	none	factors
		E2	single	none	factors
ICSE	AP10	E1	single	none	factors
		E2	inferential	classical	factors
		E3	means	classical	factors
		E4	means	classical	factors
ICSE	AP11	E1	inferential	none	factors
		E2	inferential	none	factors
ICSE	AP12	E1	single	classical	factors
		E2	means	classical	factors
		E3	means	classical	factors
		E4	single	classical	factors
ICSE	AP13	E1	means	classical	both
		E2	means	classical	factors
		E3	means	classical	factors
		E4	means	classical	factors
		E5	means	classical	factors
ICSE	AP14	E1	single	classical	both
		E2	single	classical	factors
		E3	single	none	factors

Experimental validity

Venue	Paper #	Experiment	Conclusion	Internal	Construct
ICSE	AP15	E1	means	classical	factors
		E2	means	classical	factors
		E3	means	classical	factors
ICSE	AP16	E1	single	classical	factors
		E2	single	classical	factors
		E3	single	classical	factors
		E4	single	classical	both
		E5	inferential	classical	factors
ICSE	AP17	E1	single	classical	both
		E2	single	classical	factors
		E3	single	classical	factors
ICSE'21	AP18	E1	single	classical	factors
ICSE'21	AP19	E1	means	classical	factors
ICSE'21	AP20	E1	single	none	both
		E2	single	classical	factors
		E3	single	classical	factors
ICSE'21	AP21	E1	single	none	factors
ICSE'21	AP22	E1	single	classical	both
		E2	single	classical	factors
		E3	single	classical	factors
		E4	single	classical	factors
		E5	single	classical	factors
ICSE'21	AP24	E1	single	none	factors
		E2	single	none	factors
		E3	single	none	factors
		E4	single	none	factors
		E5	single	none	factors
		E6	single	none	factors
ICSE'21	AP23	E1	means	classical	factors
		E2	means	classical	factors
		E3	means	classical	factors
		E4	means	classical	factors
FSE'18	AP25	E1	single	classical	none
		E2	means	classical	factors
		E3	means	classical	factors
FSE'18	AP26	E1	single	none	none
		E2	single	none	factors
		E3	single	none	factors
		E4	single	none	factors
FSE'18	AP27	E1	single	none	factors
FSE'18	AP28	E1	single	none	factors
		E2	means	none	factors
		E3	single	none	factors
FSE'19	AP29	E1	means	classical	factors
FSE'19	AP30	E1	single	none	none
		E2	means	classical	factors
		E3	means	classical	factors
FSE'19	AP31	E1	single	classical	factors
		E2	single	classical	factors

Experimental validity

Venue	Paper #	Experiment	Conclusion	Internal	Construct
FSE'19	AP32	E1	inferential	classical	factors
		E2	inferential	classical	factors
		E3	inferential	classical	factors
FSE'20	AP33	E1	single	classical	factors
		E2	single	classical	factors
		E3	single	none	factors
FSE'20	AP34	E1	single	classical	factors
		E2	single	none	factors
FSE'20	AP35	E1	single	none	none
		E2	inferential	classical	factors
FSE'20	AP36	E1	means	classical	factors
		E2	single	none	factors
		E3	single	none	both
		E4	single	classical	factors
FSE'20	AP37	E1	single	none	none
		E2	means	classical	factors
		E3	single	none	factors
		E4	single	none	both
FSE'20	AP38	E1	single	none	none
		E2	means	classical	factors
		E3	means	classical	factors
		E4	means	classical	factors
		E5	means	classical	factors
		E6	single	none	factors
FSE'21	AP42	E1	single	classical	factors
		E2	single	classical	factors
		E3	single	classical	factors
FSE'21	AP43	E1	single	classical	factors
		E2	single	none	both
		E3	single	none	factors
		E4	single	none	both
FSE'21	AP40	E1	single	none	factors
		E2	single	none	factors
		E3	single	none	factors
		E4	single	none	factors
		E5	means	none	both
FSE'21	AP41	E1	single	none	both
		E2	single	classical	factors
		E3	single	none	factors
		E4	single	classical	factors
		E5	single	none	factors
		E6	single	none	factors
		E7	single	classical	both
FSE'21	AP44	E1	means	classical	factors
FSE'21	AP45	E1	inferential	classical	factors
		E2	means	classical	both
		E3	inferential	classical	factors
		E6	means	classical	factors

Experimental validity

Venue	Paper #	Experiment	Conclusion	Internal	Construct
FSE'21	AP39	E1	single	classical	factors
		E2	means	classical	factors
		E3	means	classical	factors
		E4	means	classical	factors
		E5	means	classical	factors
		E6	single	none	both
		E7	single	none	factors
		E8	means	none	factors
TSE'19	AP46	E1	single	none	both
		E2	inferential	classical	factors
		E3	inferential	classical	factors
		E4	inferential	classical	factors
		E5	inferential	classical	factors
		E6	inferential	classical	factors
TSE'20	AP47	E1	single	none	both
		E2	means	classical	factors
		E3	means	classical	factors
		E4	means	classical	factors
TSE'20	AP48	E1	single	none	both
		E2	single	none	both
		E3	inferential	classical	factors
		E4	inferential	classical	factors
		E5	inferential	classical	factors
		E6	inferential	classical	factors
TSE'20	AP49	E1	single	none	both
		E2	single	classical	factors
		E3	single	classical	factors
		E4	inferential	classical	factors
TSE'21	AP50	E1	means	classical	factors
		E2	means	classical	factors
		E3	means	classical	both
		E4	single	none	factors
		E5	means	none	both
TSE'21	AP51	E1	single	classical	both
		E2	single	classical	factors
		E3	single	classical	factors
TSE'21	AP52	E1	means	classical	factors
		E2	means	classical	factors
		E3	means	classical	factors
		E4	inferential	classical	factors
		E5	means	classical	factors
		E6	means	classical	factors
TSE'21	AP55	E1	means	classical	factors
		E2	means	classical	factors
		E3	means	classical	factors
TSE'21	AP54	E1	single	none	factors
		E2	single	classical	factors

Experimental validity

Venue	Paper #	Experiment	Conclusion	Internal	Construct
TSE'21	AP53	E1	inferential	classical	factors
		E2	inferential	classical	factors
		E3	means	classical	both
		E4	means	classical	both