



SOM INSTITUTE
SOCIETY OPINION MEDIA



IMPACT OF SAMPLING STRATEGIES ON EXPERIMENTAL TREATMENT EFFECTS

ALEXANDRA GARCIA NILSSON
SOPHIE CASSEL
SEBASTIAN LUNDMARK

Background and aim

- In the past 10 years, a replication crisis has emerged in the scientific community, when large multilab projects have attempted to replicate well-known experiments.
- Part of the replication crisis problem may be the use of self-selected online panels by these multilab projects, as opposed to sampling methods that yield more accurate level estimates (and involve random selection).
- Hence, our aim was to test how the outcomes of three well-known psychological experiments may be affected by two different samples and two different stratification techniques:
 - Self-selected sample (un-stratified)
 - Self-selected sample (stratified on sex, age, and education)
 - Probability-based sample (un-stratified)
 - Probability-based sample (stratified on sex, age, and education)

The three experiments

✓ Inclusion criteria for the experiments:

- ✓ Easy to administer online
- ✓ Successfully replicated in Many Labs 1 or in Many Labs 2

I. *Gain versus loss framing (Tversky & Kahneman, 1981)*

- The probabilistic outcome more common when programs are presented in negative terms.

II. *The framing of decisions and the psychology of choice (Tversky & Kahneman, 1981)*

- More probable to go to make an effort when the sale as percentage of the original price is larger

III. *Why people are reluctant to tempt fate (Risen & Gilovich, 2008)*

- More likely to be selected to answer the question when tempting fate

The Swedish Citizen Panel (SCP)

- Non-commercial and non-incentive-based web panel at the SOM institute at the University of Gothenburg
- 74 000 panelists in total
- 57 000 in self-selected panel
 - Primarily recruited from a vote compass in one of the biggest newspapers in Sweden
- 17 000 in probability selected panel
 - Recruited through periodical postal invitations



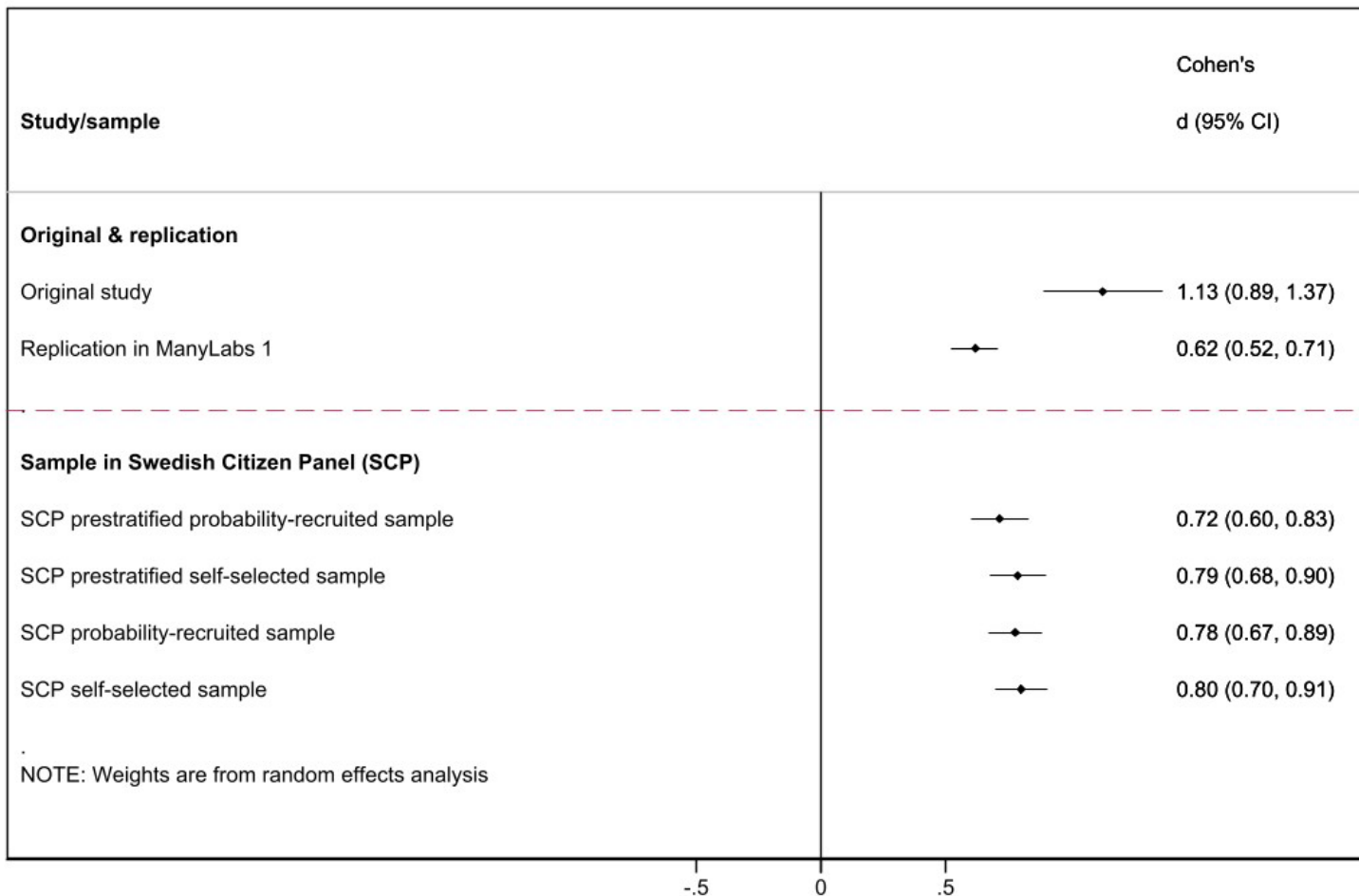
**The Swedish
Citizen Panel**

Compositions of the samples

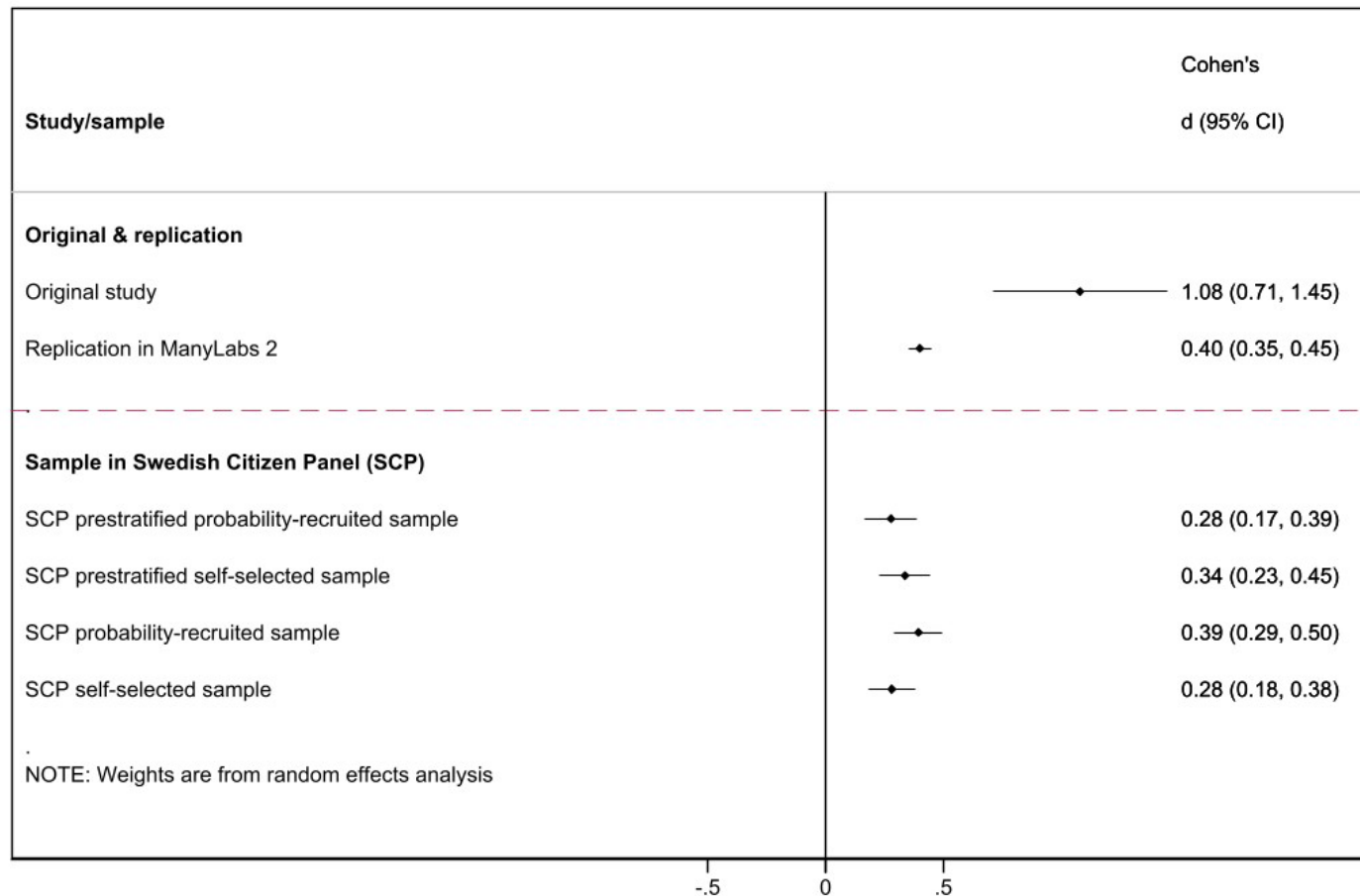
		Prob – unstratified	NonProb - unstratified	Prob - stratified	NonProb - stratified	SCB*
Sex	Women	48%	38%	49%	52%	49,5%
	Men	52%	62%	51%	48%	50,5%
Age	18-34	10%	6%	17%	17%	28%
	35-49	20%	27%	22%	24%	25%
	50-85	70%	66%	61%	59%	47%
Education	Low/middle	34%	38%	72%	73%	74%
	High	66%	62%	28%	27%	26%
n		1 543 (62%)	1 590 (64%)	1 326(53%)	1 382 (55%)	

* Numbers for the Swedish population age 18-85, from Statistics Sweden

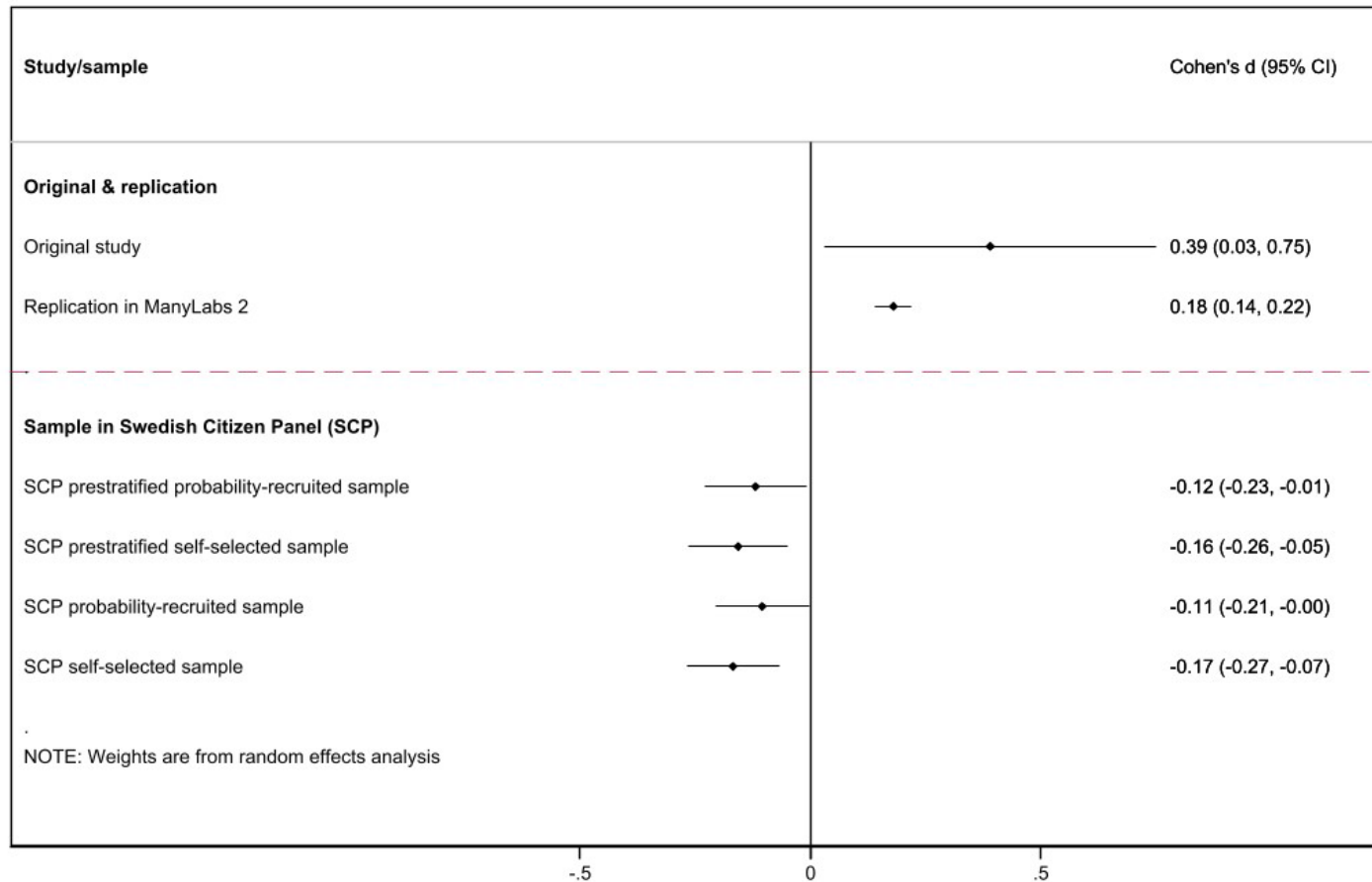
Results - Exp 1: *Gain versus loss framing (Tversky & Kahneman, 1981)*



Results - Exp 2: *The framing of decisions and the psychology of choice (Tversky & Kahneman, 1981)*



Results - Exp 3: *Why people are reluctant to tempt fate* (Risen & Gilovich, 2008)





Conclusions and take-home messages

- The self-selected samples did not differ from the probability-based samples for any of the experiments
- Stratification did not differ from non-stratification for any of the experiments
- Self-selected samples may be good enough when conducting well—known psychological experiments