A Replication of
Comparing Internet Experiences and Prosociality in Amazon Mechanical Turk and Population-Based Survey Samples
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Introduction to Paper

- Nationally representative sample (NORC)
  vs. Amazon Mechanical Turk (AMT)

- Ways of dealing with discrepancies:
  - Just leave it – not representative but doesn't seem to undermine validity
  - Benchmark – but Amazon doesn't provide public demographic data

- Problem Addressed:
  previous literature overlooks most likely sources of variation
  - Internet experiences and skills
  - Prosocial attitudes and behavior

Main Replication

Table 3. Regression Models on Internet Experiences.

	Frequency of Use			Autonomy of Use			Internet Skills			Number of Activities			Social Media Use		
	Coefficient	SE	Significance	Coefficient	SE	Significance	Coefficient	SE	Significance	Coefficient	SE	Significance	Coefficient	SE	Significance
Age	−.19	.02	***	−.04	.00	***									
Female	.76	.43		.16	.08	*									
Income (sq. root)	−.01	.00	***	.00	.00	***									
Employed	−2.80	.47	***	.54	.09	***									
Rural resident	−.66	.60		−.25	.11	*									
Education (base: BA or more)															
HS or less	−.12	.61		−.87	.11	***									
Some college	.13	.50		−.30	.09	**									
Race and ethnicity (base: white)															
Hispanic	1.11	.73		−.28	.13	*									
Black	2.73	.72	***	−.28	.13	*									
Asian	3.02	.95	**	−.26	.17										
Native American	.30	1.77		−.17	.33										
Other	4.28	2.51		.17	.46										
AMT sample	6.07	.51	***	.40	.09	***									
N		2,638			2,664										
Adj. R²		.21			.18										

Note: sq. = square; HS = high school; AMT = Amazon Mechanical Turk; adj. = adjusted.
*p < .05. **p < .01. ***p < .001.
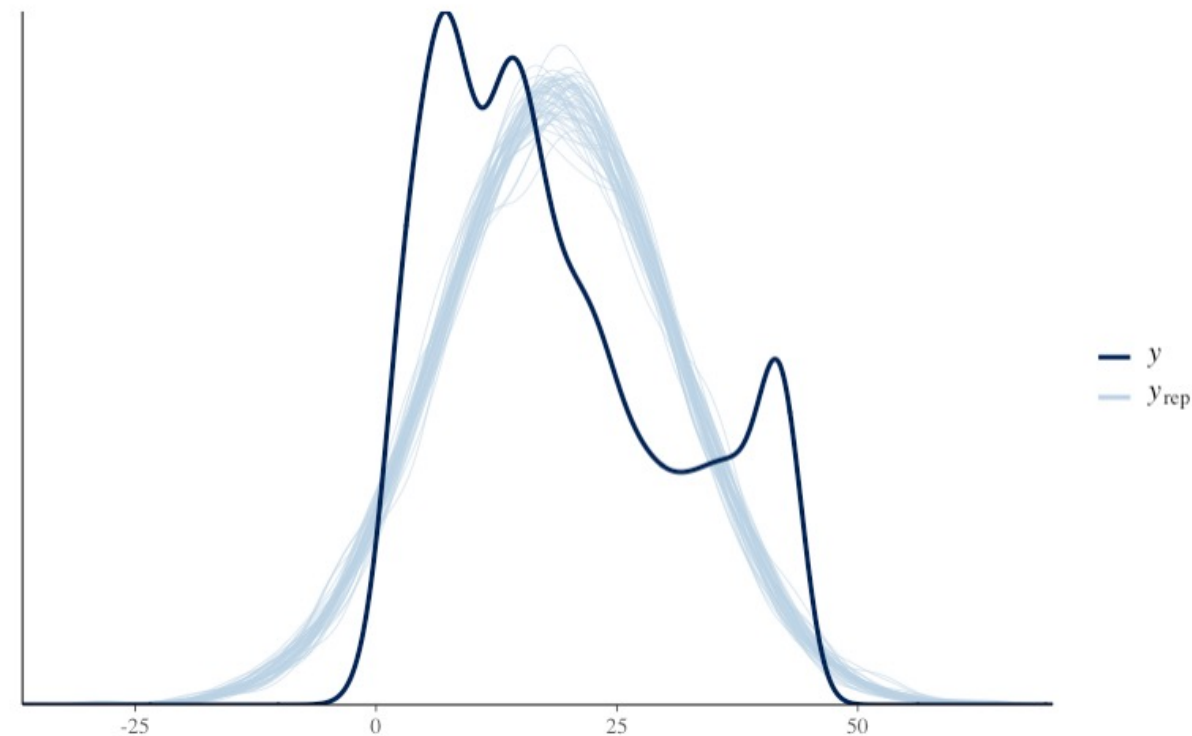
Table 3: Regression models on Internet experiences

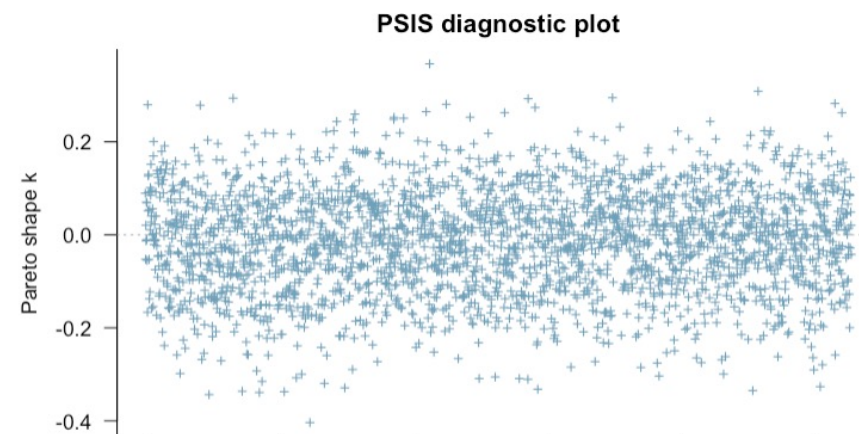|	Dependent variable:				
	Autonomy of Use (1)	Frequencey of Use (2)	Internet Skills (3)	Social Media Use (4)	Number of Activities (5)
age	−0.04*** (0.00)	−0.19*** (0.02)	−0.02*** (0.00)	−0.04*** (0.00)	−0.03*** (0.00)
female	0.16** (0.08)	−0.76* (0.43)	−0.22*** (0.04)	0.51*** (0.06)	0.44*** (0.08)
incomesqrt	0.00*** (0.00)	−0.01*** (0.00)	0.00*** (0.00)	0.00*** (0.00)	0.00 (0.00)
employed	0.54*** (0.09)	−2.80*** (0.47)	0.12*** (0.04)	0.21*** (0.07)	0.19** (0.09)
rural	−0.25** (0.11)	−0.66 (0.60)	−0.03 (0.05)	−0.11 (0.09)	0.03 (0.11)
eduhsorless	−0.87*** (0.11)	−0.12 (0.61)	−0.47*** (0.05)	−0.57*** (0.09)	−0.59*** (0.11)
edusc	−0.30*** (0.09)	0.13 (0.50)	−0.06 (0.04)	−0.15** (0.07)	0.10 (0.09)
hispanic	−0.28** (0.13)	1.11 (0.73)	−0.11* (0.06)	0.01 (0.11)	−0.27** (0.14)
black	−0.28** (0.13)	2.73*** (0.72)	−0.02 (0.06)	0.10 (0.11)	0.04 (0.13)
asian	−0.26 (0.17)	3.02*** (0.95)	−0.16** (0.08)	0.11 (0.14)	−0.57*** (0.18)
nativeam	−0.17 (0.33)	0.30 (1.77)	0.04 (0.15)	−0.50* (0.26)	0.11 (0.33)
raceother	0.17 (0.46)	4.28* (2.51)	0.04 (0.21)	0.33 (0.38)	0.70 (0.47)
amtsample	0.39*** (0.09)	6.07*** (0.51)	0.31*** (0.04)	0.89*** (0.08)	0.46*** (0.09)
Constant	6.12*** (0.22)	27.60*** (1.19)	0.49*** (0.10)	3.81*** (0.18)	3.87*** (0.22)
Observations	2,664	2,638	2,663	2,664	2,664
Adjusted R2	0.18	0.21	0.19	0.28	0.12

Note: *p<0.1; **p<0.05; ***p<0.01

Bayesian Replication

Table 3: Frequency of Use - Comparison between Original & Baysian

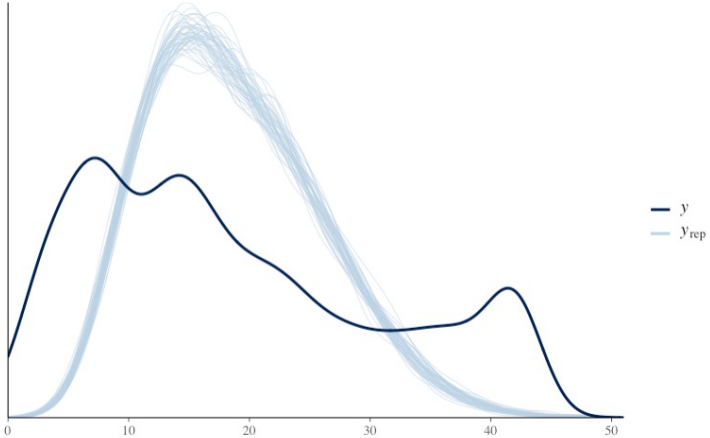|	Orig	Bayes
age	-0.19 (0.02) ***	-0.20 (0.02)
female	-0.76 (0.43) +	-0.65 (0.42)
incomesqrt	-0.01 (0.00) ***	-0.01 (0.00)
employed	-2.80 (0.47) ***	-2.42 (0.43)
rural	-0.66 (0.60)	-0.54 (0.50)
eduhsorless	-0.12 (0.61)	-0.36 (0.50)
edusc	0.13 (0.50)	0.08 (0.42)
hispanic	1.11 (0.73)	0.42 (0.60)
black	2.73 (0.72) ***	1.60 (0.57)
asian	3.02 (0.95) **	1.55 (0.66)
nativeam	0.30 (1.77)	-0.02 (0.90)
raceother	4.28 (2.51) +	0.55 (0.94)
amtsample	6.07 (0.51) ***	4.88 (0.44)
Num.Obs.	2638	2638
R2	0.212	
R2 Adj.	0.208	

Reference categories: BA or more, white

PSIS diagnostic plot

Sensitivity Checks

Table 3: Frequency of Use - Alternative Specification

	Orig	Alt Var
age	-0.19 (0.02) ***	-0.18 (0.02) ***
female	-0.76 (0.43) +	-0.74 (0.43) +
incomesqrt	-0.01 (0.00) ***	
employed	-2.80 (0.47) ***	-2.69 (0.47) ***
rural	-0.66 (0.60)	-0.69 (0.60)
eduhsorless	-0.12 (0.61)	-0.15 (0.60)
edusc	0.13 (0.50)	0.11 (0.50)
hispanic	1.11 (0.73)	1.09 (0.73)
black	2.73 (0.72) ***	2.69 (0.72) ***
asian	3.02 (0.95) **	3.02 (0.95) **
nativeam	0.30 (1.77)	0.32 (1.76)
raceother	4.28 (2.51) +	4.35 (2.51) +
amtsample	6.07 (0.51) ***	6.15 (0.50) ***
lincome		-1.04 (0.25) ***
Num.Obs.	2638	2638
R2	0.212	0.214
R2 Adj.	0.208	0.210

Reference categories: BA or more, white

Table 3: Frequency of Use - Alternative Specification

	OLS	Poisson
age	-0.19 (0.02) ***	-0.01 (0.00) ***
female	-0.76 (0.43) +	-0.03 (0.01) ***
incomesqrt	-0.01 (0.00) ***	0.00 (0.00) ***
employed	-2.80 (0.47) ***	-0.13 (0.01) ***
rural	-0.66 (0.60)	-0.04 (0.01) **
eduhsorless	-0.12 (0.61)	-0.01 (0.01)
edusc	0.13 (0.50)	0.00 (0.01)
hispanic	1.11 (0.73)	0.06 (0.02) ***
black	2.73 (0.72) ***	0.15 (0.01) ***
asian	3.02 (0.95) **	0.14 (0.02) ***
nativeam	0.30 (1.77)	0.02 (0.04)
raceother	4.28 (2.51) +	0.23 (0.05) ***
amtsample	6.07 (0.51) ***	0.31 (0.01) ***
Num.Obs.	2638	2638
R2	0.212	
R2 Adj.	0.208	

Reference categories: BA or more, white

	elpd_diff	se_diff
b.freq.model	0.0	0.0
pb.freq.model	-4478.4	160.6

Conclusion

- Difference along demographic dimensions

- Difference along all measures of Internet experience and skills

- Difference along all measures of Prosocial attitudes and behaviors

- Covariance adjustment strategies would not eliminate biases

- Future work to explore comparative performance of different weighting schemes

Table 3: Frequency of Use - Alternative Specification

	NORC Weighted	Sample w/o control	Sample w/ control
age	-0.19 (0.02) ***	-0.27 (0.01) ***	-0.19 (0.02) ***
female	0.07 (0.54)	-0.86 (0.44) *	-0.76 (0.43) +
incomesqrt	-0.01 (0.00) **	-0.01 (0.00) ***	-0.01 (0.00) ***
employed	-2.02 (0.60) ***	-3.53 (0.48) ***	-2.80 (0.47) ***
rural	-0.03 (0.80)	-0.24 (0.61)	-0.66 (0.60)
eduhsorless	-1.28 (0.67) +	-1.85 (0.61) **	-0.12 (0.61)
edusc	1.15 (0.73)	-0.63 (0.51)	0.13 (0.50)
hispanic	0.85 (0.80)	-0.06 (0.75)	1.11 (0.73)
black	3.42 (0.81) ***	2.00 (0.74) **	2.73 (0.72) ***
asian	3.72 (1.49) *	3.64 (0.97) ***	3.02 (0.95) **
nativeam	3.37 (1.87) +	0.08 (1.81)	0.30 (1.77)
raceother	2.46 (2.87)	3.61 (2.58)	4.28 (2.51) +
amtsample			6.07 (0.51) ***
Num.Obs.	1491	2638	2638
R2	0.126	0.169	0.212
R2 Adj.	0.119	0.165	0.208

Reference categories: BA or more, white