

Appendix

Recruiting Large Online Samples in the United States and India: Facebook, Mechanical Turk and Qualtrics

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1 Compensation and Recruitment Details

To equalize the expected value of participating in the study, Facebook subjects were offered a 1-in-500 chance of winning a \$499 iPad Air 2 in the United States, or a 1-in-1000 chance of winning a \$309 iPad Mini 2 in India. MTurk subjects in these countries were paid \$1 and 31 cents, respectively.

Figure 1: Facebook Advertisements: United States (Left) and India (Right)



The Facebook advertisements used to recruit participants are reproduced in Figure 1. The MTurk HIT in the United States contained the text below. The India HIT was identical, except that “Indian current events” was substituted for “current events.”

Answer questions about current events.

The survey should take about 10 minutes.

You can find the survey here: [LINK]

At the end of the survey, you’ll find a CODE. To get paid, please enter the code below:

Recruitment methods in each country varied significantly in the cost and time required to draw an $N = 1000$ sample, as summarized in Table 1.

Subsequent to our surveys, MTurk added a set of new “premiere qualifications” which allow researchers to target respondents based on variables such as age, gender, education, and ideology. Using this approach, one could recruit a sample in the 35+ age range for an extra \$0.50 per respondent, which would have been

Table 1: Sampling Dates (2015–16) and Costs Per Valid Completed Survey

Sample	Start	End	N	Recruitment	Compensation	Total
U.S.						
Facebook	Oct. 26	Nov. 05	1010	\$1.63	\$0.92	\$2.55
MTurk	Nov. 02	Nov. 02	979	\$0.41	\$1.02	\$1.43
Qualtrics	Nov. 03	Nov. 05	1071	\$4.67	Included	\$4.67
U.S. Targeted						
Facebook	Nov. 06	Nov. 12	605	\$2.68	\$0.92	\$3.60
MTurk	Nov. 18	Jan. 16	626	\$1.17	\$0.96	\$2.13
India						
Facebook	Oct. 26	Nov. 10	1000	\$1.09	\$0.29	\$1.38
MTurk	Nov. 02	Dec. 14	1003	\$0.12	\$0.31	\$0.43
Qualtrics	Nov. 02	Nov. 06	1023	\$5.87	Included	\$5.87

NOTE: Calculated from the authors' online survey datasets (Start, End, and N) and records of expenditures on the project (Recruitment and Compensation).

slightly cheaper, and involved less hassle, than the two-stage approach we employ in the paper. This new option mitigates some of the concerns we note about targeted recruitment using MTurk. Meanwhile, a relatively new third-party service, TurkPrime, helps researchers target using other variables.

2 Attitudes Towards Risk

As described in the main text, we used a raffle for an iPad to compensate subjects in our Facebook-recruited samples, whereas those from the MTurk and Qualtrics samples received guaranteed individual payments. One implication of these differing compensation methods is that respondents who participate in exchange for a raffle entry might be more risk-acceptant than those who participate in exchange for guaranteed compensation. To assess differences in attitudes toward risk, we included a version of the common “Asian Disease” question in psychology, using only the “lives saved” framing (Tversky and Kahneman, 1981). In both India and the United States, Facebook-recruited respondents were significantly more likely than MTurk respondents to favor the risky option for combatting this hypothetical disease (38.8% for Facebook in India, 34.2% for MTurk in India, two-tailed $p = 0.032$; 34.3% for Facebook in the U.S., 30.7% for MTurk in the U.S., two-tailed $p = 0.030$). However, the difference was less than 5 percentage points in both countries, which pales in comparison to the 50 percentage point increase in risk acceptance that results from framing the effects of a disease in terms of lives lost (Tversky and Kahneman, 1981). Moreover, there was no sig-

nificant difference vis-a-vis Qualtrics-recruited respondents (36.2% in India, two-tailed $p = 0.222$; 37.4% in the U.S., two-tailed $p = 0.098$), who were also paid individually. Also, since we did not experimentally manipulate compensation, differences in risk acceptance between the Facebook and MTurk sample might be attributable to other factors. It seems likely that the effect of compensation mode on risk acceptance of the sample is, at worst, a small one.

3 Descriptive Statistics Tables and Pre-Specified Tests

In the main text, we present descriptive statistics for each convenience sample graphically, with all variables scaled 0–1 to facilitate comparison. In Tables 3, 4, 5, 6, and 7, we present mean values using the original scale of each variable, along with significance tests for mean differences vis-a-vis probability samples or other benchmarks. These tables indicate which tests were pre-specified and whether they are supported or rejected (adjusting p-values for multiple comparisons using the method of Benjamini and Hochberg (1995)). In addition, to allow for a comparison across variables of how close convenience sample figures come to probability sample figures, Tables 8, 9, 10, and 11 present the standardized mean difference between the convenience and probability samples (the mean difference divided by the standard deviation in the probability sample).

In the main text, we operationalize rural versus urban residence in the United States/India as the log of the population density of the county/District associated with the respondent's ZIP/PIN code. In the PAP, we specified population rather than population density, and we further specified the Department of Agriculture's Rural-Urban Continuum Code as an alternate measure for the United States. The bottom row(s) of Tables 3 and 4 report results for these measures, which are similar to those for population density.

4 Geographical Representativeness

As discussed in the main text, each of the U.S. convenience samples is fairly representative of the population in geographic terms, whereas in India, the MTurk sample stands out for its heavy concentration of respondents in the two southern states of Kerala and Tamil Nadu. Figures 2 and 3 present barplots of state of residence in the United States and India, respectively, showing how each compares to the population distribution. Figure 4 and Table 12 present a summary measure of each sample's deviation from population

Source	Cost	Speed	Cooperative	Demog. Rep.	Geog. Rep.	Pol. Rep.	Targeting
U.S.							
MTurk	✓	✓	✓		✓		
Qualtrics				✓	✓	✓	
Facebook					✓		✓
India							
MTurk	✓		✓				
Qualtrics		✓					
Facebook					✓	✓	?

Table 2: Comparative Advantages of Recruitment Methods

proportions: the goodness-of-fit ϕ coefficient along with its bootstrapped 95% confidence interval. Table 13 shows that we obtain similar results when using the related Cramér’s V statistic, as specified in the PAP. Figures 5, 6, and 7 plot the sample densities of each state as a heat map with deeper colors indicating greater density; here, the concentration of MTurk respondents in Tamil Nadu (the most southeastern state) is especially evident. Kerala and Tamil Nadu are also overrepresented in the Facebook and Qualtrics samples, along with Delhi and Maharashtra, but the deviations from population proportions are not nearly as large for these samples.

5 Comparative Advantages

In the Conclusion in the main text, we discuss the comparative advantages of different recruitment methods; these are summarized in Table 2.

6 Survey Questionnaire–United States

1. Consent form
2. Do you live in the United States?
 1. Yes
 2. No
3. What is your age? [drop-down menu]

4. (GSS 14) How interested would you say you personally are in politics?
 1. Very interested
 2. Fairly interested
 3. Not very interested
 4. Not at all interested

5. (GSS 14) We hear a lot of talk these days about liberals and conservatives. Where would you place yourself on this scale?
 1. Extremely liberal
 2. Liberal
 3. Slightly liberal
 4. Moderate; middle of the road
 5. Slightly conservative
 6. Conservative
 7. Extremely conservative

6. (ANES 12) Are you registered to vote?
 1. Yes
 2. No

7. (GSS 14) In 2012, you may remember that Obama ran for President on the Democratic ticket against Romney for the Republicans. Do you remember for sure whether or not you voted in that election?
 1. Yes, I voted
 2. No, I did not vote
 3. I was ineligible to vote

8. (GSS 14) [If voted; randomize answer choice order] Who did you vote for?
 1. Obama

2. Romney
3. Another candidate
4. I didn't vote for president

9. (GSS 14) Generally speaking, do you usually think of yourself as a Democrat, a Republican, an Independent, or what? [randomize order of two parties in text, and have answer choices 1–2 match]

1. Democrat
2. Republican
3. Independent
4. Other

10. (GSS 14) [If answered 1 or 2 to prior question] Would you call yourself a strong [Democrat / Republican] or a not very strong [Democrat / Republican]?

1. Strong
2. Not very strong

(GSS 14) [If answered 3 to prior question] Do you think of yourself as closer to the Republican Party or to the Democratic party?

1. Closer to Republican
2. Neither
3. Closer to Democratic

11. There are many serious problems in society. Some problems are not so serious for politicians, but are for researchers. For example, sometimes people don't read instructions carefully. To show that you read this, please ignore the question below and just choose the '–' option at the very bottom of the list.

In your opinion, what is the most serious problem facing the country?

1. Unemployment
2. National debt

3. Education
4. Poverty
5. Taxes
6. Healthcare
7. Global warming
8. Racism
9. Homelessness
10. Social security
11. Other
12. –

12. (ANES 12) During a typical week, how many days do you follow the news in each of the following sources, not including sports? [randomize order of items]

- Printed newspaper
- Radio
- Internet
- Television

1. None
2. One day
3. Two days
4. Three days
5. Four days
6. Five days
7. Six days
8. Seven days

Now we would like to ask you some general questions about civics and politics. Most people don't know the answers to all these questions. If you don't know an answer, just give your best guess and go on to the next question. Please do NOT search for these answers online. We are not interested in how well you can find information on the Internet.

13. (ANES 12) Do you happen to know how many times an individual can be elected President of the United States under current laws? Please enter a number. [numeric entry]
14. (ANES 12) For how many years is a United States Senator elected—that is, how many years are there in one full term of office for a U.S. Senator? Please enter a number. [numeric entry]
15. (ANES 12) What job or political office does David Cameron now hold? [open-ended]
16. (ANES 12) What job or political office does John Roberts now hold? [open-ended]
17. (ANES 12) What is Medicare?
 1. A program run by the U.S. federal government to pay for old people's health care
 2. A program run by state governments to provide health care to poor people
 3. A private health insurance plan sold to individuals in all 50 states
 4. A private, non-profit organization that runs free health clinics

Now we would like to ask your opinion about several policy issues. Some concern actual policies, while others are hypothetical. There are no right or wrong answers to these questions.

18. Imagine that the United States is preparing for the outbreak of an unusual disease, which is expected to kill 600 people. Two alternative programs to combat the disease have been proposed. Assume that the exact scientific estimates of the consequences of the programs are as follows:

If Program A is adopted, 200 people will be saved. If Program B is adopted, there is one-third probability that 600 people will be saved, and two-thirds probability that no people will be saved.

Which of the two programs would you favor?

1. Program A

2. Program B

19. Would you support or oppose the use of military force by the United States in response to the following situation?

North Korea has begun massing troops on its border and has threatened to invade South Korea. To defend our long-time ally, the President has decided to send a large number of American troops to South Korea.

[The United States has enough troops to successfully repel a North Korean invasion. There is no need to reinstitute the military draft. / The United States does not have enough troops to successfully repel a North Korean invasion. Therefore, the President and Congress have decided to reinstitute the military draft.]

Do you support or oppose the President's decision to send troops to defend our ally South Korea?

1. Strongly support
 2. Support
 3. Neither support nor oppose
 4. Oppose
 5. Strongly oppose
20. We're going to ask you your opinion about a government policy intended to help Americans afford to own homes. Under this policy, individuals who take out a mortgage to buy a home are [eligible for a cash payment from the government / eligible to deduct the monthly mortgage interest from their taxable income, thereby reducing their tax burden]. Do you approve or disapprove of this policy?

1. Approve
 2. Disapprove
21. (GSS 14) We are faced with many problems in this country, none of which can be solved easily or inexpensively. Below is a list of some problems. For each one, do you think we're spending too much money on it, too little money, or about the right amount?

- [Welfare / Assistance for the poor]

- National defense
- Health

1. Too little money
2. About the right amount
3. Too much money

To close, we would like to ask you several questions about your background. Please remember that your responses are completely anonymous and cannot be traced back to you. Additionally, your responses are combined with those of many others and summarized in a report to further protect your anonymity.

22. (GSS 14) Are you male or female?

1. Male
2. Female

23. (ANES 12) What is the highest level of school you have completed or the highest degree you have received?

1. Less than high school
2. High school
3. Some post-high-school, no bachelor's degree
4. Bachelor's degree
5. Graduate degree

24. (GSS 14) Are you Spanish, Hispanic, or Latino/a?

1. Yes
2. No

25. (GSS 14) What is your race? Indicate one or more races that you consider yourself to be.

1. White

2. Black or African American
 3. American Indian or Alaska Native
 4. Asian Indian
 5. Chinese
 6. Filipino
 7. Japanese
 8. Korean
 9. Vietnamese
 10. Other Asian
 11. Native Hawaiian
 12. Guamanian or Chamorro
 13. Samoan
 14. Other Pacific Islander
 15. Some other race
26. (GSS 14) What is your religious preference?
1. Protestant
 2. Catholic
 3. Jewish
 4. Some other religion
 5. No religion
27. Which state do you live in? [drop-down menu]
28. What is the 5-digit ZIP code of your residence? [numeric entry]
29. (GSS 14) Last week were you working full time, part time, going to school, keeping house, or what?
1. Working full time

2. Working part time
 3. With a job, but not at work because of temporary illness, vacation, strike
 4. Unemployed, laid off, looking for work
 5. Retired
 6. In school
 7. Keeping house
30. (GSS 14) Are you currently married, widowed, divorced, separated, or have you never been married?
1. Married
 2. Widowed
 3. Divorced
 4. Separated
 5. Never married
31. (GSS 14) In which of these groups did your total family income—that is, income from all sources, for those people in the household who are related to you, before taxes—fall last year (2014)? Total income includes interest or dividends, rent, Social Security, other pensions, alimony or child support, unemployment compensation, public aid (welfare), armed forces or veteran's allotment.
1. Under \$10,000
 2. \$10,000–\$19,999
 3. \$20,000–\$29,999
 4. \$30,000–\$39,999
 5. \$40,000–\$49,999
 6. \$50,000–\$59,999
 7. \$60,000–\$74,999
 8. \$75,000–\$89,999
 9. \$90,000–\$109,999

10. \$110,000–\$129,999
11. \$130,000–\$149,999
12. \$150,000 or over
13. [randomly shown to half of sample] I don't know

Please answer the following questions honestly. Your responses will not affect your [chances of winning the iPad / MTurk approval rating / compensation].

32. Have you discussed any aspect of this particular survey, either in person or online, with anyone who has already taken it?

1. Yes
2. No

33. In general, how often do you take online surveys about politics, such as this one?

1. One or more times a day
2. A few times a week
3. A few times a month
4. A few times a year
5. Never or almost never

34. If you would like to share any comments about the survey, please enter them here. [text box]

35. [Facebook-recruited respondents only] Would you like to enter the drawing for an iPad?

1. Yes (In this case, you will be redirected to another site where you can provide your name and email)
2. No

36. To enter the drawing for an iPad, please type your name and email below. We will get in contact with the person who is selected in December 2015.

Name:

Email:

7 Survey Questionnaire–India

1. Consent form
2. Do you live in India?
 1. Yes
 2. No
3. What is your age? [drop-down menu]
4. (WVS) How interested would you say you are in politics?
 1. Very interested
 2. Somewhat interested
 3. Not very interested
 4. Not at all interested
5. (WVS) In political matters, people talk of “the left” and “the right.” How would you place your views on this scale, generally speaking?
 1. Left
 - 2.
 - 3.
 - 4.
 - 5.
 - 6.
 - 7.
 - 8.
 - 9.
 10. Right
6. (NES 09) Do you have a voter identity card?

1. Yes, I have one
 2. Yes, I have one but it has mistakes
 3. No, I do not have one
 4. No, I was photographed but did not get it
 5. No, I had one but lost it
7. (NES) In the 2014 elections to the Lok Sabha, a lot of people were not able to vote. What about you—did you vote or did you not vote in this election?
1. Yes, I am sure I voted
 2. No, I did not vote
8. (NES) [If voted; randomize order of first two choices] Which party did you vote for in the 2014 elections to the Lok Sabha?
1. Bharatiya Janata Party (BJP)
 2. Indian National Congress (INC)
 3. Other party
9. (NES) Is there any political party you particularly feel close to?
1. Yes
 2. No
10. (NES) [If yes; randomize order of first two choices] Which party do you feel close to?
1. Bharatiya Janata Party (BJP)
 2. Indian National Congress (INC)
 3. Other party
11. There are many serious problems in society. Some problems are not so serious for politicians, but are for researchers. For example, sometimes people don't read instructions carefully. To show that you read this, please ignore the question below and just choose the '–' option at the very bottom of the list.

In your opinion, what is the most serious problem facing the country?

1. Corruption
2. Unemployment
3. High prices
4. Economic growth/development
5. Supply of electricity/drinking water
6. Poverty
7. Education
8. Crime/security
9. Agriculture
10. Housing
11. Road/highway maintenance
12. Other
13. –

12. (NES) How regularly do you do the following for News—daily, sometimes, rarely or never? [randomize order of items]

- Watch TV
- Read newspaper
- Listen to the radio
- Use the Internet/go online

1. Daily
2. Sometimes
3. Rarely
4. Never

Now we would like to ask you some general questions about civics and politics. Most people don't know the answers to all these questions. If you don't know an answer, just give your best guess and go on to the next question. Please do NOT search for these answers online. We are not interested in how well you can find information on the Internet.

13. (SONS 10) Who is the Prime Minister of India? [open-ended]
14. (NES) Who is the Chief Minister of your state? [open-ended]
15. (SONS 06) What is the date 26th January known for? [open-ended]
16. (SONS 06) What is the date 2nd October known for? [open-ended]

Now we would like to ask your opinion about several policy issues. There are no right or wrong answers to these questions.

17. Imagine that India is preparing for the outbreak of an unusual disease, which is expected to kill 600 people. Two alternative programs to combat the disease have been proposed. Assume that the exact scientific estimates of the consequences of the programs are as follows:

If Program A is adopted, 200 people will be saved. If Program B is adopted, there is one-third probability that 600 people will be saved, and two-thirds probability that no people will be saved.

Which of the two programs would you favor?

1. Program A
2. Program B

18. (Lok) HOW MANY of the following statements do you agree with?

- In life, money matters more than knowledge.
- In life, knowledge matters more than money.
- [randomly show to half of sample] Having more boys than girls is preferred in my family.
- Girls should be educated as much as boys.

1. Zero
2. One
3. Two
4. Three
5. Four [only if shown the additional statement]

19. (Lok) Thinking about a typical Lok Sabha election in your constituency, HOW MANY of following candidates trouble you?

- A candidate who is wealthy
- A candidate who is poor
- [randomly show to half of sample] A candidate who can deliver benefits to me, but faces serious criminal cases
- A candidate who does social service but is not affiliated to any political party

1. Zero
2. One
3. Two
4. Three
5. Four [only if shown the additional statement]

To close, we would like to ask you several questions about your background. Please remember that your responses are completely anonymous and cannot be traced back to you. Additionally, your responses are combined with those of many others and summarized in a report to further protect your anonymity.

20. Are you male or female?

1. Male
2. Female

21. (WVS, NES) Up to what level have you studied?

1. Below Primary
2. Primary Pass: Completed Class V but not Class VIII
3. Middle Pass: Completed Class VIII but not Class X
4. Matric: Completed Class X / High School or Equivalent
5. Intermediate / College No Degree: Class XI / PUC / Post Matric Diploma
6. Graduate: B.A., B.Sc., B.Com., Polytechnic, Computer, BTC
7. Post Graduate: M.A., M.Sc., M.Com., B.Ed., M.Ed., LL.B., PG
8. Professional Degree or Higher Research Degree

22. (NES) What is your caste group?

1. Scheduled Caste (SC)
2. Scheduled Tribe (ST)
3. Other Backward Classes (OBC)
4. Upper Caste
5. None of these

23. (NES) What is your religion?

1. Hindu
2. Muslim
3. Christian
4. Sikh
5. Buddhist/Neo Buddhist
6. Jain
7. Other religion
8. No religion

24. In which State or Union Territory do you live? [Drop-down menu]

25. What is the PIN code of your residence?
26. (WVS) Which of the following categories best describes your employment status?
1. Employed full-time
 2. Employed part-time
 3. Self-employed
 4. Retired
 5. Housewife
 6. Student
 7. Unemployed
27. (NES) What is your current marital status?
1. Never married
 2. Currently married
 3. Widowed
 4. Separated
 5. Divorced
28. (NES) What is your total MONTHLY household income, putting together the income of all members of the household?
1. Up to Rs. 1000
 2. Rs. 1001–2000
 3. Rs. 2001–3000
 4. Rs. 3001–4000
 5. Rs. 4001–5000
 6. Rs. 5001–10,000
 7. Rs. 10,001–20,000
 8. Above Rs. 20,000

9. [randomly shown to half of sample] I don't know

Please answer the following questions honestly. Your responses will not affect your [chances of winning the iPad / MTurk approval rating / compensation].

29. Have you discussed any aspect of this particular survey, either in person or online, with anyone who has already taken it?

1. Yes

2. No

30. In general, how often do you take online surveys about politics, such as this one?

1. One or more times a day

2. A few times a week

3. A few times a month

4. A few times a year

5. Never or almost never

31. If you would like to share any comments about the survey, please enter them here. [text box]

32. [Facebook-recruited respondents only] Would you like to enter the drawing for an iPad?

1. Yes (In this case, you will be redirected to another site where you can provide your name and email)

2. No

33. To enter the drawing for an iPad, please type your name and email below. We will get in contact with the person who is selected in December 2015.

Name:

Email:

Table 3: U.S. Demographics: Convenience versus Probability Samples

	Probability Sample	Facebook	Facebook Weighted	MTurk	MTurk Weighted	Qualtrics	Qualtrics Weighted
Age	49.01	<u>65.06***</u>	45.98***	33.72***	44.96***	38.46***	45.01***
Education (1–5)	2.87	3.85***	3.86***	3.44***	3.5***	3.17***	3.2***
Income (1–12)	5.77	6.14**	6.39***	5.22***	5.41**	5.4**	5.55
Male	0.45	0.4*	0.49†	<u>0.58***</u>	0.49†	0.34***	0.49
Married	0.46	<u>0.51**</u>	0.44	0.35***	0.43	0.46	0.49
Religious	0.79	0.64***	0.59***	0.47***	0.58***	0.75*	0.78
Hispanic	0.16	0.03***	0.06***	0.07***	0.06***	0.1***	0.07***
Black	0.16	0.01***	0.02***	0.07***	0.06***	0.1***	0.09***
White	0.75	0.96***	0.91***	<u>0.85***</u>	0.88***	0.8**	0.82***
Log Pop. Density	5.32	4.96***	5.2*	5.39	5.32	5.29	5.28
Log Population	12.87	12.51***	12.73**	<u>12.96†</u>	12.87	12.86	12.85
RUCC	2.02	2.31***	2.08	2	2.01	2.1	2.13†

NOTE: Entries are mean or weighted mean values for each sample. Probability sample is the 2012 American National Election Study (education; non-oversampled face-to-face interviews only), the 2014 Cooperative Congressional Election Survey (population density), or the 2014 General Social Survey cross-section (all other variables). Population and population density (in residents per square kilometer) are those of the county associated with the respondent's ZIP code. RUCC is Rural-Urban Continuum Code (higher numbers are more rural). Weights are post-stratification, based on region (4 categories), age (quartiles), and sex in the 2010 census. Stars report significance levels from two-tailed difference-in-means t-tests comparing the probability and convenience sample quantities, with adjustment for multiple comparisons using the Benjamini-Hochberg method (all hypotheses in the table are a single family). Results in bold type support pre-registered hypotheses, underlined results contradict pre-registered hypotheses, and those in regular font were not pre-registered. † $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table 4: Indian Demographics: Convenience versus Probability Samples

	Probability Sample	Facebook	Facebook Weighted	MTurk	MTurk Weighted	Qualtrics	Qualtrics Weighted
Education (0–8)	2.83	6.37***	6.57***	6.42***	6.41***	6.47***	6.56***
Age Range (1–5)	2.95	1.67***	2.65**	2.1***	2.63***	2.03***	2.53***
Income (1–8)	4.65	7.38***	7.53***	7.04***	7.51***	7.41***	7.58***
Male	0.53	0.76***	0.51	0.67***	0.51	0.77***	0.51
Married	0.85	0.19***	0.44***	0.56***	0.72***	0.52***	0.65***
Lower Caste	0.7	0.24***	0.16***	0.56***	0.28***	0.43***	0.3***
Log Pop. Density		7.35	7.49	7.02	7.27	7.54	7.77
Log Population		15.02	15.02	14.94	14.87	15.12	15.04

NOTE: Entries are mean or weighted mean values for each sample. Probability sample is the 2014 Indian National Election Study (pre-poll for Married; post-poll for other variables). Population and population density are those of the District associated with the respondent’s PIN code, in residents per square kilometer. Weights are post-stratification, based on region (5 categories), age (above/below median), and sex in the 2011 census. Stars report significance levels from two-tailed difference-in-means t-tests comparing the probability and convenience sample quantities, with adjustment for multiple comparisons using the Benjamini-Hochberg method (all hypotheses in the table are a single family). Results in bold type support pre-registered hypotheses, underlined results contradict pre-registered hypotheses, and those in regular font were not pre-registered. † $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table 5: U.S. Political Variables: Convenience versus Probability Samples

	Probability Sample	Facebook	Facebook Weighted	MTurk	MTurk Weighted	Qualtrics	Qualtrics Weighted
General							
Lib.–Con. (1–7)	4.09	3.1***	3.15***	3.24***	3.55***	3.79***	3.91**
Dem.–Repub. (1–7)	3.66	2.84***	2.99***	3.16***	3.42**	3.71	3.85*
Political interest (1–4)	2.58	3.66***	3.41***	3.03***	3.13***	3.04***	3.1***
Registered to Vote	0.82	0.98***	0.94***	0.89***	0.91***	0.84	0.87**
Turnout 2012	0.7	0.96***	0.89***	0.73*	0.8***	0.77***	0.83***
2012 Presidential Vote							
Obama	0.58	0.7***	0.68***	0.71***	0.63*	0.57	0.55
Romney	0.38	0.25***	0.24***	0.21***	0.31***	0.35	0.37
Other	0.03	0.04	0.07***	0.07***	0.06***	0.07***	0.07***
News Exposure (0–7)							
Internet	3.28	6.18***	6.12***	5.38***	5.52***	5.13***	5.12***
Television	3.91	5.13***	3.61**	<u>2.91***</u>	3.51***	4.69***	5.01***
Radio	2.44	2.81**	2.8***	<u>1.77***</u>	2***	3.02***	3.08***
Newspaper	1.95	2.91***	1.81	<u>0.92***</u>	1.12***	2.2*	2.36***
Political Knowledge							
Pres. term limits	0.86	0.98***	0.98***	0.98***	0.98***	0.9**	0.91***
Senate term length	0.23	0.72***	0.64***	0.49***	0.58***	0.29***	0.35***
David Cameron	0.08	0.63***	0.63***	0.61***	0.64***	0.27***	0.31***
John Roberts	0.17	0.72***	0.62***	0.57***	0.64***	0.28***	0.34***
Medicare	0.69	0.92***	0.84***	<u>0.69</u>	0.8***	0.69	0.73*

NOTE: Entries are mean or weighted mean values for each sample. Probability sample is the 2012 American National Election Study (news, knowledge, and registration; non-oversampled face-to-face interviews only) or the 2014 General Social Survey cross-section (all other variables). Weights are post-stratification, based on region (4 categories), age (quartiles), and sex in the 2010 census. Stars report significance levels from two-tailed difference-in-means t-tests comparing the probability and convenience sample quantities, with adjustment for multiple comparisons using the Benjamini-Hochberg method (all hypotheses in the table are a single family). Results in bold type support pre-registered hypotheses, underlined results contradict pre-registered hypotheses, and those in regular font were not pre-registered. † p<0.1, *p<0.05, **p<0.01, ***p<0.001.

Table 6: India Political Variables: Convenience versus Probability Samples

	Probability Sample	Facebook	Facebook Weighted	MTurk	MTurk Weighted	Qualtrics	Qualtrics Weighted
General							
Left–Right (1–10)	4.97	5.69***	5.72***	6.38***	6.31***	6.44***	6.56***
Any party ID	0.32	0.41***	0.42***	0.53***	0.53***	0.62***	0.6***
Political interest (1–4)	2.65	2.97***	2.98***	3.19***	3.06***	3.22***	3.23***
Registered to Vote	0.92	0.74***	0.8***	0.98***	0.97***	0.95**	0.97***
Turnout 2014	0.91	0.55***	0.62***	0.91	0.87	0.87***	0.91
2014 Lower House Vote							
BJP	0.32	0.63***	0.63***	0.61***	0.72***	0.74***	0.73***
INC	0.2	0.12***	0.18	0.25***	0.16	0.16**	0.17
Other	0.48	0.25***	0.19***	0.14***	0.12***	0.11***	0.11***
News Exposure (1–4)							
Internet	1.4	3.82***	3.82***	3.67***	3.55***	3.85***	3.84***
Television	3.04	3.22***	3.29***	3.7***	3.71***	3.77***	3.81***
Radio	1.7	2.17***	2.22***	2.48***	2.47***	2.7***	2.77***
Newspaper	2.31	3.5***	3.59***	3.6***	3.65***	3.71***	3.79***
Political Knowledge							
State Chief Minister	0.81	0.94***	0.93***	0.97***	0.95***	0.92***	0.93***
Republic Day	0.44	0.97***	0.97***	0.97***	0.97***	0.95***	0.95***
Gandhi’s Birthday	0.4	0.99***	0.99***	0.99***	0.99***	0.99***	0.99***

NOTE: Entries are mean or weighted mean values for each sample. Probability sample is the January 2006 State of the Nation Survey (knowledge of Republic Day and Gandhi’s Birthday), the 2009 Indian National Election Study (voter registration), the 2014 World Values Survey (ideology and interest), or the 2014 Indian National Election Study, post-poll (all other variables). Weights are post-stratification, based on region (4 categories), age (above/below median), and sex in the 2011 census. Stars report significance levels from two-tailed difference-in-means t-tests comparing the probability and convenience sample quantities, with adjustment for multiple comparisons using the Benjamini-Hochberg method (all hypotheses in the table are a single family). Results in bold type support pre-registered hypotheses, underlined results contradict pre-registered hypotheses, and those in regular font were not pre-registered. † p<0.1, *p<0.05, **p<0.01, ***p<0.001.

Table 7: Subject Cooperativeness in India and the United States

	Benchmark	Facebook	Facebook Weighted	MTurk	MTurk Weighted	Qualtrics	Qualtrics Weighted
 Screener Passage							
United States	0.57	0.66	0.69	0.93	0.91	0.40	0.39
India		0.32	0.31	0.67	0.76	0.25	0.25
“Don’t Know” Income							
United States	0.09	0.04	0.05	0.00	0.01	0.05	0.04
India	0.01	0.16	0.15	0.03	0.06	0.03	0.02
Survey Drop-out							
United States		0.09		0.01		0.05	
India		0.12		0.03		0.01	
Discuss with Others							
United States		0.00	0.00	0.01	0.01	0.03	0.03
India		0.08	0.05	0.09	0.03	0.15	0.11
Frequent Surveys (1–5)							
United States		1.59	1.53	3.57	3.44	2.10	2.19
India		1.88	1.70	2.75	2.67	2.58	2.42

NOTE: Benchmarks are Study 2 in Berinsky, Margolis and Sances (2014) (U.S. screener passage), the 2014 General Social Survey cross-section (U.S. “don’t know” income), and the 2014 World Values Survey (India “don’t know” income). Weights are post-stratification, based on region (four categories in the U.S., five in India), age (quartiles in the U.S., above/below median in India), and sex in each country’s most recent census.

Table 8: U.S. Demographics: Standardized Difference from Probability Samples

	Facebook	Facebook Weighted	MTurk	MTurk Weighted	Qualtrics	Qualtrics Weighted
Age	0.92	-0.17	-0.88	-0.23	-0.61	-0.23
Education	0.84	0.86	0.49	0.55	0.25	0.29
Income	0.11	0.18	-0.16	-0.11	-0.11	-0.06
Male	-0.09	0.07	0.26	0.07	-0.22	0.07
Married	0.12	-0.03	-0.22	-0.05	0.01	0.07
Religious	-0.38	-0.51	-0.80	-0.52	-0.10	-0.04
Hispanic	-0.36	-0.25	-0.24	-0.26	-0.16	-0.22
Black	-0.40	-0.38	-0.25	-0.26	-0.16	-0.20
White	0.48	0.37	0.22	0.29	0.12	0.16
Log Pop. Density	-0.22	-0.07	0.05	0.00	-0.02	-0.03

NOTE: Entries are mean differences between the convenience and probability sample figures listed in Table 3, divided by the standard deviation in the probability sample.

Table 9: Indian Demographics: Standardized Difference from Probability Samples

	Facebook	Facebook Weighted	MTurk	MTurk Weighted	Qualtrics	Qualtrics Weighted
Education	1.58	1.67	1.60	1.60	1.63	1.66
Age Range	-0.96	-0.22	-0.64	-0.24	-0.69	-0.32
Income	1.23	1.30	1.08	1.29	1.25	1.33
Male	0.47	-0.04	0.29	-0.04	0.47	-0.04
Married	-1.85	-1.16	-0.80	-0.37	-0.92	-0.55
Lower Caste	-1.00	-1.17	-0.29	-0.90	-0.57	-0.86

NOTE: Entries are mean differences between the convenience and probability sample figures listed in Table 4, divided by the standard deviation in the probability sample.

Table 10: U.S. Political Variables: Standardized Difference from Probability Samples

	Facebook	Facebook Weighted	MTurk	MTurk Weighted	Qualtrics	Qualtrics Weighted
Lib.–Con.	−0.69	−0.66	−0.59	−0.37	−0.21	−0.13
Dem.–Repub.	−0.42	−0.35	−0.26	−0.12	0.03	0.10
Political interest	1.18	0.91	0.49	0.60	0.50	0.57
Registered to Vote	0.40	0.31	0.19	0.22	0.05	0.12
Turnout 2012	0.58	0.43	0.08	0.23	0.17	0.28
Obama	0.25	0.21	0.27	0.10	−0.01	−0.06
Romney	−0.27	−0.29	−0.36	−0.15	−0.07	−0.02
Other	0.06	0.24	0.27	0.18	0.27	0.25
Internet	1.02	1.00	0.74	0.79	0.65	0.65
Television	0.45	−0.11	−0.37	−0.15	0.29	0.41
Radio	0.14	0.13	−0.25	−0.17	0.22	0.24
Newspaper	0.38	−0.06	−0.41	−0.33	0.10	0.16
Pres. term limits	0.34	0.35	0.35	0.36	0.12	0.15
Senate term length	1.15	0.96	0.62	0.83	0.15	0.28
David Cameron	1.98	1.97	1.90	2.01	0.68	0.83
John Roberts	1.45	1.19	1.06	1.24	0.29	0.45
Medicare	0.51	0.32	0.00	0.25	0.00	0.09

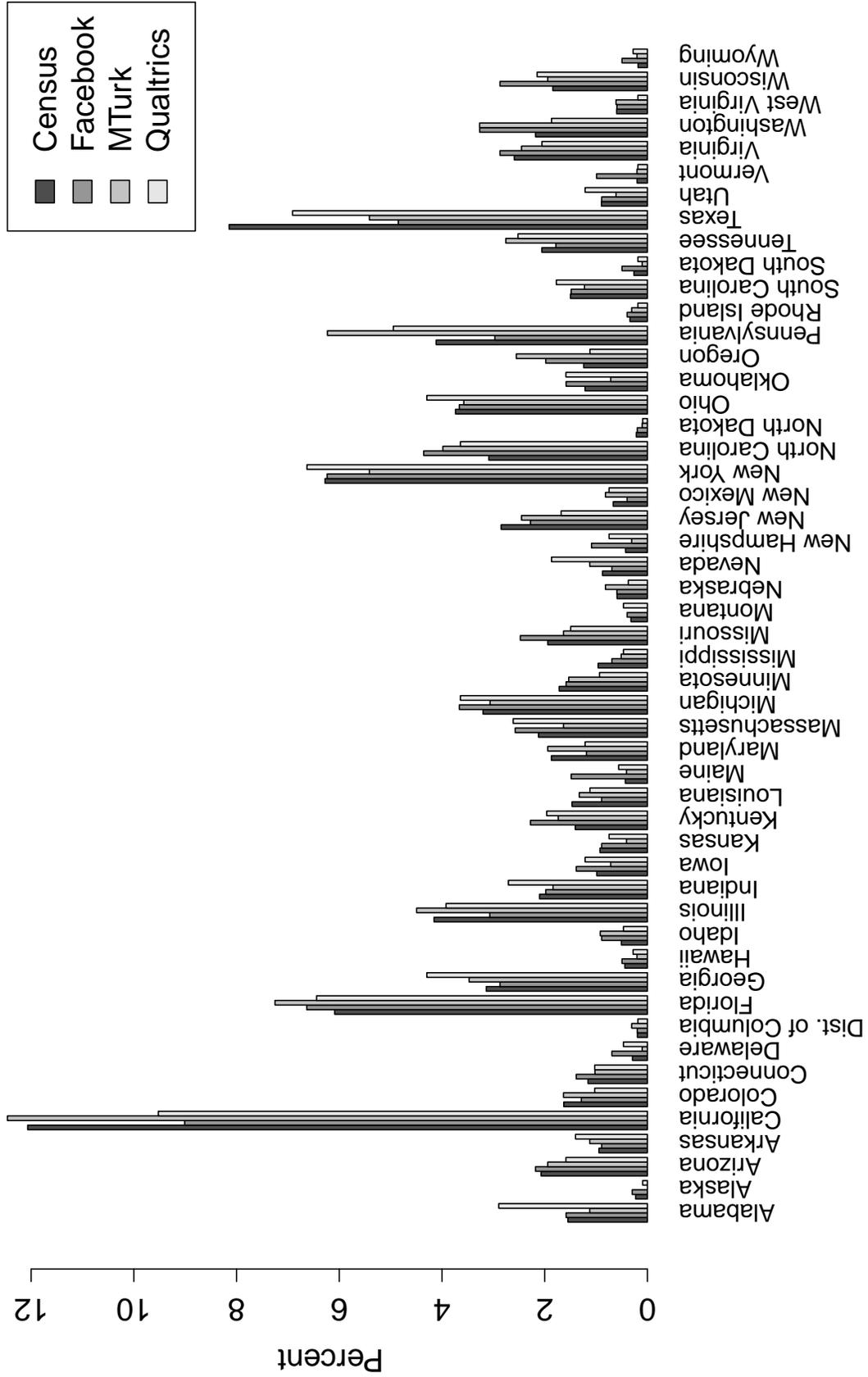
NOTE: Entries are mean differences between the convenience and probability sample figures listed in Table 5, divided by the standard deviation in the probability sample.

Table 11: India Political Variables: Standardized Difference from Probability Samples

	Facebook	Facebook Weighted	MTurk	MTurk Weighted	Qualtrics	Qualtrics Weighted
Left–Right (1–10)	0.30	0.31	0.58	0.55	0.60	0.65
Any party ID	0.20	0.23	0.47	0.46	0.65	0.61
Political interest (1–4)	0.34	0.36	0.57	0.44	0.61	0.61
Registered to Vote	–0.68	–0.45	0.21	0.20	0.10	0.17
Turnout 2014	–1.28	–1.02	0.01	–0.15	–0.13	–0.02
BJP	0.67	0.66	0.63	0.86	0.90	0.88
INC	–0.19	–0.04	0.12	–0.09	–0.11	–0.08
Other	–0.48	–0.58	–0.69	–0.73	–0.76	–0.75
Internet	2.80	2.80	2.62	2.48	2.84	2.82
Television	0.16	0.23	0.60	0.61	0.66	0.69
Radio	0.46	0.51	0.76	0.75	0.97	1.05
Newspaper	0.95	1.02	1.03	1.07	1.12	1.18
State Chief Minister	0.34	0.31	0.40	0.35	0.27	0.29
Republic Day	1.06	1.06	1.06	1.07	1.02	1.01
Gandhi’s Birthday	1.21	1.21	1.20	1.21	1.20	1.22

NOTE: Entries are mean differences between the convenience and probability sample figures listed in Table 6, divided by the standard deviation in the probability sample.

**Figure 2: Distribution of State of Residence in the United States:
Census versus Convenience Samples**



**Figure 3: Distribution of State of Residence in India:
Census versus Convenience Samples**

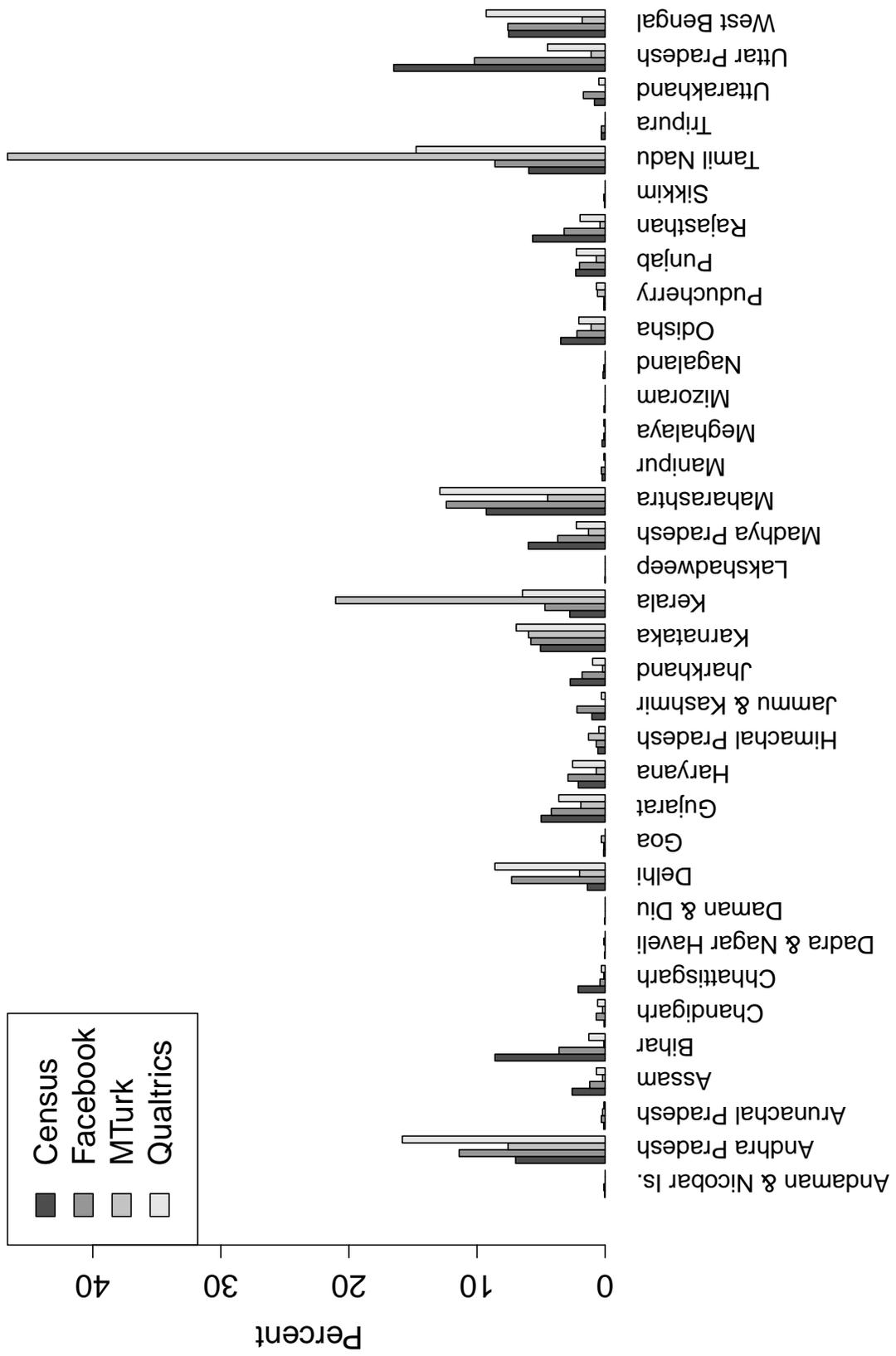
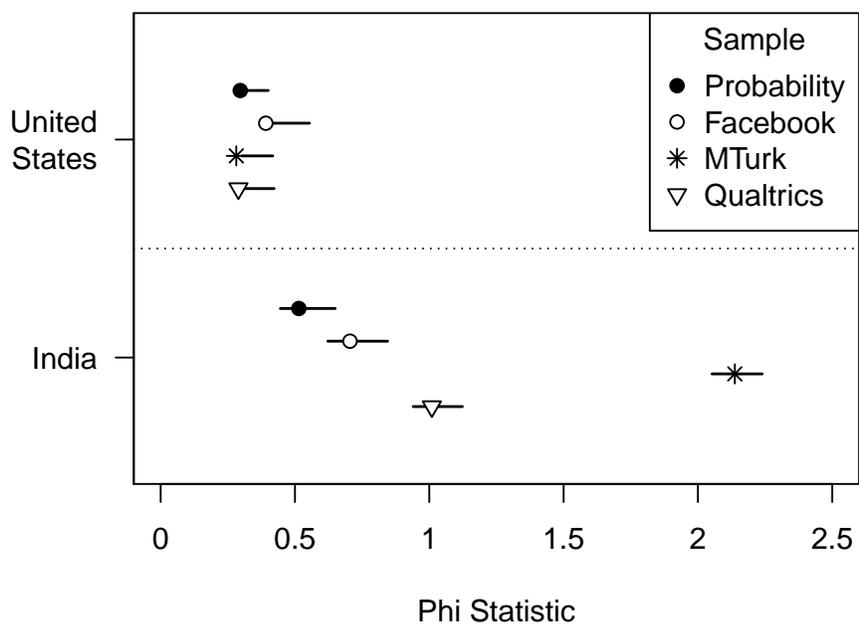


Figure 4: State of Residence: Deviation from Population Proportions



NOTE: Dots give estimates and lines indicate bootstrapped 95% confidence intervals (percentile method). Probability samples are the 2014 World Values Survey (India) and the 2012 American National Election Studies (United States).

Table 12: State of Residence: Deviation from Population Proportions

	Probability Sample	Facebook	MTurk	Qualtrics	MTurk– Facebook	MTurk– Qualtrics	Qualtrics– Facebook	Best Convenience– Probability
India	0.51 (0.45, 0.65)	0.7 (0.62, 0.84)	2.14 (2.05, 2.24)	1.01 (0.94, 1.12)	1.43 (1.26, 1.55)	1.13 (0.99, 1.24)	0.3 (0.15, 0.45)	0.19 (0.04, 0.35)
U.S.	0.3 (0.3, 0.4)	0.39 (0.38, 0.55)	0.28 (0.3, 0.42)	0.29 (0.3, 0.42)	-0.11 (-0.22, -0.01)	-0.01 (-0.08, 0.08)	-0.1 (-0.2, 0)	-0.01 (-0.06, 0.09)

NOTE: Entries are Phi statistics and their differences, with bootstrapped 95% confidence intervals (percentile method) in parentheses. Probability samples are the 2014 World Values Survey (India) and the 2012 American National Election Studies (United States).

Table 13: State of Residence: Deviation from Population Proportions

	Probability Sample	Facebook	MTurk	Qualtrics	MTurk- Facebook	MTurk- Qualtrics	Qualtrics- Facebook	Best Convenience- Probability
India	0.0038 (0.0032, 0.0048)	0.0051 (0.0046, 0.0062)	0.0156 (0.0149, 0.0163)	0.0074 (0.0068, 0.0082)	0.0105 (0.0092, 0.0113)	0.0082 (0.0072, 0.0092)	0.0022 (0.001, 0.0032)	0.0014 (0.0003, 0.0025)
U.S.	0.0127 (0.0128, 0.0171)	0.0167 (0.0165, 0.0236)	0.012 (0.0128, 0.0178)	0.0124 (0.013, 0.0181)	-0.0047 (-0.0094, -0.0003)	-0.0003 (-0.0037, 0.0033)	-0.0044 (-0.0091, 0.0001)	-0.0006 (-0.0028, 0.0035)

NOTE: Entries are Cramér's V statistics and their differences, with bootstrapped 99% confidence intervals (percentile method) in parentheses. Probability samples are the 2014 World Values Survey (India) and the 2012 American National Election Studies (United States).

Figure 5: Facebook Sample Densities by State in India

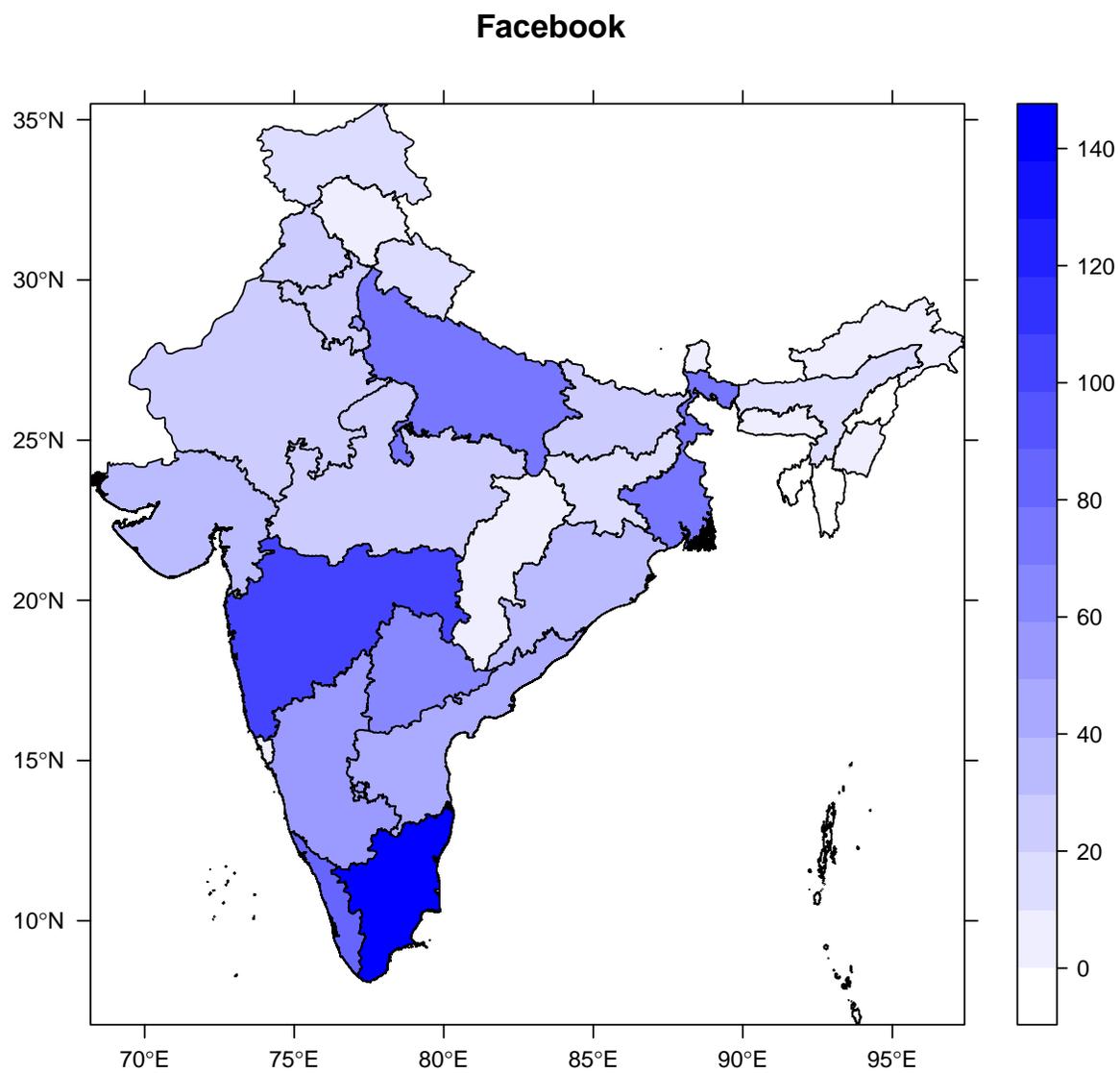


Figure 6: MTurk Sample Densities by State in India

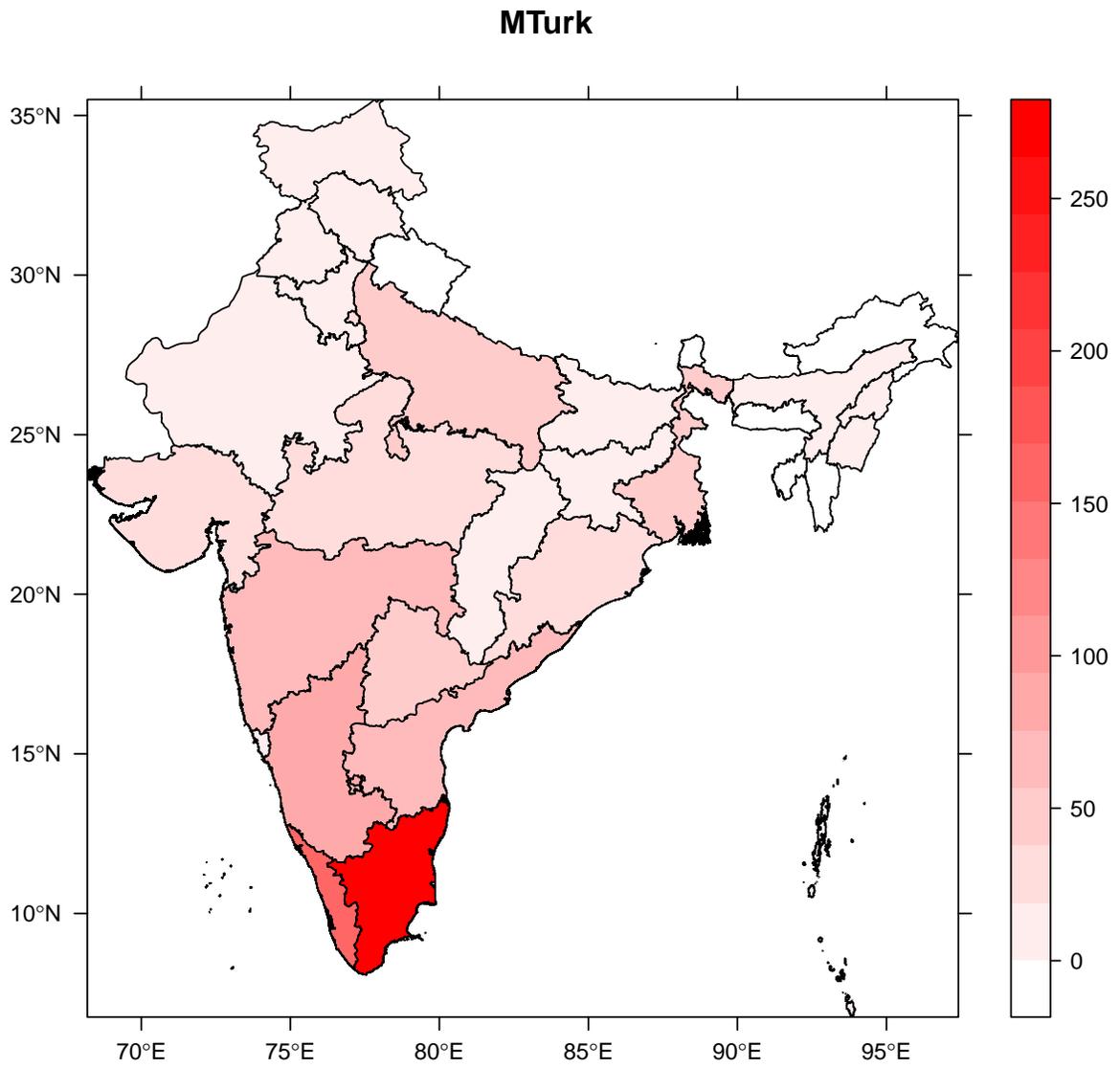
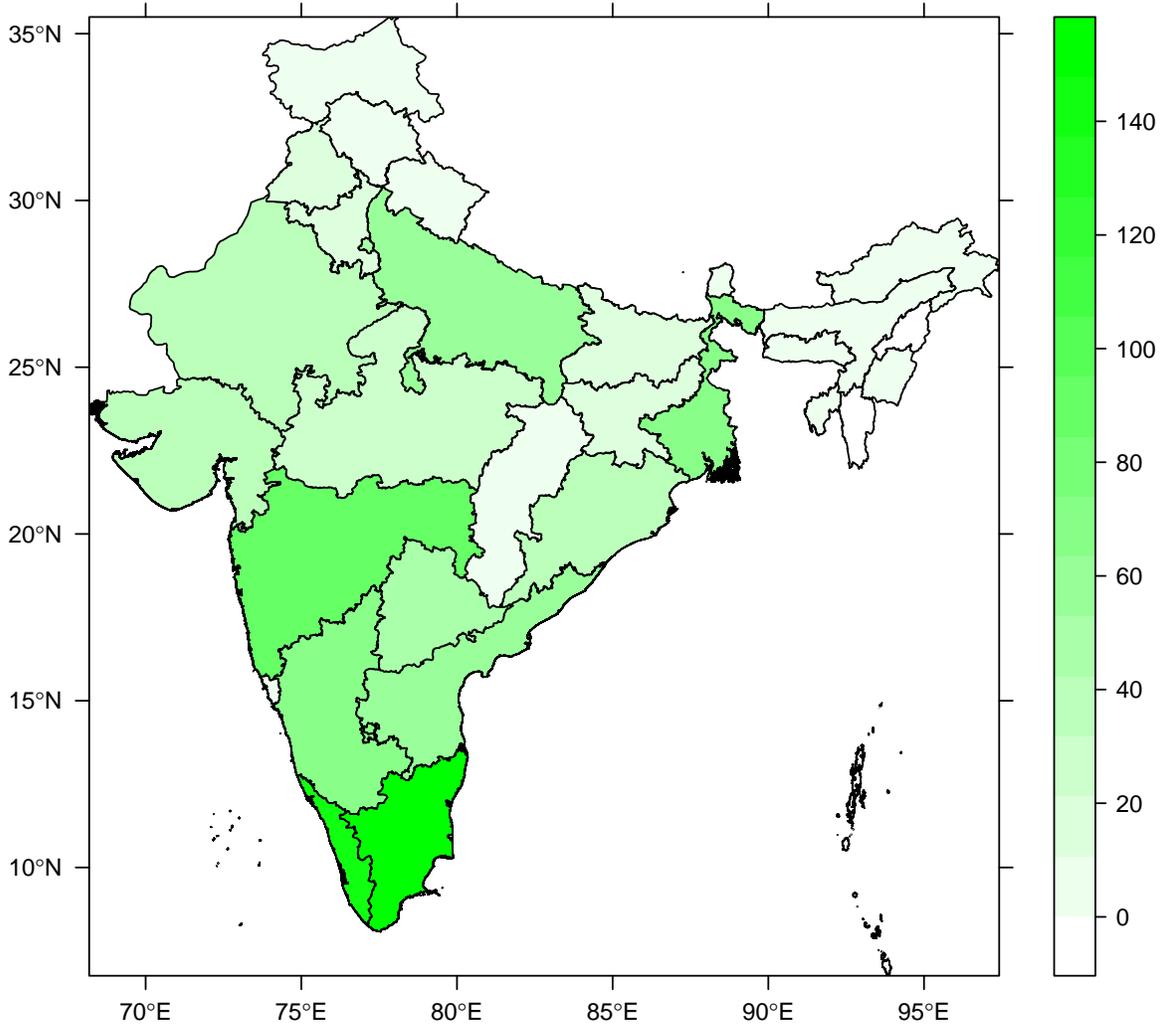


Figure 7: Qualtrics Sample Densities by State in India

Qualtrics



References

- Benjamini, Yoav and Yosef Hochberg. 1995. "Controlling the False Discovery Rate: A Practical and Powerful Approach to Multiple Testing." *Journal of the Royal Statistical Society. Series B (Methodological)* 57(1):289–300.
- Berinsky, Adam J., Michele F. Margolis and Michael W. Sances. 2014. "Separating the Shirkers from the Workers? Making Sure Respondents Pay Attention on Self-Administered Surveys." *American Journal of Political Science* 58(3):739–753.
- Tversky, Amos and Daniel Kahneman. 1981. "The framing of decisions and the psychology of choice." *Science* 211(4481):453–458.