

Recruiting Subjects for Online Surveys: Facebook versus Mechanical Turk*

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Abstract

Online surveys are increasingly popular in political science. While subjects can be recruited through commercial Internet panels, scholars often rely on one of two lower-cost methods: Amazon.com's Mechanical Turk for research in the United States and India, and Facebook advertisements when drawing subjects in other countries. Yet little work compares these various methods, perhaps because they tend to be used by scholars in different subfields. In this paper we outline a research design to compare recruitment via Facebook, Mechanical Turk, and a Qualtrics Internet panel in India and the United States, the two countries where all three methods are viable. We discuss existing research and advance hypotheses concerning demographics, political attitudes and knowledge, participant cooperation, and experimental replication. We outline a proposal to compare the various online sources to each other and to national probability samples. This research will constitute the first large-N comparison of survey sampling via Facebook and Mechanical Turk and the first to compare online convenience samples for political science research in India and the U.S.

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1 Introduction

Recent developments in survey methodology have focused renewed attention on convenience samples drawn from online sources. While subject recruitment can be outsourced to commercial Internet panels, such as those managed by Survey Sampling International (SSI) and Qualtrics, scholars often rely on one of two lower-cost, do-it-yourself methods: Facebook and Amazon.com's Mechanical Turk (MTurk). MTurk is an online labor market in which employers post bids and workers complete tasks, such as taking a survey, in exchange for small payments. Use of MTurk has exploded in political science in recent years. It is now a common source for online survey respondents in American politics (e.g., Arceneaux, 2012; Berinsky, Huber and Lenz, 2012; Christenson and Glick, 2015; Dowling and Wichowsky, 2015; Grimmer, Messing and Westwood, 2012; Healy and Lenz, 2014; Huber, Hill and Lenz, 2012), and has also been used in the study of India (Charnysh, Lucas and Singh, 2015; Dietrich and Winters, 2015). Using Facebook, scholars typically recruit survey respondents by advertising to a target demographic and inviting users to take an online survey and enter a raffle for a prize, such as an iPad. This method has been used in studies of Brazil, Chile, and Ukraine (Aytaç, Schiumerini and Stokes, 2015; Boas, 2014, Forthcoming; Samuels and Zucco, 2014) as well as in ongoing work on Chile, Ecuador, Kenya, Turkey, and Uruguay (Rosenzweig and Tsai, 2014; Zucco, Luna and Baykal, 2015).

Facebook and MTurk both have advantages and disadvantages. Facebook's primary advantages are the breadth and depth of its user base. Facebook has deep penetration rates in countries around the world, which allows for potentially diverse samples. The number of active (at least monthly) adult users is more than half the national population in Argentina, Australia, Malaysia, Taiwan, the United Kingdom, and the United States. MTurk's principal advantages are speed, cost, and ease of compensation. There is no need to buy advertising; one pays only for survey responses using a built-in mechanism. Yet MTurk's smaller, self-selected user base often raises questions about the quality and diversity of samples. In particular, a semi-professional community of survey takers generates potential concerns about prior exposure to commonly used questions, unrealistically high levels of attentiveness, and contact between subjects that might violate assumptions routinely invoked in experimental research.

An important question for those considering online convenience samples is whether the cost premium of Facebook is worth the potential improvement in terms of quality and diversity of the sample. Yet, to our knowledge, scholars have rarely asked this question. Within particular disciplines or disciplinary subfields,

one method or the other tends to predominate. Therefore, there is little basis for direct comparison. In political science research on India and the United States, the two countries where both methods are viable, we are not aware of a single study that used advertisements on Facebook (or any other social media platform) as its primary subject recruitment method.¹ Meanwhile, in some other disciplines, such as medicine and public health, Facebook is much more common (Ramo and Prochaska, 2012; Kapp, Peters and Oliver, 2013; Richiardi, Pivetta and Merletti, 2012; Lord, Brevard and Budman, 2011; Morgan, Jorm and Mackinnon, 2013; Lohse and Wamboldt, 2013; Heffner et al., 2013; Chu and Snider, 2013; Lohse, 2013) while MTurk is rarely used (Chunara et al., 2012).

This paper outlines a research design comparing survey sampling via Facebook, MTurk, and a Qualtrics commercial Internet panel in India and the United States. In each country, we plan to conduct an $N = 3000$ online survey, recruiting one-third of the respondents through each method. Questions will cover four key areas (see Sections 8 and 9 for the draft questionnaires). On a descriptive level, we plan to measure both demographics and political attitudes/knowledge. Questions in these categories are taken from recent “gold standard” surveys involving face-to-face interviews with national probability samples—primarily the 2014 General Social Survey (GSS) in the United States and the 2014 National Election Study (NES) in India—so that we can compare distributions in the online samples to those obtained using traditional methods. We also plan to measure subject attentiveness via an attention check or “screener” question (Berinsky, Margolis and Sances, 2014). Finally, we will replicate several survey experiments conducted on national probability samples (or close approximations thereof) in each country, examining which recruitment method comes closest to established benchmarks. Most of these benchmark experiments involved face-to-face interviews; our results might differ due to survey mode as well as sample composition. Hence, we will also use matching to condition on observable covariates in an effort to isolate the effect of survey mode.

Our results will enable scholars asking a wide variety of questions to better assess the tradeoffs between Facebook, MTurk, and standard commercial Internet panels, as well as between relatively inexpensive online convenience samples and more costly, nationally representative sources. They will also, with moderate extrapolation, enable scholars working in “Facebook-only” countries to benchmark their work to MTurk studies conducted primarily in the U.S.

¹Political scientists have used advertisements or other messages on Facebook to administer experimental treatments (Bond et al., 2012; Broockman and Green, 2014; Grimmer, Messing and Westwood, 2012; Ryan, 2012) but this method is distinct from subject recruitment for online surveys hosted off-site, and it is less broadly applicable.

This study builds upon existing methodological research on online convenience samples in political science and other disciplines. Berinsky, Huber and Lenz (2012) compare MTurk-recruited samples to offline convenience samples, Internet panels, and face-to-face probability samples in terms of demographics, political attitudes, political knowledge, and the ability to replicate experiments. Huff and Tingley (2014) conduct a similar comparison of MTurk to the 2012 Cooperative Congressional Election Survey (CCES), holding constant the online mode of the survey and its dates of application. Leeper and Mullinix (2015) conduct parallel framing experiments across different samples and survey modes, including MTurk and a small ($N = 80$) sample recruited through advertisements on Craigslist and Facebook. Likewise, Antoun et al. (2015) compare subject recruitment via several online sources, including MTurk, Google AdWords, and a very small ($N = 9$) Facebook sample. Finally, Samuels and Zucco (2013, 2014) evaluate Facebook as a subject recruitment tool in Brazil and show that similar experimental results can be obtained as when using a national probability sample.

Our study moves beyond existing methodological research in terms of its comparisons, both across online recruitment methods and across countries. First, we will gather large samples from Facebook as well as MTurk and Qualtrics, allowing for more confident comparisons among these methods than others have been able to make. Second, we break new ground with a comparison of India and the United States. While studies in other disciplines have compared the demographics of MTurk users in these two countries (Antin and Shaw, 2012; Kaufmann, Schulze and Veit, 2011; Chandler and Kapelner, 2013; Ipeirotis, 2010; Ross et al., 2010; Litman, Robinson and Rosenzweig, 2014), none have focused on political variables, sought to replicate experimental results from India, or also examined other recruitment methods such as Facebook. Through a cross-national comparison, the study will speak not only to the difference between the narrow recruitment pool of MTurk and the much broader pool of Facebook, but also to how this difference itself may vary with levels of socioeconomic development. Scholars considering alternative crowdsourced labor markets with good coverage beyond India and the United States, such as CrowdFlower or CrowdGuru, should find this cross-national comparison helpful in evaluating their own choices for subject recruitment.

The following sections of this paper outline our research design and the hypotheses we intend to test. We first discuss the mechanics of recruiting subjects through Facebook, MTurk, and Qualtrics Internet panels in each country. We then discuss findings from existing literature, and lay out our own hypotheses, with respect to demographics, political attitudes and knowledge, subject cooperativeness, and replicating prior survey

experiments. The discussion focuses on comparing Facebook and MTurk to each other and to nationally representative probability samples; we include a Qualtrics Internet panel as an additional benchmark but do not have strong priors as to how it will compare to these other recruitment methods. Where relevant, we present details from our own prior research, including three Facebook-recruited surveys in Latin America and two MTurk-recruited panel studies in the United States.

2 Details of Subject Recruitment

Recruiting subjects for online convenience samples requires notifying a study population of the availability of a survey and offering some incentive for participation. Facebook, MTurk, and commercial Internet panels differ significantly in terms of the procedures for accomplishing these tasks and the costs of doing so.

Amazon.com's Mechanical Turk is an online labor market in which workers complete small tasks (Human Intelligence Tasks, or HITs) in exchange for payment from employers. Notifying potential workers of the availability of a survey entails no cost; employers simply post the description of a HIT, including the individual payment offered, and invite workers to participate. In this sense, subject recruitment on MTurk is akin to visiting a day laborer hiring location and announcing a job; available, motivated workers have already shown up and are looking for opportunities. Those who click on the link for a HIT are redirected to an online survey hosted on an external site, such as Qualtrics, SurveyGizmo, or SurveyMonkey. Upon completion, respondents are given randomly generated completion codes that they enter into a box in their MTurk account in order to claim payment. The employer then transfers the agreed-upon payment from her MTurk account to that of each worker. Hence, compensating subjects (and paying a percentage fee to Amazon.com) is the only cost to recruiting via MTurk. All payments take place within the MTurk system, and subjects remain anonymous to researchers, identified only by their MTurk worker identification number. Workers can withdraw funds from their accounts in the form of an Amazon.com gift certificate, but transfers to bank accounts are allowed only in the United States and India, a factor that has limited the service's uptake in other countries.

Recruiting survey respondents via advertisements on Facebook (or any other social media platform) differs from MTurk in several respects. First, there is no ready pool of interested workers; one must reach out to potential subjects, who are typically using the service for some reason other than employment. Any Facebook user can create an advertisement, including text and a small image, to be placed in the right-hand

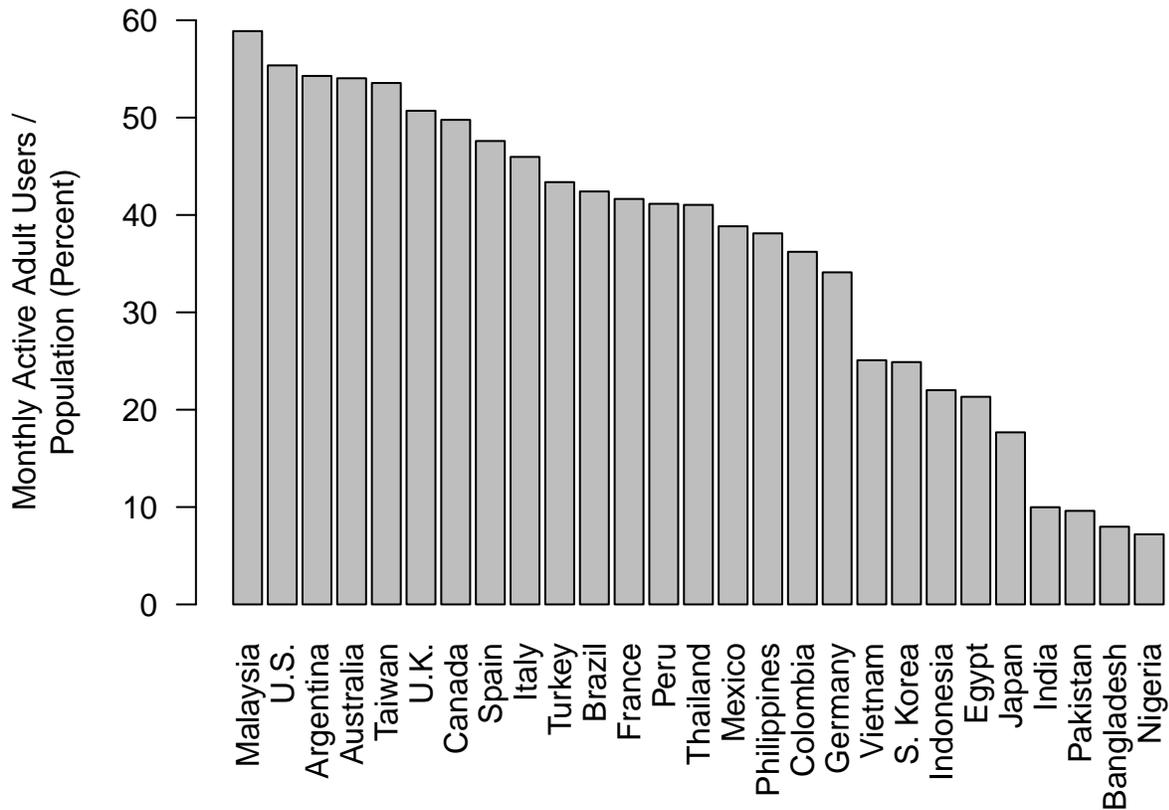
column of the browser window on users' desktop computers and tablets and/or featured in the newsfeed on computers, tablets, and mobile phones. Users clicking on the advertisement would be directed to the online survey hosted on an external site. Facebook advertisements can be targeted to particular demographics based on self-declared information in user profiles—age, gender, and country for all users, and additional information, such as education and state or city of residence, for those who choose to provide it. One can also target based on less objective information about users, gleaned by Facebook from their online behavior. For example, one could show advertisements to Democrats, which would include not only those who state a partisan preference in their profile, but also those that Facebook's algorithm identifies as Democrats based on their posts, page likes, and so on.

The need to advertise in order to recruit respondents means that Facebook is a more expensive option than MTurk. Payment for Facebook advertisements is based on a bid system; each ad competes with other ads that could potentially be shown to a particular user. Advertisers can bid on the basis of cost per click, cost per thousand impressions (ad views), or cost per action taken on the target website, which Facebook is notified about using embedded Javascript code. For researchers, the latter option allows Facebook to dynamically adjust its advertising based on what it learns about the types of users who are most likely to complete the survey.

The upside to paying Facebook for advertising to recruit survey respondents is that one has the potential to reach a much broader user base through Facebook than through MTurk. The total number of MTurk workers is routinely estimated to be about 500,000. In contrast, Facebook claims more than 1 billion users around the world. As shown in Figure 1, the number of monthly active adult users exceeds 50% of the total population in six countries. Even in some poorer countries with lower penetration rates, Facebook potentially reaches a huge population; there are 100–150 million Facebook users in India, second only to the United States. Advertisements are unlikely to be seen by less frequent users, and they will not be shown to everyone, but the effective reach is still vast. In Boas's 2013 survey in Chile (Boas, Forthcoming), ads were shown to 3 million unique users, or 17 percent of the population; in Brazil in 2014, they were shown to 8.8 million unique users, or 4.4 percent of the population.

Recruiting via Facebook also differs from MTurk in that there is no built-in mechanism for compensating subjects. Compensation options are up the researcher, but individual online payments are more problematic than with MTurk. One could use a third-party site such as PayPal, but subjects might not be signed up in

Figure 1: Facebook Penetration per Country, August 2015



advance, and those who are might be uninterested in small payments via a service that they use infrequently (if at all) for the purpose of receiving funds. A more attractive option is to offer a raffle prize as an incentive for participation. Upon completion of the survey, those wishing to enter the raffle can be redirected to a separate survey where they are asked to provide their contact information for the purpose of choosing a winner. Separating identifying information from survey responses facilitates IRB review. After the survey has closed, researchers can randomly choose one or more winners from those that have entered the raffle, using the contact information provided to deliver the prize.

For our head-to-head comparison, we plan to make both recruitment methods as similar as possible. In particular, the expected value of individual compensation in the Facebook raffle will be equal to the individual payments to MTurk workers. We plan to award one iPad Air 2 (retail value \$499) per 500 subjects recruited by Facebook in the U.S., and one iPad Mini 2 (retail value 20,099 Rupees, or \$309) per 1000 subjects in India. Facebook advertisements are shown in Figure 2. MTurk respondents will each be

Figure 2: Facebook Advertisements: United States (Top) and India (Bottom)



University Research Study

bostonu.qualtrics.com

10-minute online survey about current events.
Win an iPad Air 2 (1 in 500 chance).



University Research Study

bostonu.qualtrics.com

10-minute online survey about Indian current
events. Win an iPad Mini (1 in 1000 chance).

compensated \$1 in the United States and 20 Rupees (31 cents) in India. These rates are at the high end of the range that researchers normally pay MTurk workers in each country for a 10-minute survey.

An unavoidable implication of these differing compensation methods is respondents who agree to 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 plan to include a version of the common “Asian Disease” question in psychology, using only the “lives saved” framing (Tversky and Kahneman, 1981). We hypothesize that Facebook-recruited respondents will be more likely to favor the risky option for combatting this hypothetical disease.

Other aspects of recruitment using each method will follow standard practice in prior political science

research. We plan to advertise the MTurk HIT to workers with a 95% or higher approval rating, as is commonly done. Facebook advertisements will be targeted broadly, to all adults in India and the United States using either desktop computers or mobile devices. In order to minimize advertising costs, we plan to optimize the advertisements for survey completions and link them to a sponsoring Facebook business page set up specifically for the survey. As with prior studies of India (Charnysh, Lucas and Singh, 2015; Dietrich and Winters, 2015), our online surveys there will be administered in English, a common second language among the computer literate. MTurk’s user interface is only available in English, and 97% of Indians on Facebook use the service in English, while only 2% opt for Hindi.²

To compare Facebook and MTurk to another common and relatively inexpensive alternative, we plan to recruit an additional 1000 respondents in each country through a Qualtrics Internet panel. Internet panels consist of respondents who have been recruited by commercial firms to participate in a series of online surveys (typically involving market research) in exchange for incentives such as cash, airline miles, gift cards, redeemable points, sweepstakes entrance, and vouchers. Compensation and recruitment are handled by the third-party firm, so researchers have no direct control over how much subjects are paid or who is targeted, apart from defining the audience (e.g., Americans aged 18 and older) and specifying certain quotas. Rather, they pay the panel provider a set price per completed survey. For our $N = 1000$ surveys, Qualtrics has quoted a price of \$5 per respondent in the United States, and \$6 per respondent in India. These costs are 5–18 times higher than what we plan to spend on MTurk recruitment, yet much lower than gathering a nationally representative sample through more traditional methods.

For our Qualtrics-recruited sample, we have opted not to use quotas even though several are included in the base price. Rather, we plan to gather a raw sample through each recruitment method to better understand what sorts of subject pools they draw from. The bulk of our analysis will be conducted on these raw samples. However, we also plan to weight each sample to achieve representativeness on age groups, sex, and region of the country in order to approximate what might have been accomplished via quota sampling.

3 Demographics

A first objective of our surveys is to compare the demographics of convenience sample respondents to those of the national population of each country. Prior studies examining the demographics of MTurk workers in

²https://www.facebook.com/ads/audience_insights/

India and the United States have focused on differences between these two countries. We are less interested in a direct, cross-national comparison of respondents drawn from MTurk or Facebook; the demographics of the United States and India differ in numerous ways, so it is unsurprising that convenience samples of online survey respondents from each country should differ as well. Rather, our primary purpose is to examine how each convenience sample compares to its own national benchmarks.³ Hence, we draw demographic survey questions from recent surveys involving face-to-face interviews with national probability samples—primarily the 2014 General Social Survey (GSS) in the United States and the 2014 National Election Study (NES) in India. Where possible, these questions have also been designed to be comparable to each country’s most recent national census.

More research has examined the demographics of MTurk-recruited convenience samples in each country than of those recruited from Facebook. In the United States, MTurk wages are generally insufficient for making a living, so the service tends to attract part-time workers looking to supplement other sources of personal or household income. Given this user profile, MTurk survey respondents tend to have a higher proportion of females than the U.S. population and to have lower incomes. Because the work requires some technical comfort, they have higher-than-average education levels and are younger than the U.S. population. Consistent with the age bias, there are also more who have never been married and who have no religious affiliation. In terms of race and ethnicity, MTurk samples tend to have fewer Blacks and Hispanics than nationally representative samples, though they do not consistently differ in the percentage of Whites (Berinsky, Huber and Lenz, 2012; Christenson and Glick, 2015; Huff and Tingley, 2014; Ipeirotis, 2010; Lawson et al., 2010; Leeper and Mullinix, 2015; Ross et al., 2010). Finally, Huff and Tingley (2014) found that an MTurk-recruited sample was similar to the nationally-representative CCES in terms of rural versus urban residence of respondents.

We hypothesize that our U.S. MTurk sample will differ from national probability samples as they have done in these previous studies. Specifically, the sample will tend toward younger, more educated and lower income residents; will have larger shares of women, single people, and those with no religion; and will contain fewer Blacks and Hispanics. We do not expect significant differences with respect to the proportion of Whites or rural versus urban residence.

³For example, Ipeirotis (2010, 5) reports that MTurk “workers based in India have significantly lower incomes” than those in the U.S., based on responses to a question that measures income using identical, U.S.-dollar-denominated scales in each country. This finding is to be expected given the lower cost of labor in India, and it is misleading without also comparing to national benchmarks.

In India, MTurk users have a different profile. Given the lower cost of living, MTurk pays comparatively well and often constitutes a primary source of income for its workers (Ipeirotis, 2010). Because the service requires English-language fluency and technological skills, MTurk tends to attract a similar elite class of workers as those employed in call centers or data-entry operations. In contrast to the U.S., therefore, Indian MTurk workers have higher incomes than the national population, are disproportionately male, and are more likely to come from urban areas (Antin and Shaw, 2012; Chandler and Kapelner, 2013; Charnysh, Lucas and Singh, 2015; Dietrich and Winters, 2015; Ipeirotis, 2010; Lawson et al., 2010; Ross et al., 2010). In some other respects, they differ from national benchmarks in similar ways as their U.S. counterparts: they are younger, more highly educated, and more likely to be single than the national population. Finally, Charnysh, Lucas and Singh (2015) found that upper caste members were overrepresented among their Indian MTurk convenience sample. We have similar theoretical expectations for our sample with respect to each of these categories.

We have fewer priors with respect to the demographics of Facebook-recruited samples in each country, due to the dearth of extant research. Based on the data that Facebook provides on its own users⁴ our expectations are the same as with MTurk in terms of sex, age, marital status, and education in each country. The main way we expect the Facebook sample to differ concerns income in the U.S. Facebook users are generally engaging in leisure, while American MTurk users are actively seeking low-wage work. Correspondingly, incomes of Facebook users tend to be higher than those of the U.S. population. The median income of U.S. Facebook users over age 18 is estimated to be in the range of \$75,000–100,000; the corresponding figure from the 2013 American Community Surveys from the U.S. Census Bureau is \$52,250.

Each of our comparisons of central tendencies with demographic variables will be based on two-sample t-tests, pooling the convenience and national probability samples, or one-sample t-tests, comparing the MTurk or Facebook estimate to a known population figure. Since our hypotheses are directional in nature, we specify one-tailed tests. To score rural versus urban residence in the United States, we will gather respondents' 5-digit ZIP codes and merge in the United States Department of Agriculture Rural-Urban continuum codes and population (logged) of the corresponding county or county-equivalent. In India, we will gather PIN code and merge in the population (logged) of the corresponding sub-district (generally known as a tehsil, taluka, or mandal).

⁴https://www.facebook.com/ads/audience_insights/

We are also interested in how the geographic distribution of our online samples compares to that of each country's national census. In several recent MTurk-recruited samples in India, there have been unusually high concentrations of respondents from the two southern states of Kerala and Tamil Nadu (Figure 3). Anecdotally, patterns such as these have been attributed to demographic factors—southern India has higher levels of education, English-language fluency, and Internet infrastructure and, hence, a higher concentration of the technological elite—as well as the existence of MTurk “factories”—call-center type operations where numerous workers participate in the same survey from a single physical location. If demographics are driving the unrepresentativeness, we ought to see similar patterns among Indian Facebook users, who are also likely to be drawn disproportionately from the technological elite. In fact, the geographical distribution of the population of Indian Facebook users is much closer to that of the national population. Likewise, the geographical distribution of respondents from these surveys does not closely track that of Indians who have a high school education or speak English as a mother tongue. Meanwhile, the geographical distribution of Indian Facebook users is closer to both of these national benchmarks (Figures 4 and 5). These results suggest that the “MTurk factory” phenomenon might account for at least some of the concentration in Kerala and Tamil Nadu.

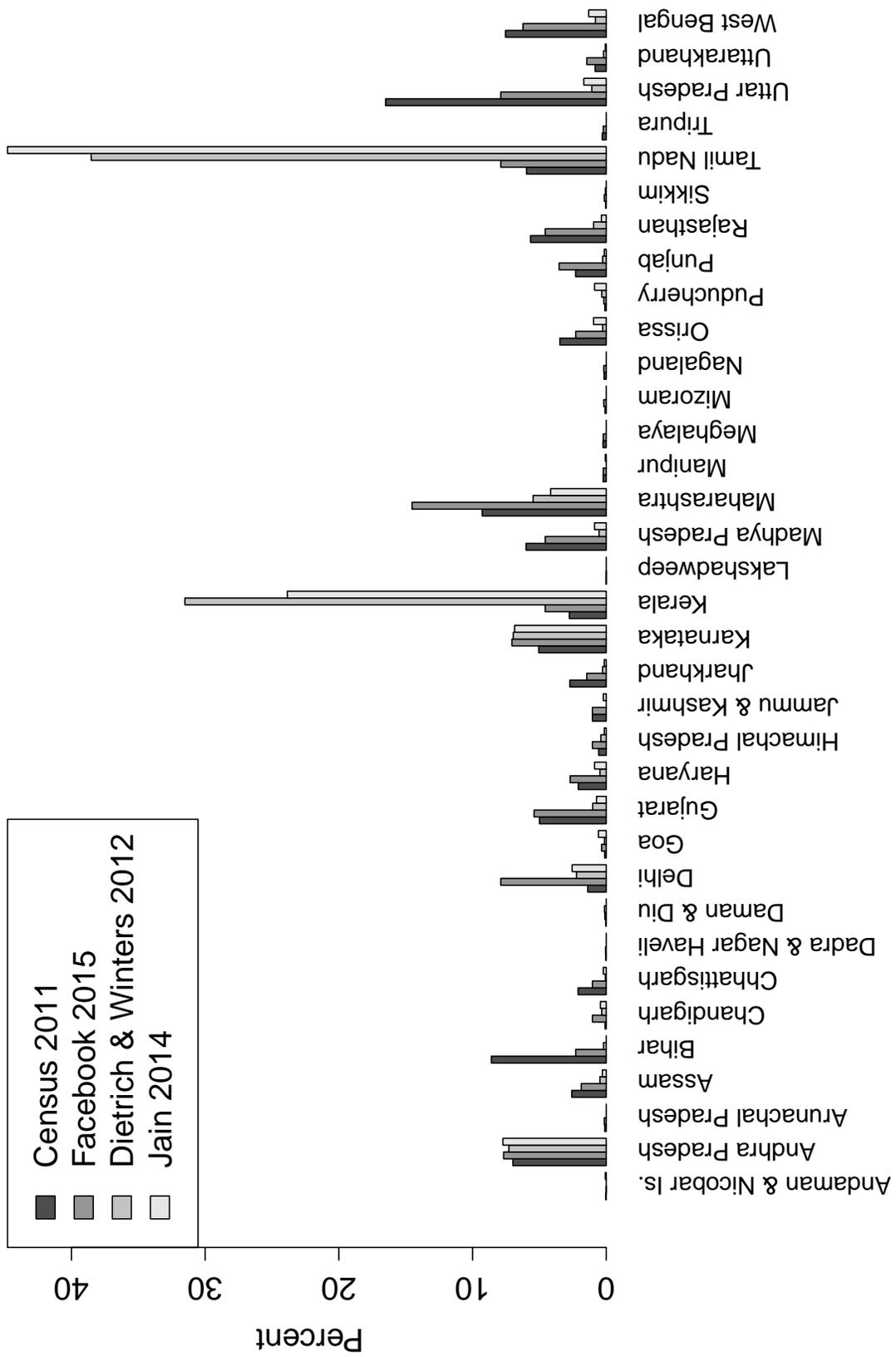
In the United States, the geographical distribution of respondents from a recent MTurk-recruited survey (Berinsky, Huber and Lenz, 2012) deviates somewhat from that of the U.S. population, though much less severely than in India. Still, we find that the population of U.S. Facebook users is closer to the general population in terms of the percentage living in each state (Figure 6).

Based on these findings, we hypothesize that a Facebook-recruited sample will be much more geographically representative of the population than an MTurk-recruited sample in India and will be slightly more representative in the U.S.⁵ To measure how each sample compares to the Indian or U.S. population in terms of state of residence, we will calculate the Cramér's V goodness-of-fit statistic. To assess whether one convenience sample comes significantly closer than the other to the population distribution, we will benchmark the difference in Cramér's V statistics.

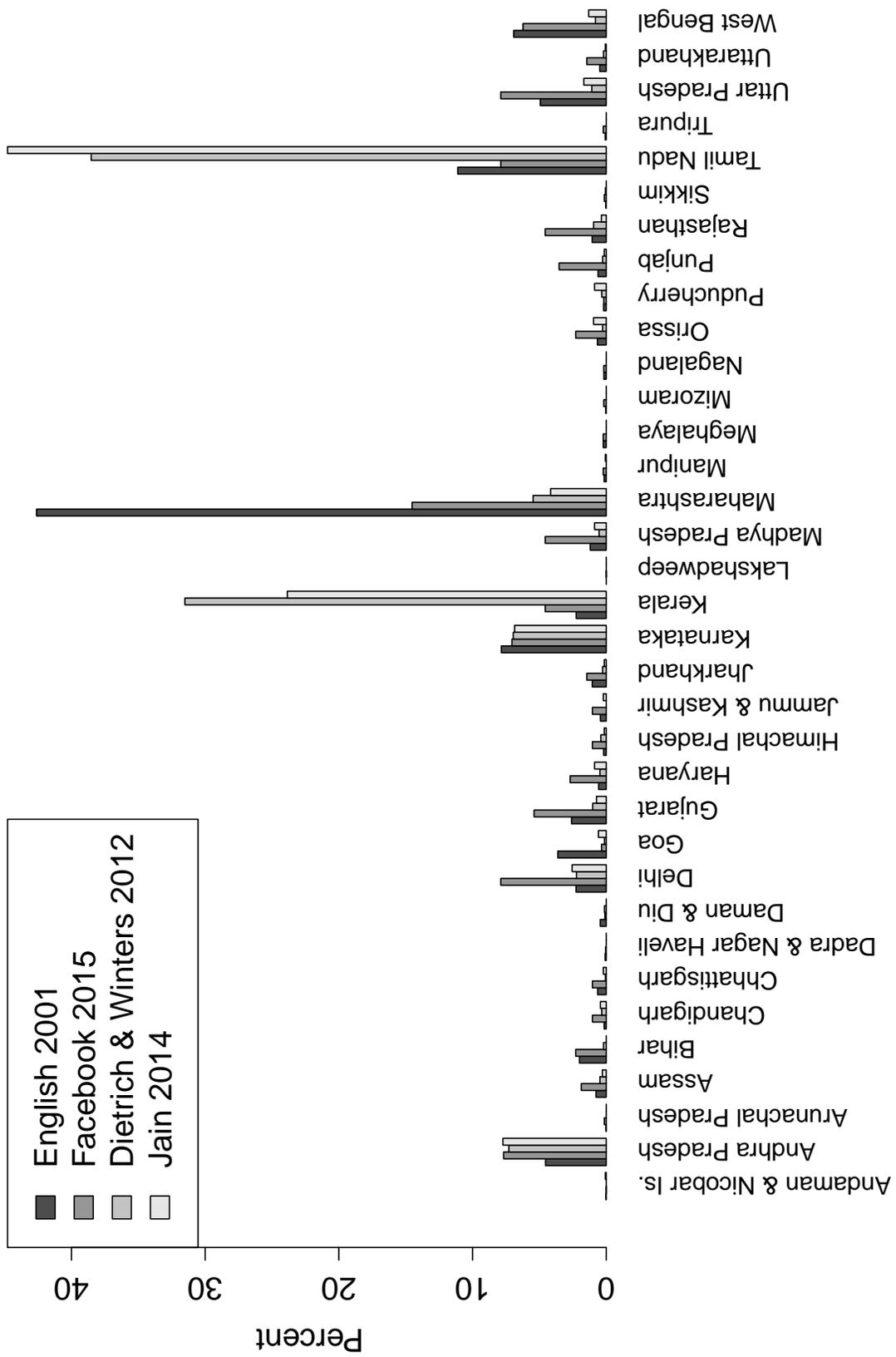
If the “MTurk factory” phenomenon accounts for the overrepresentation of Indian respondents from states like Kerala and Tamil Nadu, we would expect respondents from these states to be much more geographically clustered in the MTurk sample than in the Facebook sample. To test this hypothesis, we will calculate and

⁵Facebook-recruited samples of convenience will not necessarily match the demographics of the Facebook-recruited population in each country, but, lacking data from prior Facebook-recruited samples, these population figures are all we can compare to.

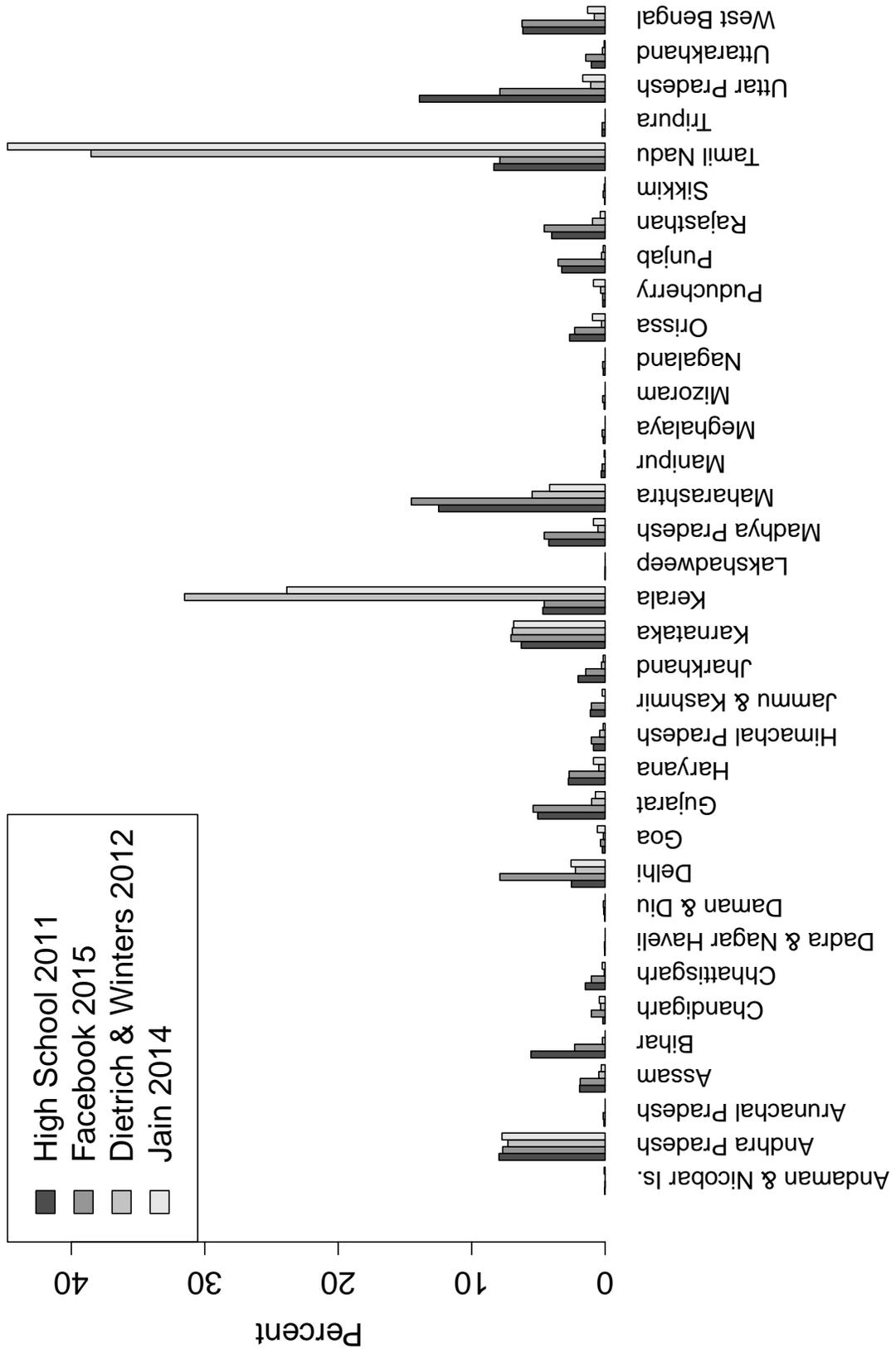
**Figure 3: Distribution of State of Residence:
Census, Facebook Users, and Two MTurk Surveys in India**



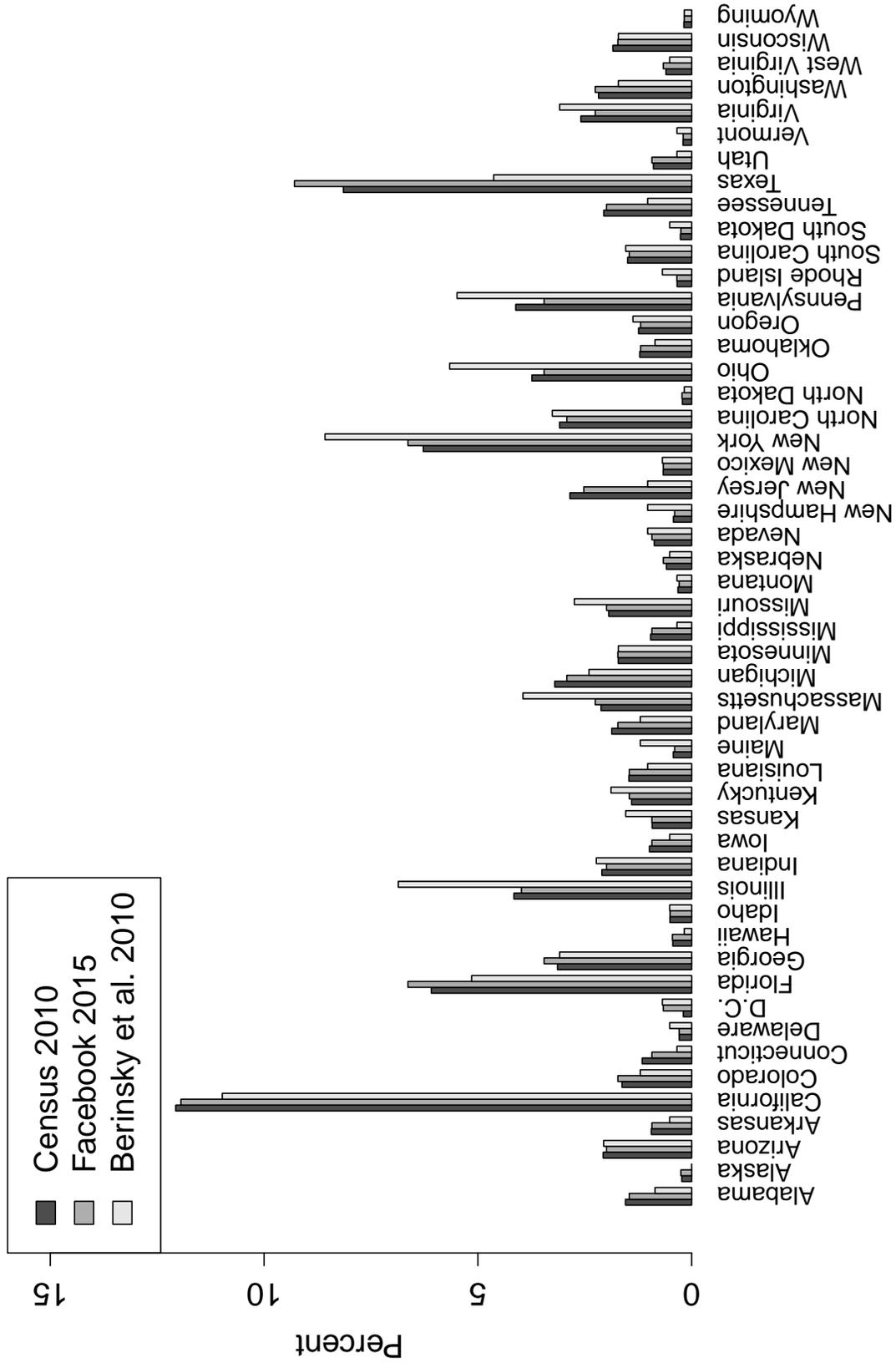
**Figure 4: Distribution of State of Residence:
High School Graduates, Facebook Users, and Two MTurk Surveys in India**



**Figure 5: Distribution of State of Residence:
Native English Speakers, Facebook Users, and Two M Turk Surveys in India**



**Figure 6: Distribution of State of Residence:
Census, Facebook Users, and an MTurk Survey in the U.S.**



compare spatial distance measures among respondents from the states that are most overrepresented in the MTurk sample, using the latitude and longitude associated with each respondent's PIN code in the Geonames database (<http://www.geonames.org>). We will bootstrap the difference in average distance statistics to assess whether MTurk respondents are significantly more clustered than those from Facebook.

4 Political Attitudes and Knowledge

Of particular interest to political scientists is how convenience samples deviate from national probability samples with respect to substantive (not just demographic) political variables. As with demographics, our surveys draw standard questions from face-to-face national probability samples in order to measure interest in politics, ideology, voter registration, turnout, vote in previous elections, party identification, news consumption, and political knowledge. In the latter category, we include separate questions measuring civics knowledge (presidential term limits and length of a senatorial term in the U.S.; identifying major national holidays in India), identification of political leaders, and, in the United States, a policy familiarity question focusing on Medicare. Our interest is in how online convenience samples compare to nationally representative ones.

MTurk users in the U.S. are not drastically different from the U.S. population in political terms, though they are more liberal in ideology, perhaps because of their lower than average incomes and higher than average education. There are also more Democrats and fewer Republicans than in representative samples. MTurk workers are slightly less interested in politics than the average American, but they consume more news and have greater civics knowledge. Political participation is similar; they are no more or less likely to be registered to vote or to have voted in the last presidential election (Berinsky, Huber and Lenz, 2012; Christenson and Glick, 2015; Huff and Tingley, 2014; Leeper and Mullinix, 2015). Following prior research, we hypothesize that our MTurk sample will differ from national probability samples with respect to ideology, partisanship, political interest, news consumption, and civics knowledge, but not with respect to registration or turnout. Extrapolating from these findings, we also expect that they will be more likely than the average American to have voted for Obama in 2012 and will have more familiarity with political leaders and policy issues.

While U.S. MTurk workers lean to the left, those in India are further to the right than one finds in nationally representative samples, likely driven by their higher-than-average incomes. In a 2012 survey by Dietrich

and Winters (2015), average ideological self-placement was fairly normally distributed with a mean of 5.8 on a 10-point scale, whereas in the 2014 World Values Survey (WVS), there was a large point mass on the far left and a mean of 5. Following these results, we hypothesize that our Indian MTurk respondents will be further to the right than those from nationally representative samples and that they will be more likely to have voted for the Bharatiya Janata Party (BJP), the more right-wing of India's two major parties, in 2014. In the Dietrich and Winters (2015) survey, MTurk respondents also identified with political parties at higher rates than the national average. In line with these findings, and with the general profile of Indian MTurk workers as a highly educated, urban elite, we expect higher rates of party identification, news consumption, civics knowledge, and familiarity with political leaders. We do not have strong priors with respect to registration, turnout, or interest in politics.

For Facebook, limited prior research means that we have weaker theoretical expectations. The ideological distribution of U.S. adult Facebook users, measured on the basis of political page likes (Bond and Messing, 2015, 68), is similar to that of the MTurk convenience sample analyzed by Berinsky, Huber and Lenz (2012, 360): bimodal, and to the left of the U.S. population. Hence, we hypothesize that, as with MTurk, our Facebook sample will be more leftist than a nationally representative sample. Given the general expectation of demographic similarities between MTurk and Facebook users in both India and the U.S., we hypothesize that Facebook and MTurk users will differ from nationally representative samples in a similar fashion with respect to other political variables as well.

5 Subject Cooperativeness

Because online surveys are self-administered and generally offer an incentive for completion, researchers are limited in their ability to force subjects to cooperate with instructions. Respondents may be motivated to skim instructions and answer questions quickly or to ignore the question text entirely and provide random or non-varying answers (e.g., "always choose c."). Without prompting from an in-person interviewer, respondents may also be more likely to choose a "don't know" option, especially when asked to provide personal information. Inducing subjects to cooperate with survey procedures and measuring their attentiveness to instructions and question text are thus important considerations in any online survey. Instrumental manipulation checks, or screener questions, are routinely used for this purpose. These trick questions, such as "have you ever had a fatal heart attack" or "what political office do you personally hold," can identify

respondents who are not paying attention and can also stimulate greater attentiveness (Berinsky, Margolis and Sances, 2014; Peer, Vosgerau and Acquisti, 2014).

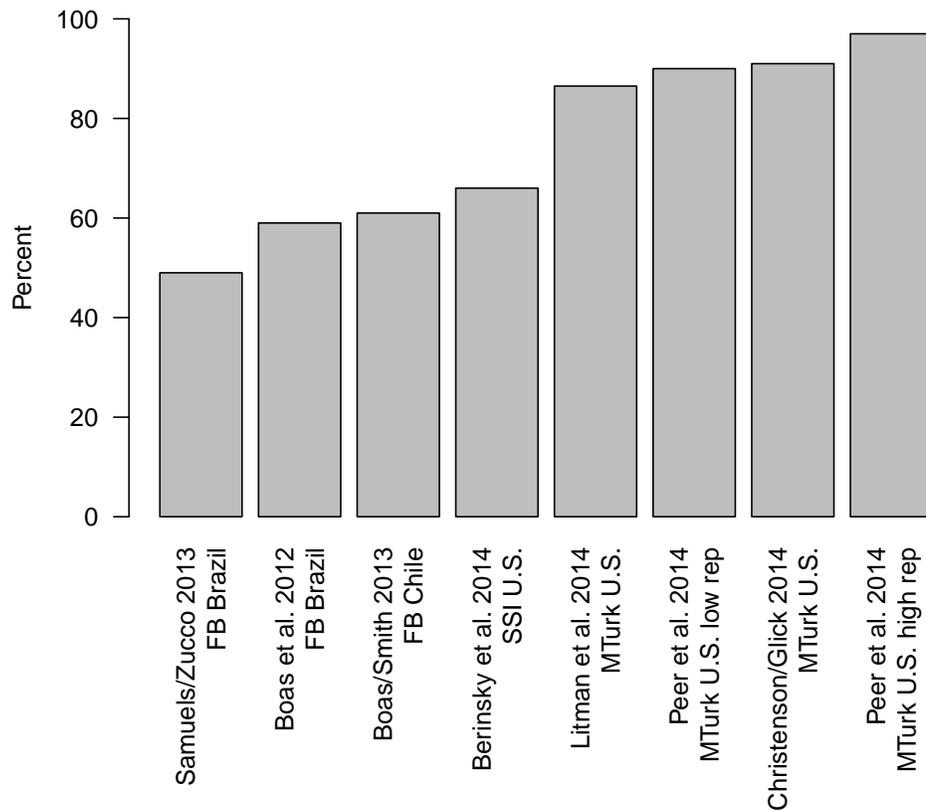
In the United States, MTurk workers consistently pass screeners at higher rates than other online respondents. Figure 7 shows the screener passage rate, averaged across all separate screeners in a survey, for three Facebook-recruited surveys in Latin America, a nationally representative Internet panel from SSI in the United States, and four MTurk-recruited surveys in the U.S. The screeners included in these surveys vary in difficulty, as well as the degree to which respondents can unintentionally provide a passing answer, so comparisons among them are not as informative as if questions were held constant across surveys. Nonetheless, a clear pattern emerges. MTurk screener passage rates range from 0.85 to 0.97, much higher than those of the other surveys (0.49 to 0.66). Higher screener passage rates in MTurk-recruited samples are sometimes attributed to selection procedures; it is common to advertise HITs only to workers with an approval rating above 95%, excluding those who may have had their work rejected more often because they fail screener questions. However, the screener passage rate among low reputation workers surveyed by Peer, Vosgerau and Acquisti (2014) was also higher than that of non-MTurk online samples.

MTurk workers in the United States have also been shown to be more compliant with survey procedures in other ways. Antoun et al. (2015) found that they provided fewer “don’t know” answers and were less likely to skip personal information questions, such as cell phone number and income, than those recruited via Google AdWords.

The greater cooperativeness of MTurk survey respondents is often touted as an advantage of this recruitment method, and it is routinely attributed to their professional incentives. Because payment often depends upon approval of work, and future work opportunities rely on having a high approval rating, MTurk workers are motivated to follow instructions carefully.

Yet the superior performance of U.S. MTurk workers on screener questions can also be due to a less positive feature of this respondent pool: nonnaïvité and contact among respondents (Chandler and Kapelner, 2013). Since many MTurk workers use the service as a major source of income, they often take multiple surveys; some report having participated in tens of thousands of studies (Marder and Fritz, 2015). Screener questions are often reused, and frequent survey takers learn to recognize them. Moreover, many MTurk workers participate in online forums where they discuss common screener questions and other features of

Figure 7: Average Screener Passage Rates



surveys that could be used to deny payment.⁶ Browser plug-ins are also available to highlight words that commonly appear in screener questions.

The unusually high screener passage rates among U.S. MTurk workers do not seem to be mirrored among those in India. Litman, Robinson and Rosenzweig (2014) obtained an average passage rate of 61% among Indian respondents, and only 46% for the harder of their two screeners, compared to 87% and 82%, respectively, in the United States. Lawson et al. (2010) also reported much lower screener passage rates among Indian MTurk workers than among those from the U.S. Since MTurk is used less frequently for survey research in India than in the U.S., MTurk workers are probably less attuned to screeners in general and also less likely to have discussed the answers to specific questions prior to taking the survey.

To measure subject attentiveness, we plan to use a single screener, a variation on the “interest” question used by Berinsky, Margolis and Sances (2014). Our question asks respondents to choose from a drop-down menu the most serious problem facing the country; however, buried in the instructions is a sentence telling

⁶For example, see <http://turkernation.com/showthread.php?23699-Lily-pads-and-bats-amp-balls-what-survey-answers-have-you-memorized-due-to-exposure>.

them to ignore the question and choose a blank answer choice at the bottom of the list (which respondents would be unlikely to choose if they were answering randomly or naively).⁷ The question wording is the same for respondents in India and the U.S.; only the list of problems in the drop-down menu varies between countries. For U.S. respondents, passage rates for this screener can be directly compared to those obtained by Berinsky, Margolis and Sances (2014) for a nationally representative Internet panel.

In line with existing research, we hypothesize that screener passage rates for the U.S. MTurk sample will be significantly higher than those of the U.S. Facebook-recruited sample as well as those in the nationally representative sample analyzed by Berinsky, Margolis and Sances (2014). In India, where MTurk workers are less attentive than in the U.S., we do not expect Facebook and MTurk passage rates to differ from one another. However, both should be lower than that of U.S. MTurk workers.

Following the findings of Antoun et al. (2015), we also hypothesize that we will observe differences between Facebook and MTurk in rates of survey drop-out and providing “don’t know” responses to personal information questions. To measure the latter, we will randomly assign half of the sample to receive a “don’t know” option on the income question. We hypothesize that U.S. Facebook respondents will be more likely than U.S. MTurk respondents to use the “don’t know” option on this question and also to quit the survey (at any point) without finishing it. “Don’t know” rates among Facebook users should also be higher than in face-to-face surveys of a national probability sample, given the reduced pressure of providing a valid answer when interacting with a computer.

Finally, our survey includes two questions intended to directly measure nonnaïvité and contact among respondents. One asks whether respondents have discussed any aspect of the survey with anyone who has already taken it; another asks how often they take online surveys about politics. We expect significantly higher rates of prior discussion and more frequent survey-taking among U.S. MTurk respondents than among U.S. Facebook respondents. We have no strong priors regarding this same comparison in India.

⁷Berinsky, Margolis and Sances (2014) implemented this screener by asking respondents to press “k” on their keyboard if they were reading instructions; embedded Javascript code then automatically selected the special response option. One of us (Boas) has done similarly in prior online surveys in Latin America. For this project, we modified the “press k” format to accommodate respondents using mobile phones or tablets.

6 Replicating Survey Experiments

One of the major advantages of online convenience samples in political science and other disciplines is that they constitute a low-cost source of subjects for survey experiments. The greater internal validity of experimental research is often invoked as a justification for using non-representative samples. This is particularly true in a discipline like psychology, which has a long tradition of experimental research on student samples of convenience and has enthusiastically embraced MTurk in recent years. However, when researchers have a strong expectation of heterogeneous treatment effects in groups over- or under-sampled by their survey, the value of convenience samples is more limited. Sample average treatment effects, even if internally valid, may be unlikely to generalize to a broader population. This situation is probably more likely to arise in political science experiments, where treatment effects often vary by ideology or partisanship, than in psychology, where human behavior should be more homogenous.

Treatment effect estimates in online convenience samples might also differ from those obtained through face-to-face interviews because of survey mode. Hence, to the extent that experimental results in an MTurk- or Facebook-recruited sample differ from those in traditional, “gold standard” surveys, it is valuable to estimate how much of the difference is due to sample composition (which can always be adjusted by weighting, matching, or subgroup analysis) and how much is due to the online, self-administered nature of the survey itself.

In each country, we intend to replicate several survey experiments conducted on nationally representative samples. In selecting experiments to replicate, we considered a number of criteria. We looked for political science rather than psychology experiments, and we favored those in which prior research had demonstrated heterogeneous treatment effects according to some variable in which our samples are expected to be unrepresentative. In the interest of minimizing survey drop-out and maximizing attentiveness, we looked for shorter experiments rather than those asking respondents to read an article or vignette before answering questions. To maximize power, we sought experiments that had demonstrated large full-sample treatment effects and had relatively few treatment conditions—ideally, a single treatment plus a control. Finally, we avoided experiments that used deception and would require debriefing.

For our U.S. questionnaire, we plan to replicate experiments on the effect of government spending mode (tax break versus direct payment) on support for home mortgage interest subsidies (Haselswerdt and Bartels, 2015); the effect of the draft on support for military intervention along the Korean border (Kriner and

Shen, 2015); and a question wording experiment from the GSS examining support for “welfare” versus “assistance for the poor” (Green and Kern, 2012), which has also been replicated on a U.S. MTurk sample by Berinsky, Huber and Lenz (2012). In each experiment, treatment effects differ significantly by partisanship or ideology. In both the Facebook and MTurk samples, we expect more Democrats and liberals than in nationally representative samples. Hence, we anticipate a smaller full-sample estimate in the home mortgage interest and welfare experiments, where treatment effects were larger for conservatives and/or Republicans, and a larger full-sample estimate for the draft experiment, where treatment effects were larger for Democrats. We remain agnostic as to whether differences vis-a-vis benchmarks will be larger with Facebook versus MTurk.

For India, there are few survey experiments to choose from that have been conducted on nationally representative samples. We have opted to replicate two list experiments from the 2014–2015 Lok Surveys, which achieved national coverage but oversampled urban areas. The first list experiment measures family preference for male rather than female children, and the second looks at opposition to political candidates with criminal convictions. For both experiments, responses have been shown to vary widely across states (Reed and Kapur, 2015; Kapur, Sircar and Vaishnav, 2014). As noted above, we expect our Indian MTurk samples to be unrepresentative in terms of geography—and both online samples should be unrepresentative in terms of sex, which might be expected to affect preference for sons—so these experiments also present a tough test for replication. At present, we lack access to the original survey data for these list experiments, and publications describing the results—all short newspaper articles—are not specific enough regarding heterogeneous treatment effects for us to advance directional hypotheses for our online samples. However, we expect effects among Facebook-recruited respondents to come closer to the estimates in the Lok Surveys (weighted to correct for urban oversampling), given the expectation that MTurk will be less representative than Facebook on state of residence.

Treatment effect estimates might differ between convenience and nationally representative samples not only because of sample composition but also because of survey mode. All three of our India experiments, and the GSS welfare experiment in the United States, we conducted via face-to-face interviews. We do not expect survey mode effects to be large for these particular questions. All four questions are relatively short and uncomplicated, so being read the question by an interviewer should not generate a markedly different level of comprehension or attentiveness than reading it oneself on a computer screen. Moreover, because list

experiments reduce social desirability bias, which is normally much greater with in-person than with online surveys (Holbrook and Krosnick, 2010), we should not expect survey mode to make much of a difference for the India questions.

Given the expectation of minimal survey mode effects for all of our experiments, treatment effects should be similar when estimated on subsamples of respondents that are matched on observable characteristics. Hence, we plan to use Genetic Matching (Diamond and Sekhon, 2013) to pair our Facebook and MTurk respondents from each country to a subset of respondents from each nationally representative sample, such that both groups are balanced with respect to major demographic and political variables. We remain agnostic as to which set of treatment effect estimates—Facebook versus MTurk—will be closer to the nationally representative estimates after matching. On the one hand, the greater levels of attentiveness that we expect to find among MTurk respondents might generate treatment effects that are larger in magnitude. On the other hand, contact among MTurk workers assigned to different treatment conditions—e.g., via online forums where they discuss studies in which they have participated—could reduce the magnitude of treatment effects.

7 Conclusion

Crowdsourcing and social media present new opportunities to recruit online convenience samples. Compared to alternative sources of respondents for online surveys, such as commercial Internet panels, crowdsourcing sites like Amazon.com’s Mechanical Turk offer extremely low-cost recruitment. For its part, advertising on social media sites like Facebook permits reaching out to a vast population of users around the globe, including countries where commercial Internet panels may not be an option. Samples from both online sources can easily be shown to be more diverse than the traditional sample of convenience used in experimental research—college students (Berinsky, Huber and Lenz, 2012; Samuels and Zucco, 2013). Moreover, numerous studies have shown that respondents recruited through MTurk in the United States are not too different from nationally representative Internet panels or face-to-face probability samples (Berinsky, Huber and Lenz, 2012; Huff and Tingley, 2014; Leeper and Mullinix, 2015).

It is important to evaluate popular sources of convenience samples like MTurk and Facebook not only in relation to traditional alternatives but also in relation to one another. To date, there is little research that could allow us to weigh the trade-offs of using one method versus the other. In some disciplines and disciplinary subfields, MTurk predominates, whereas in others, Facebook is the norm. Existing methodological studies

comparing these and other recruitment methods have drawn small samples of Facebook users and have not been able to reach firm conclusions about its advantages or disadvantages (Antoun et al., 2015; Leeper and Mullinix, 2015). Moreover, in substantive political science research on India and the United States, the two countries where both methods are viable, no one, to our knowledge, has used a Facebook-recruited sample. MTurk may be cheaper in both countries, but we do not yet know whether a somewhat higher-cost recruitment method would provide better results.

Our study of subject recruitment through Facebook and MTurk in India and United States is designed to address these questions of methodological tradeoffs in online survey research. We hope that the results provide guidance not only to scholars doing research on these two countries, but also to others seeking to evaluate the quality of online convenience samples recruited through crowdsourcing or social media around the world.

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8 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:

9 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?
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 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: