

Demographics of Mechanical Turk

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Abstract

We present the results of a survey that collected information about the demographics of participants on Amazon Mechanical Turk, together with information about their level of activity and motivation for working on Amazon Mechanical Turk. We find that approximately 50% of the workers come from the United States and 40% come from India. Country of origin tends to change the motivating reasons for workers to participate in the marketplace. Significantly more workers from India participate on Mechanical Turk because the online marketplace is a primary source of income, while in the US most workers consider Mechanical Turk a secondary source of income. While money is a primary motivating reason for workers to participate in the marketplace, workers also cite a variety of other motivating reasons, including entertainment and education.

Prior Findings

Amazon.com, until recently, was paying in cash only workers that had a bank account in the US. All other workers could still participate on Amazon Mechanical Turk but the only way to be compensated was to get paid using an Amazon.com gift card. This policy discouraged workers from other countries, and the majority of the workers were from the United States (typically 70%-80% of the participants – see <http://behind-the-enemy-lines.blogspot.com/2008/03/mechanical-turk-demographics.html>). Extensive surveys, conducted by multiple parties, confirmed that finding. The main findings of earlier surveys indicated that Mechanical Turk workers are relatively representative of the population of US Internet users (<http://behind-the-enemy-lines.blogspot.com/2009/03/turker-demographics-vs-internet.html>), but with the following biases:

- Turkers are younger. 54% of Turkers are between 21-35 years old, compared to 22% of the general population.
- Turkers are mainly female. 70% of the Turkers are female, compared to 50% of the general population.
- Turkers have lower income. 65% of Turkers have household income less than 60K, compared to 45% of the general population.
- Turkers have smaller families. 55% of Turkers do not have children, compared to the 40% of the general population.
- Geographical distribution of Turkers and Internet users is similar.
- Race composition of Turkers and Internet users is similar, although there are slightly more Asians on Mechanical Turk.

Changes since Last Survey

Recently, however, Amazon.com allowed workers in India to receive their payment in Indian rupees (https://www.mturk.com/mturk/help?helpPage=worker#how_recv_rupees). This changed significantly the population dynamics on Mechanical Turk, guaranteeing the need for a fresh survey of the workers.

For this reason, we conducted a new survey, collecting demographics of 1,000 Mechanical Turk users. The survey was conducted over a period of three weeks, in February 2010 and the questions that we asked are given in the Appendix. Each participant was paid \$0.10 for participating in the survey, and the average time to complete the survey was 3 minutes, for an effective hourly rate payment of \$1.66/hr. The participants self-selected themselves, so there is the question on whether the demographics of the participants are biased by the amount of payment.

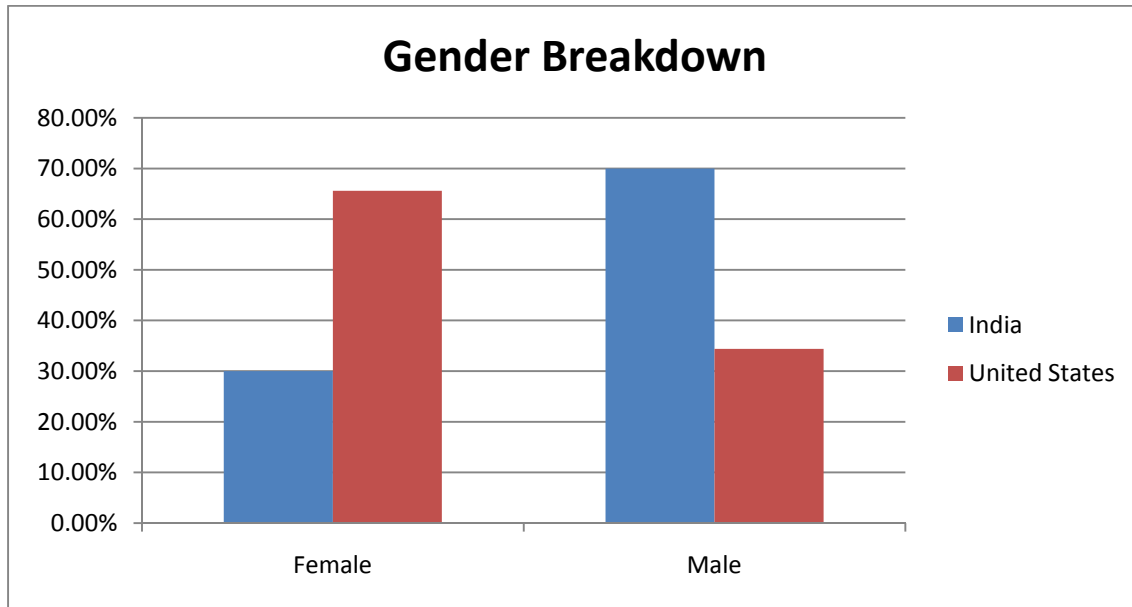
In total, we got participants from 66 countries. The results indicated that still the majority of users are from the United States, but a significant majority is now coming from India. Specifically, we have the following breakdown across countries:

United States	46.80%
India	34.00%
Miscellaneous	19.20%

Given the significant fraction of Indian workers, we will be presenting the demographics analysis separately for American and Indian workers.

Gender Breakdown

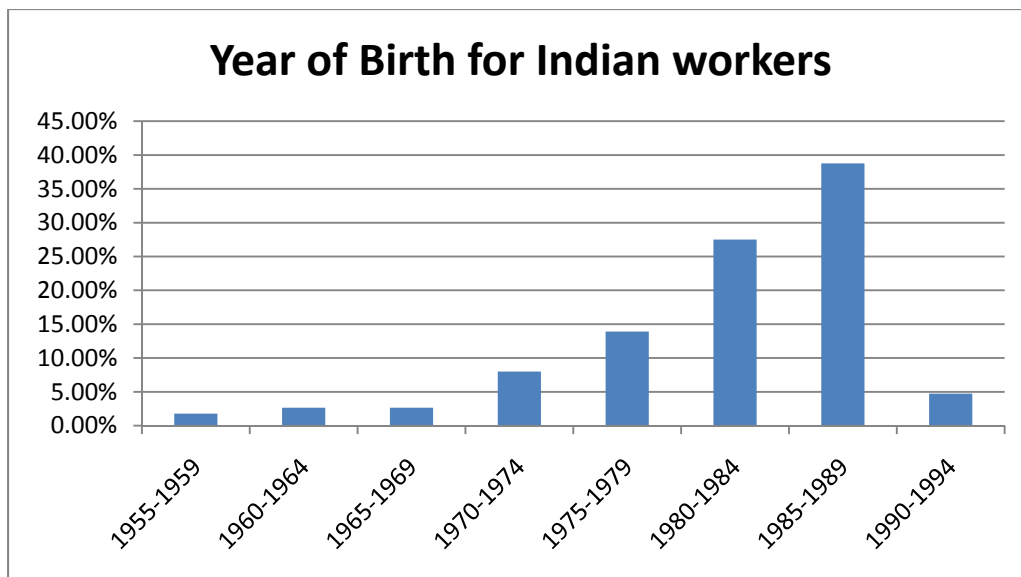
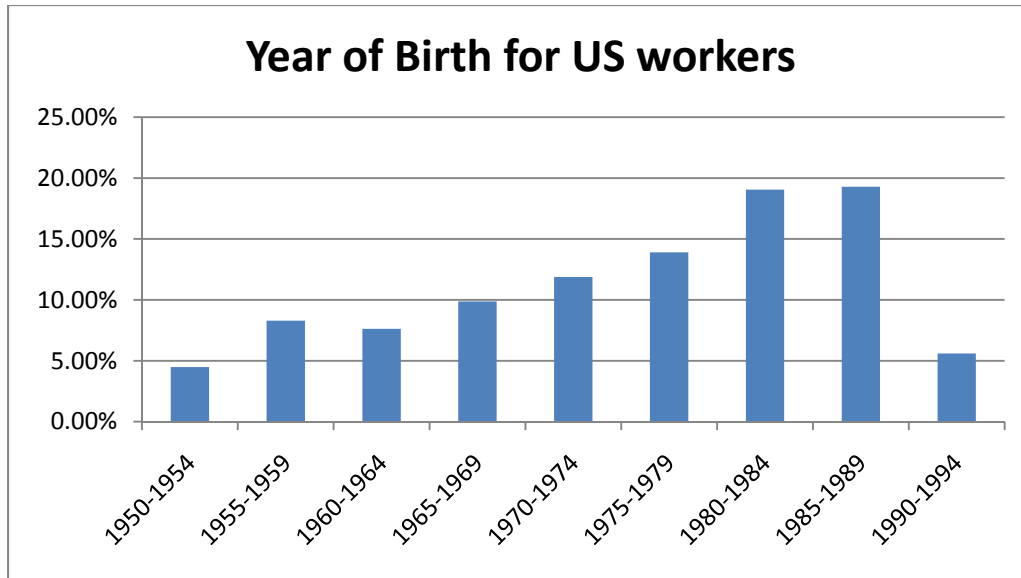
The first analysis will focus on the gender breakdown. Across US-based workers, there are significantly more females than males, while the situation is reversed for Indian workers.



The main reason for the overrepresentation of females in the US-based workforce is the nature of the tasks and work on Mechanical Turk. Most participants in the US use Mechanical Turk as a supplementary source of income, and often Mechanical Turk is used by stay-at-home parents, unemployed and underemployed workers, and so on. Since females are more likely to fit into these categories, there is a corresponding increase in representation. On the contrary, more Indian workers treat Mechanical Turk as a primary (or at least significant) source of income, and we see more males working on Mechanical Turk.

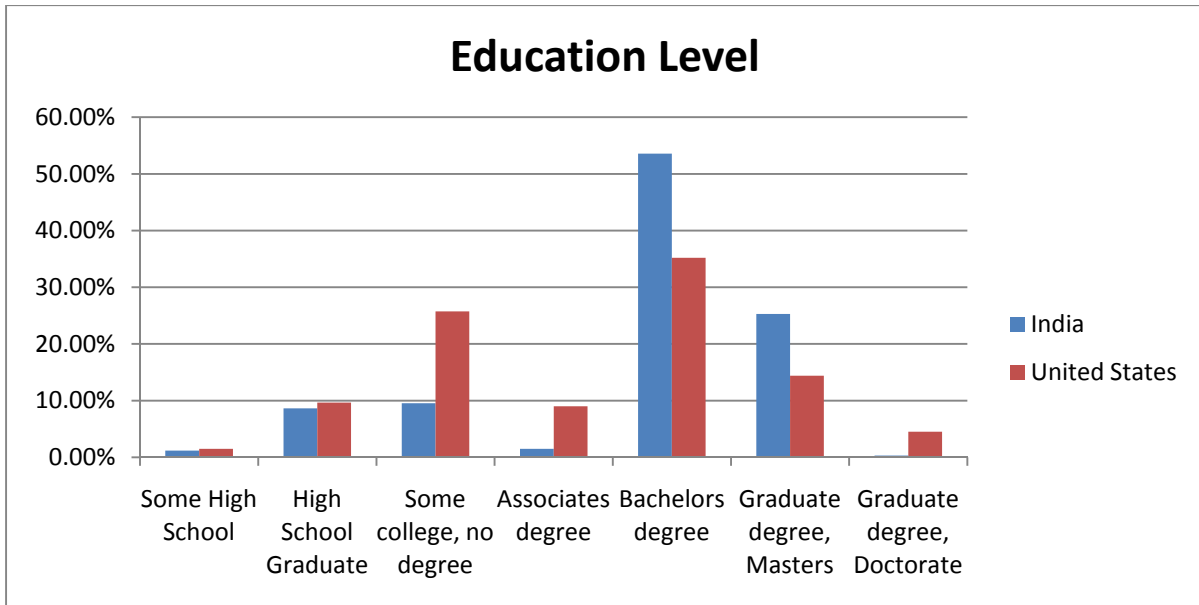
Age Distribution

In terms of age distribution, there is definitely an overrepresentation of younger workers, compared to the general population of Internet users. While this holds both for the US and for India, we see an even higher skew towards younger workers among Indians.



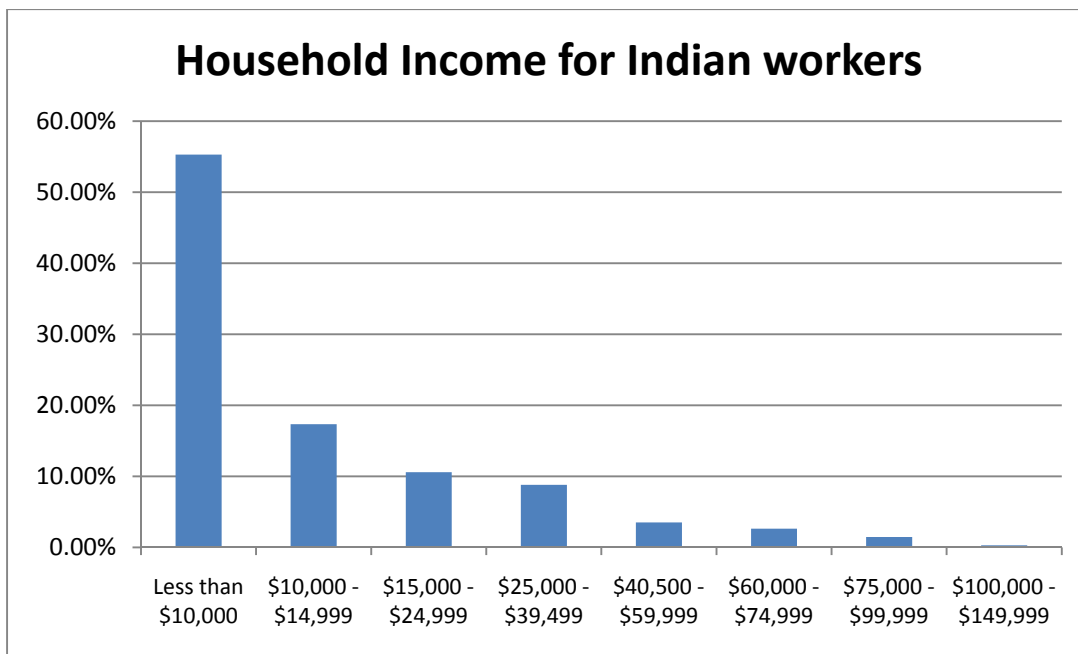
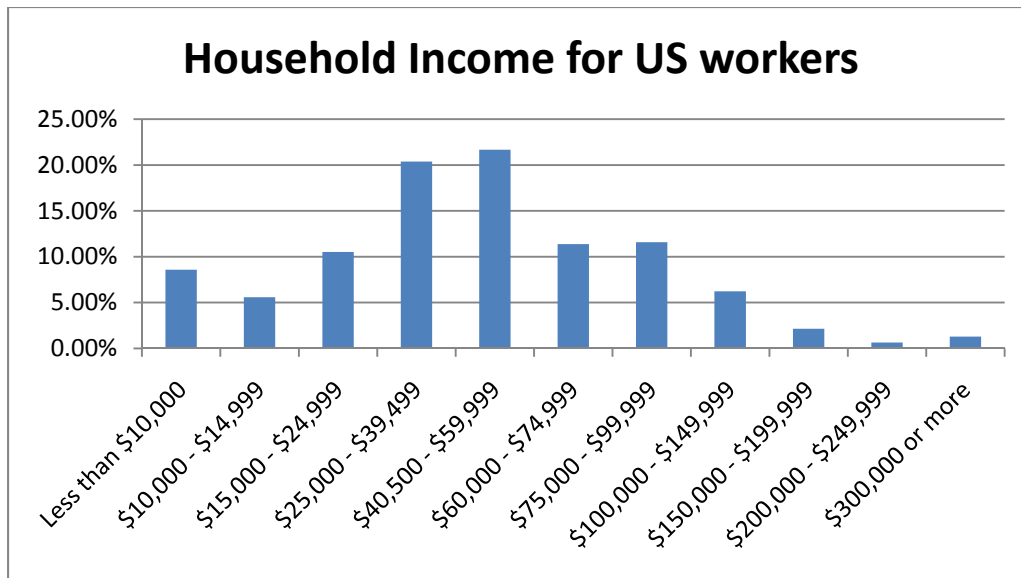
Educational Level

We also asked the Mechanical Turk workers to declare their educational level. In general, the (self-declared) educational level of the workers is higher than the general US and Indian population. There are two factors that may contribute to this. First, many of the workers are younger than the overall population and, *ceteris paribus*, this leads to higher educational level. Finally, while we may not necessarily discount the possibility of false disclosure, there are no incentives that would bias workers towards lying in this survey.



Income Level

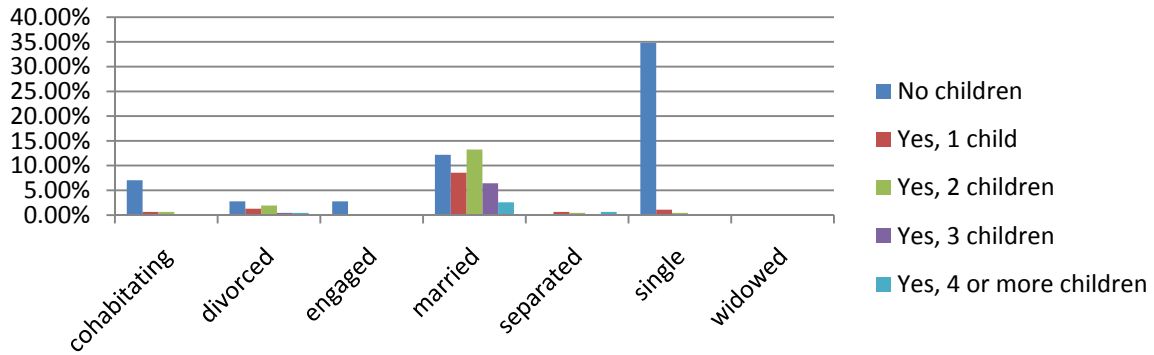
We were also interested to examine the income level of the workers on Mechanical Turk. In the US, the *shape* of the distribution roughly matches the income distribution in the general US population. However, it is noticeable that the income level of US workers on Mechanical Turk is shifted towards lower income levels. For example, while 45% of the US Internet population has income below \$60K/yr, the corresponding percentage across US-based Mechanical Turk workers is 66.7%. (This finding is consistent with the earlier surveys that compared income levels on MTurk workers with income level of the general US population of Internet users.) The picture is drastically different across US-based and Indian workers. Workers based in India have significantly lower incomes, as expected, and more than 55% of the workers declared an income of less than \$10,000/year.



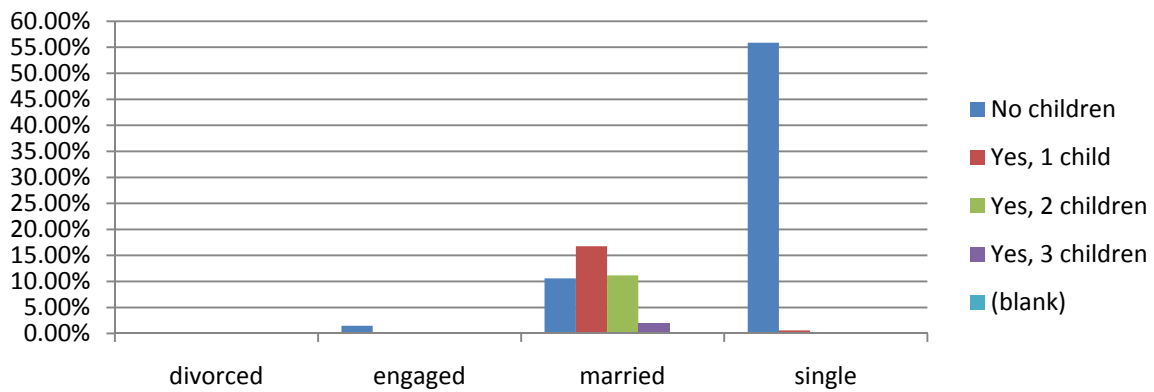
Marital Status, Children, and Household Size

In terms of marital status and household size, the answers tend to match the age demographic of the workers reported earlier. The majority of the workers, both in India and in the US, do not have children, and a significant fraction of them are single. An interesting contrast is the household size, which seems more to reflect cultural norms than anything specific to Mechanical Turk: While more Indian workers are single and without children, they seem to stay in houses with larger number of household members, compared to US workers: Indian workers either stay with their family, or they tend to have a comparatively larger number of roommates, compared to US workers.

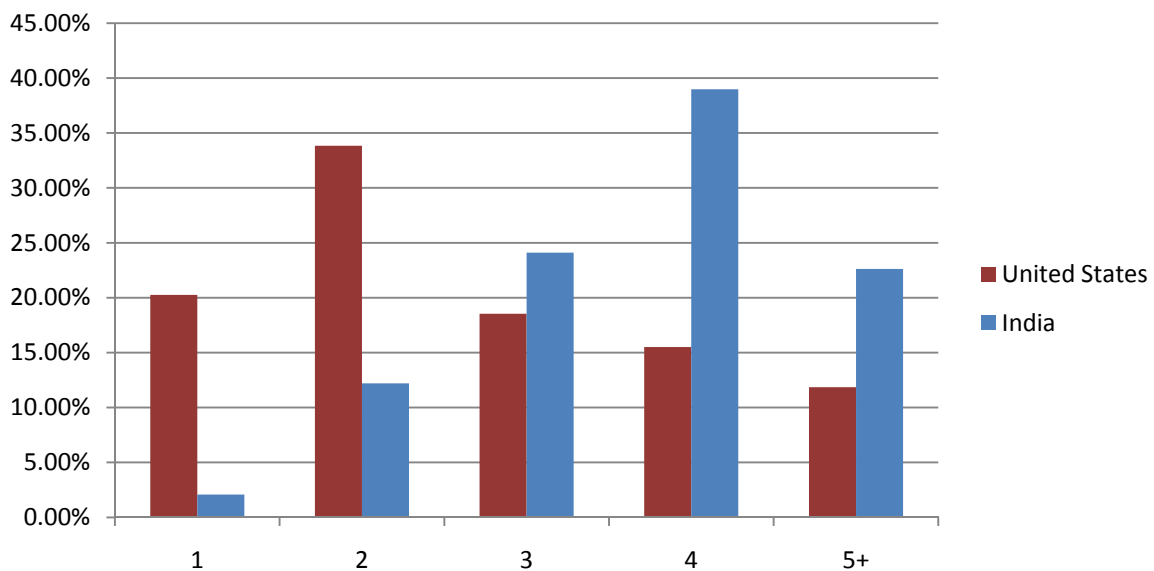
Marital Status and Household Size for US workers



Marital Status and Household Size for Indian workers

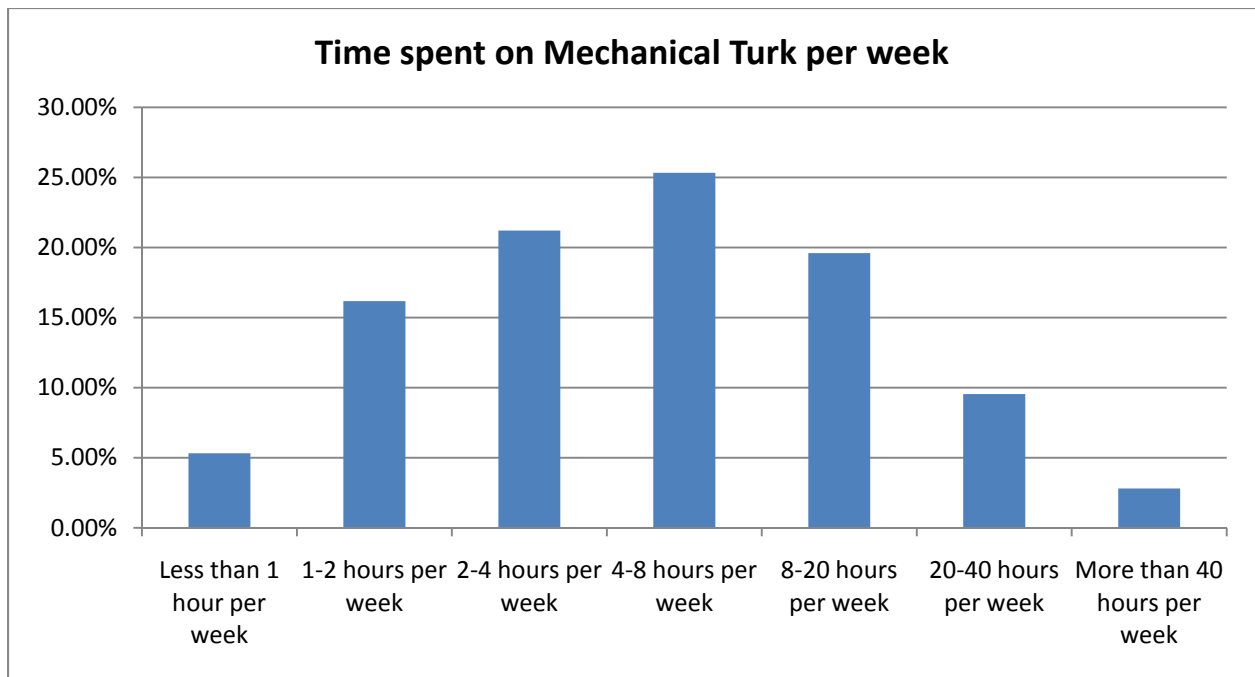


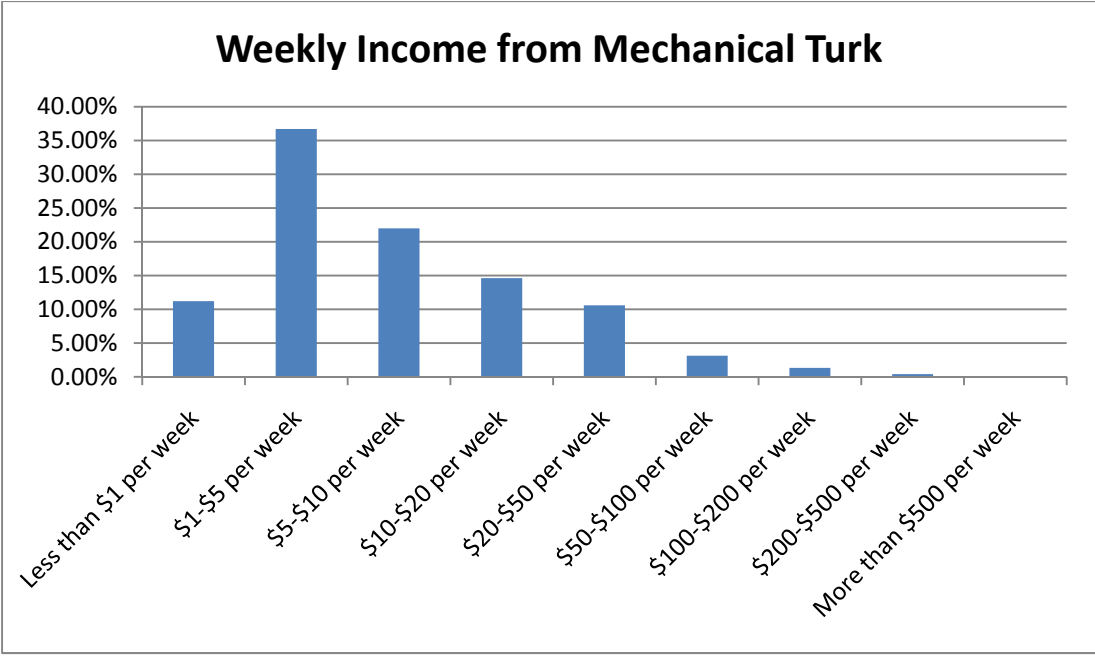
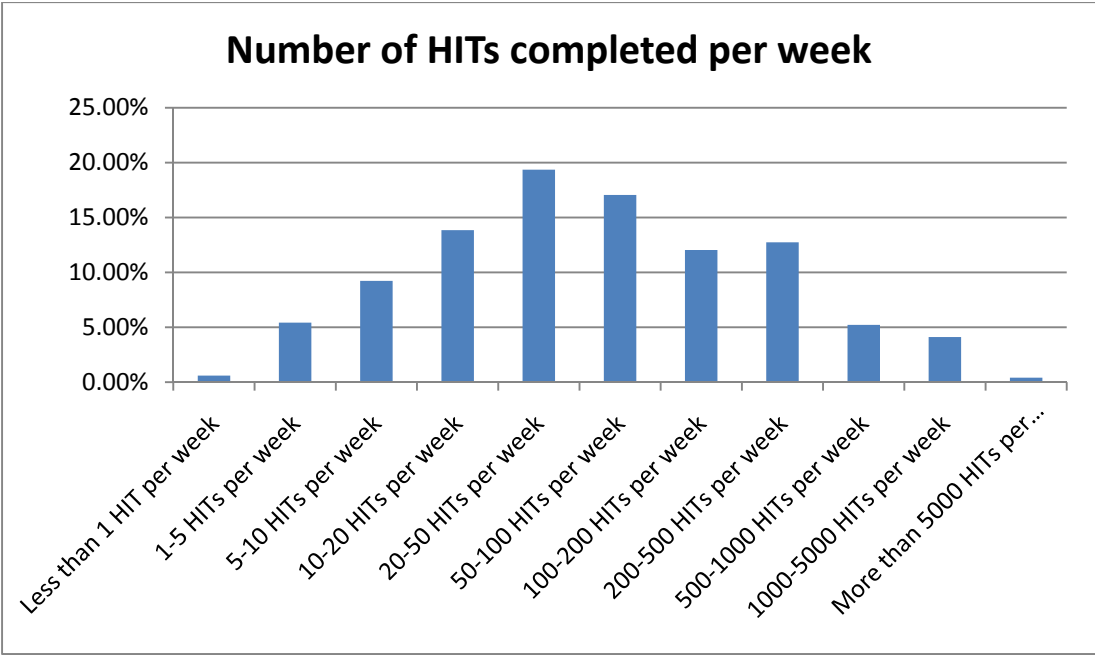
Household Size for Workers on Mechanical Turk



Level of Engagement on Mechanical Turk

We also asked a set of questions for evaluating the level of engagement of Mechanical Turk workers on the marketplace. Since we did not detect significant deviations across countries, we will be reporting the results in aggregate form, without separating by country of origin of the worker. In general most workers spend a day or less per week working on Mechanical Turk, and tend to complete 20-100 HITs per week. Correspondingly, this generates a relatively low income stream for Mechanical Turk work, which is often less than \$20 per week. Of course, there are a few workers that devote a significant amount of time and effort, completing thousands of HITs, and generating a respectable income of more than \$1000/month. For these workers, Mechanical Turk tends to be the primary source of income, of course. For Indian-based workers, such salary levels are typically satisfactory for the type of work that is available on Mechanical Turk (i.e., tedious tasks that do not require significant specialized skills)





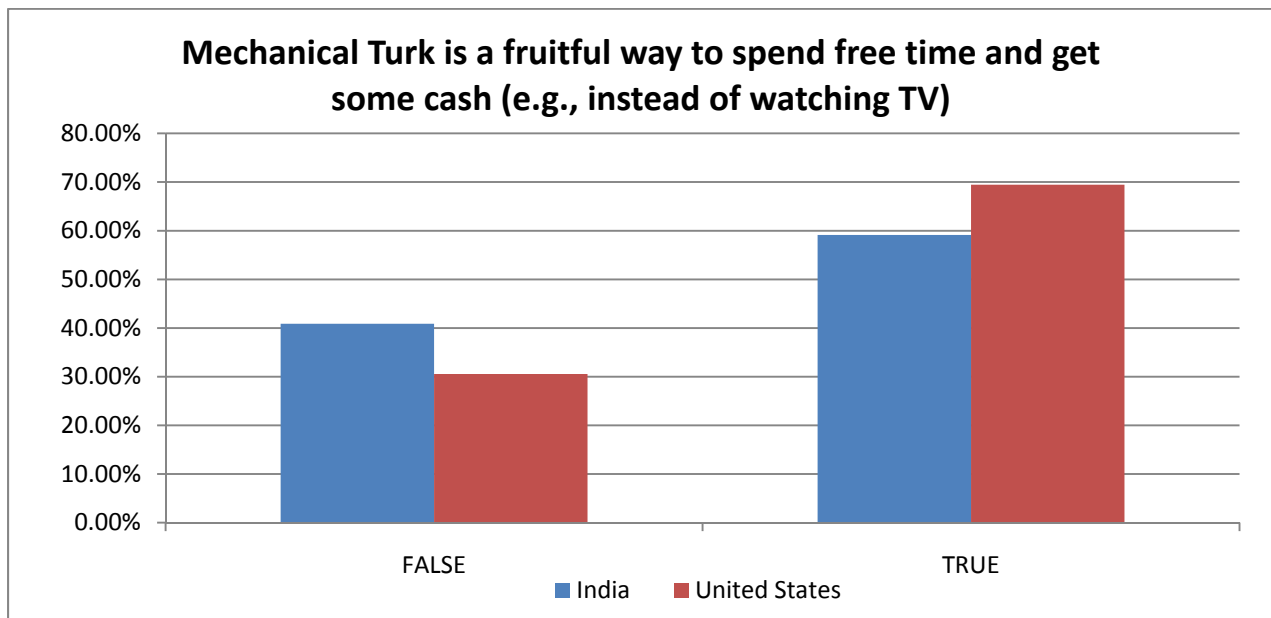
Motivation for Participating on Mechanical Turk

To understand better why people participate on Mechanical Turk, we asked for both qualitative (i.e., free text) and a set of structured questions. The main structured question that we asked was the following:

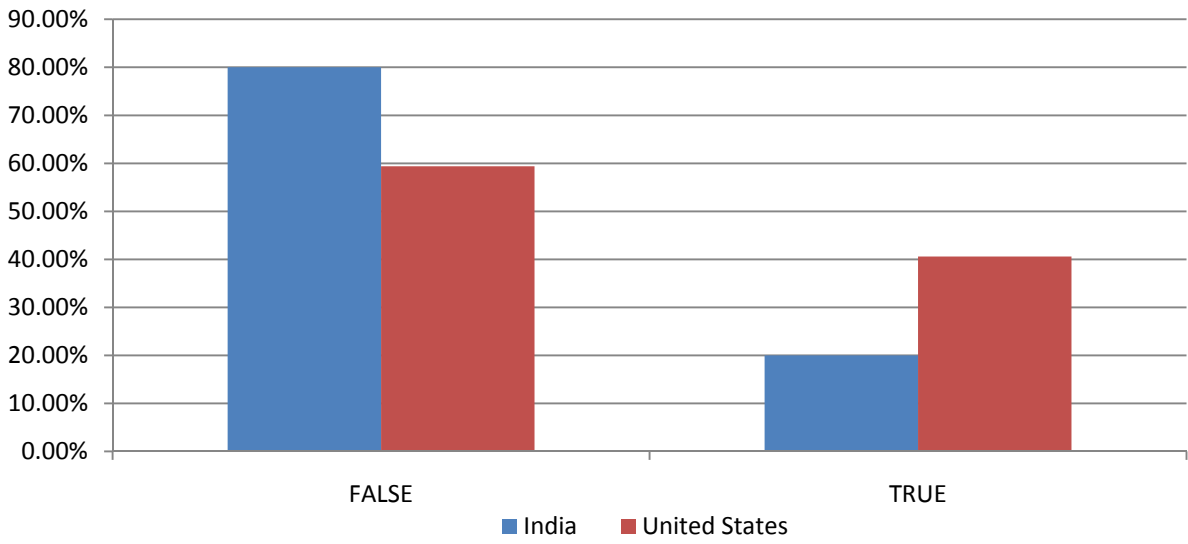
Why do you complete tasks in Mechanical Turk? Please check any of the following that applies:

- *Fruitful way to spend free time and get some cash (e.g., instead of watching TV)*
- *For "primary" income purposes (e.g., gas, bills, groceries, credit cards)*
- *For "secondary" income purposes, pocket change (for hobbies, gadgets, going out)*
- *To kill time*
- *I find the tasks to be fun*
- *I am currently unemployed, or have only a part time job*

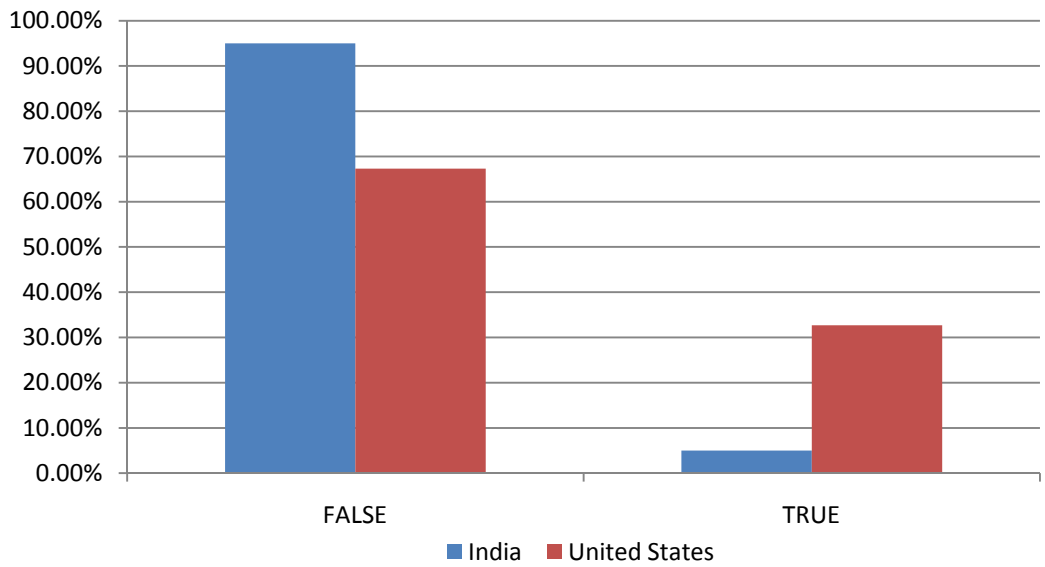
The answers were quite different across Indian and US-workers. Very few Indian workers participate on MTurk for "killing time", and significantly more Indians treat MTurk as a primary source of income. (Not surprising given the average income level of an Indian worker vs the income level of the US workers.)



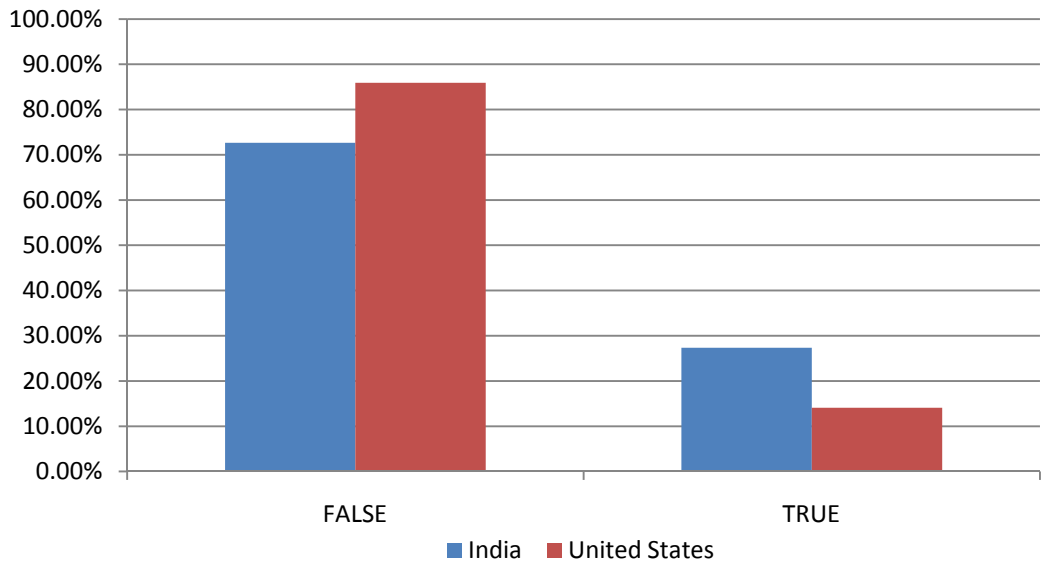
I participate on Mechanical Turk because the tasks are fun



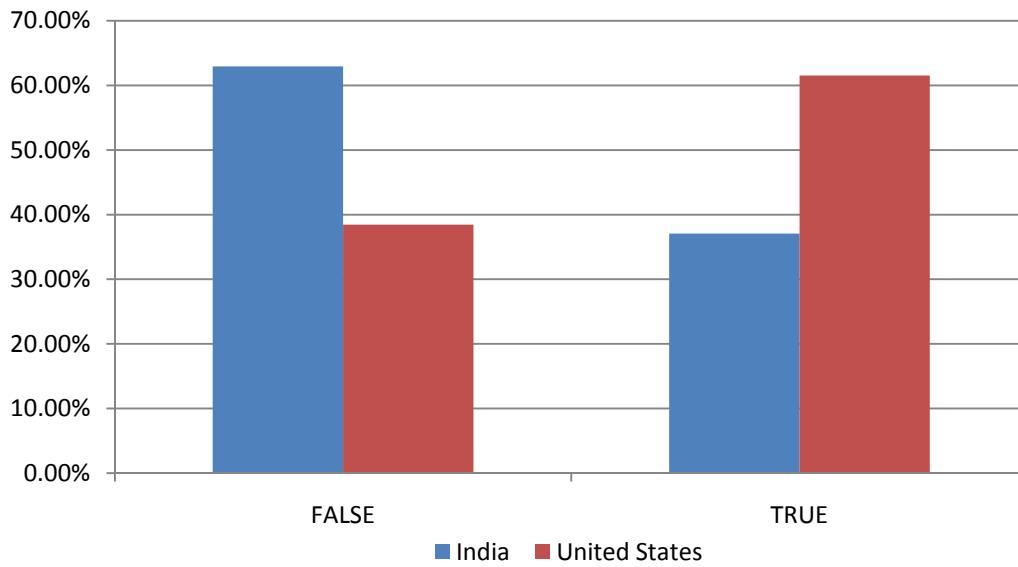
I participate on Mechanical Turk to kill time



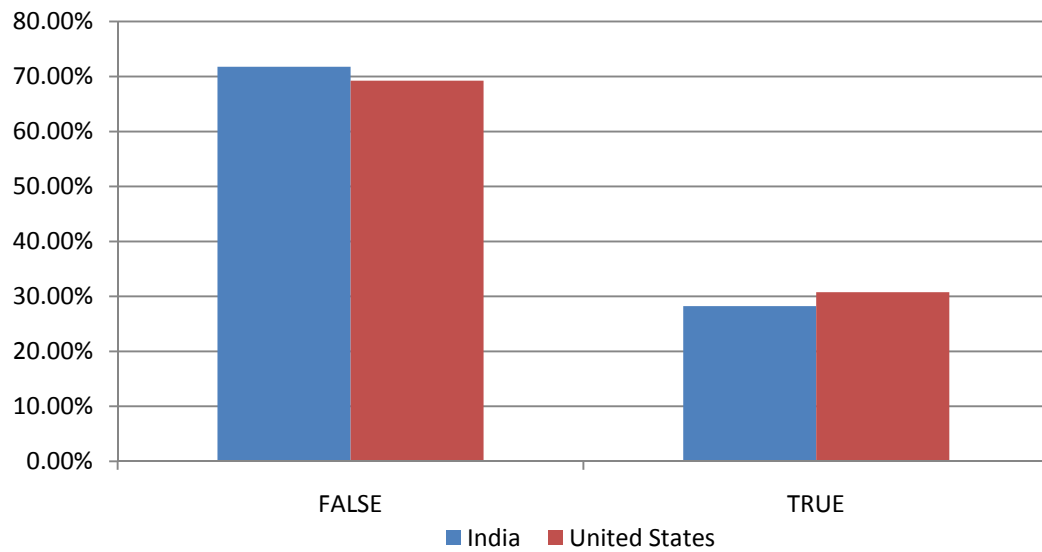
Mechanical Turk is my primary source of income (paying bills, gas, groceries, etc)



Mechanical Turk is my secondary source of income, pocket change (for hobbies, gadgets, going out)



I am currently unemployed or only have a part-time job



Appendix: Demographics Survey Structure

Title: Answer a short survey about your MTurk participation

1. Why do you complete tasks in Mechanical Turk? Please check any of the following that applies:

- Fruitful way to spend free time and get some cash (e.g., instead of watching TV)
- For "primary" income purposes (e.g., gas, bills, groceries, credit cards)
- For "secondary" income purposes, pocket change (for hobbies, gadgets, going out)
- To kill time
- I find the tasks to be fun
- I am currently unemployed, or have only a part time job

If you would like to give a more elaborate description on why you participate on Mechanical Turk, please describe below:

2. Has the recession affected your decision to participate on MTurk?

3. Has the recession affected your level of participation on MTurk?

4. For how long have you been working on Amazon Mechanical Turk?

5. How much do you earn per week on Mechanical Turk?

6. How much time do you spend per week on Mechanical Turk?

7. How many HITs do you complete per week on Mechanical Turk?

Please also provide some demographic information

1. What is your gender?

2. Year of birth?

3. Which of the following best describes your highest achieved education level?

4. What is the total income of your household?

5. Your marital status?

6. Do you have children?

7. How many members in your household?

8. In which country you live in?

9. In which state do you live in? (For US residents.)

10. Please indicate your race