• Final exam: Tuesday, December 12, 9:00-11:00am OLH155

• Project 2: Wednesday, December 6, 4:30pm
  (late projects accepted, no penalty through Dec 12)
What do we know about the crowdworker experience?
Demographics


  - Between 15,059 and 42,912 active workers
  - 80% of the tasks are carried out by the 20% most active (3,011–8,582) Turkers


<table>
<thead>
<tr>
<th>Gender</th>
<th>Male 55.0%</th>
<th>Female 45.0%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&gt;59 3.2%</td>
<td>Missing 0.2%</td>
</tr>
<tr>
<td>Age</td>
<td>18-24 31.6%</td>
<td>25-39 47.8%</td>
</tr>
<tr>
<td></td>
<td>40-59 17.2%</td>
<td></td>
</tr>
<tr>
<td>Country</td>
<td>USA 47.6%</td>
<td>India 38.5%</td>
</tr>
<tr>
<td></td>
<td>Other 13.9%</td>
<td></td>
</tr>
<tr>
<td>Education Level</td>
<td>H.S. 8.8%</td>
<td>Some College 18.6%</td>
</tr>
<tr>
<td></td>
<td>Associates Degree 5.6%</td>
<td>Bachelors Degree 41.8%</td>
</tr>
<tr>
<td></td>
<td>Masters Degree 20.0%</td>
<td></td>
</tr>
<tr>
<td>Employment Status</td>
<td>Unemployed 21.8%</td>
<td>In Education 17.9%</td>
</tr>
<tr>
<td></td>
<td>Part-Time 19.0%</td>
<td>Fulltime 41.3%</td>
</tr>
<tr>
<td>Household Income</td>
<td>&lt;$7,000 23.0%</td>
<td>$7,000-$14,999 25.1%</td>
</tr>
<tr>
<td></td>
<td>$15,000-$34,999 20.9%</td>
<td>$35,000-$74,999 12.3%</td>
</tr>
<tr>
<td></td>
<td>$75,000-$124,999 12.3%</td>
<td></td>
</tr>
<tr>
<td>Time on Mturk</td>
<td>&lt; 1 Week 5.6%</td>
<td>&lt; 1 Month 19.0%</td>
</tr>
<tr>
<td></td>
<td>&lt; 3 Months 22.7%</td>
<td>&lt; 6 Months 15.8%</td>
</tr>
<tr>
<td></td>
<td>&lt; 1 Year 15.5%</td>
<td>&lt; 2 Years 13.9%</td>
</tr>
<tr>
<td></td>
<td>&gt; 2 Years 7.4%</td>
<td></td>
</tr>
<tr>
<td>Weekly Time on Mturk</td>
<td>1-2h 4.6%</td>
<td>2-4h 17.2%</td>
</tr>
<tr>
<td></td>
<td>4-8h 21.3%</td>
<td>8-12h 18.6%</td>
</tr>
<tr>
<td></td>
<td>12-20h 17.9%</td>
<td>20-40h 13.7%</td>
</tr>
<tr>
<td></td>
<td>40h+ 4.2%</td>
<td></td>
</tr>
</tbody>
</table>
Demographics

demographics.mturk-tracker.com
Motivations

<table>
<thead>
<tr>
<th>Enjoyment Based Motivation</th>
<th>Skill Variety</th>
<th>Task Identity</th>
<th>Task Autonomy</th>
<th>Direct Job Feedback</th>
<th>Pastime</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2.4</td>
<td>2.3</td>
<td>2.4</td>
<td>2.0</td>
<td>2.1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Community Based Motivation</th>
<th>Community Identity</th>
<th>Social Contact</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2.0</td>
<td>1.3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Immediate Payoffs</th>
<th>Payment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Delayed Payoffs</th>
<th>Signaling</th>
<th>Human Capital Advancement</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1.9</td>
<td>2.2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Social Motivation</th>
<th>Action Significance by Values</th>
<th>Action Significance by Norms &amp; Obligations</th>
<th>Indirect Job Feedback</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1.7</td>
<td>1.0</td>
<td>1.7</td>
</tr>
</tbody>
</table>

*Figure 3: Mean construct scores after standardization*
“Breaking monotony with meaning: Motivation in crowdsourcing markets”
Chandler, D. and Kapelner, A.
Journal of Economic Behavior & Organization, 90, 2013
“Breaking monotony with meaning: Motivation in crowdsourcing markets”
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*Journal of Economic Behavior & Organization, 90, 2013*

<table>
<thead>
<tr>
<th></th>
<th>Induced to work</th>
<th>Did ≥ 5 labelings</th>
<th>Fine Quality</th>
<th>Average Hourly Wage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Meaningful</strong></td>
<td>↑ 4.6%*</td>
<td>↑ 8.5%***</td>
<td>↑ 0.7%</td>
<td>↓ 4.5%</td>
</tr>
<tr>
<td><strong>Meaningful (US)</strong></td>
<td>↑ 5.1%*</td>
<td>↑ 8.9%**</td>
<td>↑ 3.9%</td>
<td>↓ 7.7%</td>
</tr>
<tr>
<td><strong>Meaningful (India)</strong></td>
<td>↓ 2.3%</td>
<td>↑ 7.0%*</td>
<td>↓ 3.1%</td>
<td>↑ 0.5%</td>
</tr>
<tr>
<td><strong>Shredded</strong></td>
<td>↓ 4.0%</td>
<td>↓ 2.8%</td>
<td>↓ 7.2%***</td>
<td>↑ 5.6%</td>
</tr>
<tr>
<td><strong>Shredded (US)</strong></td>
<td>↓ 2.3%</td>
<td>↓ 5.0%</td>
<td>↓ 6.1%*</td>
<td>↑ 9.5%</td>
</tr>
<tr>
<td><strong>Shredded (India)</strong></td>
<td>↓ 6.8%</td>
<td>↓ 1.6%</td>
<td>↓ 8.7%**</td>
<td>↓ 1.4%</td>
</tr>
</tbody>
</table>

* * p < .05,  ** * p < .01,  *** * p < .001
“Social desirability bias and self-reports of motivation: a study of amazon mechanical turk in the US and India”
Antin, J. and Shaw, A., SIGCHI 2012
“Social desirability bias and self-reports of motivation: a study of amazon mechanical turk in the US and India”

Antin, J. and Shaw, A., *SIGCHI* 2012
“Social desirability bias and self-reports of motivation: a study of amazon mechanical turk in the US and India”
Antin, J. and Shaw, A., SIGCHI 2012

Social desirability bias:
• Wikipedia: “tendency of survey respondents to answer questions in a manner that will be viewed favorably by others”

List experiment:
• Provide a list of choices, have respondent say *how many*
• Leave one choice (rotating through each of the choices) out of each survey
“Social desirability bias and self-reports of motivation: a study of amazon mechanical turk in the US and India”
Antin, J. and Shaw, A., *SIGCHI* 2012

**Figure 1.** The proportion of US participants who selected each motivation using agreement statement-style questions or the list experiment. N = 1132.

**Figure 2.** The proportion of India participants who selected each motivation using agreement statement-style questions or the list experiment. N = 898.
“Social desirability bias and self-reports of motivation: a study of amazon mechanical turk in the US and India”
Antin, J. and Shaw, A., SIGCHI 2012
The Worker Experience
“Ethics and tactics of professional crowdwork”
Silberman, M., Irani, L. and Ross, J.
XRDS: Crossroads, The ACM Magazine for Students 17(2) 2010

• “Occupational hazards”:
  • Requesters not paying
  • “Staying safe” – inappropriate tasks
  • Little support from Amazon
  • Bad tasks (ambiguous, not enough time, ...)

• Solution approaches:
  • From the “outside” (Turkopticon, Turker Nation, ...)
  • New platforms
  • Legal protections
“Amazon mechanical turk: Gold mine or coal mine?”
Fort, K., Adda, G. and Cohen, K.B.,

- AMT:
  - Between 15,059 and 42,912 active workers
  - 80% of the tasks are carried out by the 20% most active (3,011–8,582) Turkers

- Concerns:
  - Low pay
  - Legal status: Employees?
“Web workers unite! Addressing challenges of online laborers”
Bederson, B. B. and Quinn, A. J., CHI 2011

• Discussion of ethical and labor issues for workers

• Requester system design guidelines
  • Pay guidelines
  • Objective metrics
  • Feedback guidelines
  • Grievance process
  • Provide task context
  • Limit anonymity
  • ...

• Problem: Human computation relies on/exploits worker invisibility
• Turkopticon: Platform for workers to discuss (and rate) requesters
• Discusses many issues for the future of crowd work
“The future of crowd work”

“would we want our children to be crowdworkers?”

(discussion of research directions for the future)
“Being a turker”
Martin, D., Hanrahan, B.V., O'Neill, J. and Gupta, N.,
In Proceedings CSCW, 2014

• Ethnomethodological study of Turker Nation forum
• Many results/observations
• Key issues for workers:
  • AMT is a labor marketplace where pay is the most important consideration
  • Information quality for selecting tasks
  • Relationship with requesters
  • How to act collectively
“We are dynamo: Overcoming stalling and friction in collective action for crowd workers”

• Dynamo: Platform for organizing and collective action for AMT workers
"Taking a HIT: Designing around rejection, mistrust, risk, and workers' experiences in Amazon Mechanical Turk"
McInnis, B., Cosley, D., Nam, C. and Leshed, G.

• Main issues:
  • Risk and trust
  • Anonymity
  • Policy asymmetry => Risk, mistrust
    • Workers use outside tools/platforms to address the asymmetry

• Risk factors:
  • Task and interface design
  • Unclear evaluation criteria
  • Unresponsive, arbitrary resolution of rejections
    • “Amazon has no policy about Requesters’ responsibilities in communicating with Turkers and resolving disputes”
  • Lack of information on requesters
  • Inexperienced and unfamiliar requesters
  • Tasks with poor return
  • Prioritizing efficiency over quality
"Taking a HIT: Designing around rejection, mistrust, risk, and workers' experiences in Amazon Mechanical Turk"
McInnis, B., Cosley, D., Nam, C. and Leshed, G.

• Possible solutions (not requiring AMT action):
  • “Broken task” alarm button
  • Integrate existing “mutual aid” systems
  • Fast fail – provide feedback
  • Repairing rejected work
  • Tools for collective interaction with requesters
  • “Turker task design collective” – get turker help on task design
“The crowd is a collaborative network. “
CSCW 2016

• Data:
  • AMT
  • Microsoft’s Universal Human Relevance System (UHRS)
  • LeadGenius
    • Provides sales “leads” via AI + human computation
    • Minimum wage based on each country’s cost of living
  • Amara.org
    • Video subtitles
“The crowd is a collaborative network. “
CSCW 2016

• Findings
  • Forms of collaboration
    • Reducing administrative overhead
“The crowd is a collaborative network. “
CSCW 2016

• Findings
  • Forms of collaboration
    • Reducing administrative overhead
    • Sharing tasks as employment opportunities
Figure 2. How workers found our mapping HIT (n=4,856) which ran from April 23 - May 28, 2014
“The crowd is a collaborative network. “
CSCW 2016

• Findings
  • Forms of collaboration
    • Reducing administrative overhead
    • Sharing tasks as employment opportunities
    • Helping others
What do you typically do when you come across a task with instructions that you don’t understand?

- **Try my best**
- **Ask a friend**
- **Skip the task**
- **Post to online forum**
- **Email the employer**

**Graph:**
- **Try my best**
  - Amara: 10%
  - UHRS: 20%
  - MTurk: 30%
  - LeadGenius: 40%

- **Ask a friend**
  - Amara: 5%
  - UHRS: 10%
  - MTurk: 15%
  - LeadGenius: 20%

- **Skip the task**
  - Amara: 30%
  - UHRS: 40%
  - MTurk: 50%
  - LeadGenius: 60%

- **Post to online forum**
  - Amara: 5%
  - UHRS: 10%
  - MTurk: 15%
  - LeadGenius: 20%

- **Email the employer**
  - Amara: 70%
  - UHRS: 60%
  - MTurk: 50%
  - LeadGenius: 40%
Project 2

• Pick a cognitive bias that you conjecture might impact a worker’s performance on AMT

• Evaluate your conjecture
• Examples:
  • Does putting a “happy face” on a task page cause sentiment analysis tasks to be get more positive responses?
  • Does telling workers what previous workers have answered (akin to Asch’s study) bias their answers (possibly away from the correct one)?
  • Are workers more accurate if they are primed with a god-evoking cue?
  • Do workers favor answers that rhyme?
Project 2

• Sources for cognitive biases
  • Wikipedia’s list of cognitive biases
  • The Cognitive Bias Cheat Sheet
    • (Depicted in the Cognitive Bias Codex)
Project 2

• Submission format:
  1. Define/explain the cognitive bias (independent of human computation)
  2. Explain the effect that you think it will have
  3. Describe the experiment that you ran to test it
  4. Document your outcomes

• Teams of size 1 or 2

• Due: Wednesday, December 6, 4:30pm
  (late projects accepted, no penalty, through Dec 12)