Using MTurk for Research

JOSEPH K. GOODMAN

THE OHIO STATE UNIVERSITY

FISHER COLLEGE OF BUSINESS

BASED IN-PART ON:

WRIGHT, SCOTT A. AND JOSEPH K. GOODMAN (2019), "MECHANICAL TURK IN CONSUMER RESEARCH: PERCEPTIONS AND USAGE IN MARKETING ACADEMIA," IN *HANDBOOK OF METHODS IN CONSUMER PSYCHOLOGY*, EDS. FRANK R. KARDES, PAUL M. HERR, AND NORBERT SCHWARZ.

GOODMAN AND PAOLACCI (2017), "CROWDSOURCING CONSUMER RESEARCH," *JOURNAL OF CONSUMER RESEARCH*, 44 (JUNE), 196-210. *AVAILABLE AT WWW.JOSEPHKGOODMAN.COM*

Special Thanks to my Coauthors

GABRIELE PAOLACCI

ERASMUS UNIVERSITY

SCOTT WRIGHT

PROVIDENCE COLLEGE

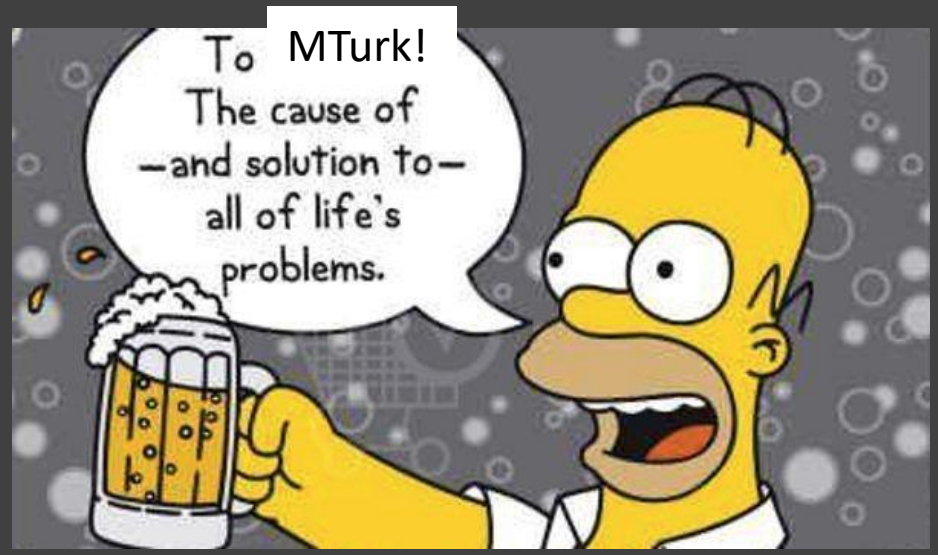
Agenda

Myth or truth? Debunking a few myths

Editors and Reviewers: How do they feel?

Solutions and Tips

- CloudResearch (formerly TurkPrime)
  - See also Positly.com as an alternative



Mturk Myth or Truth?

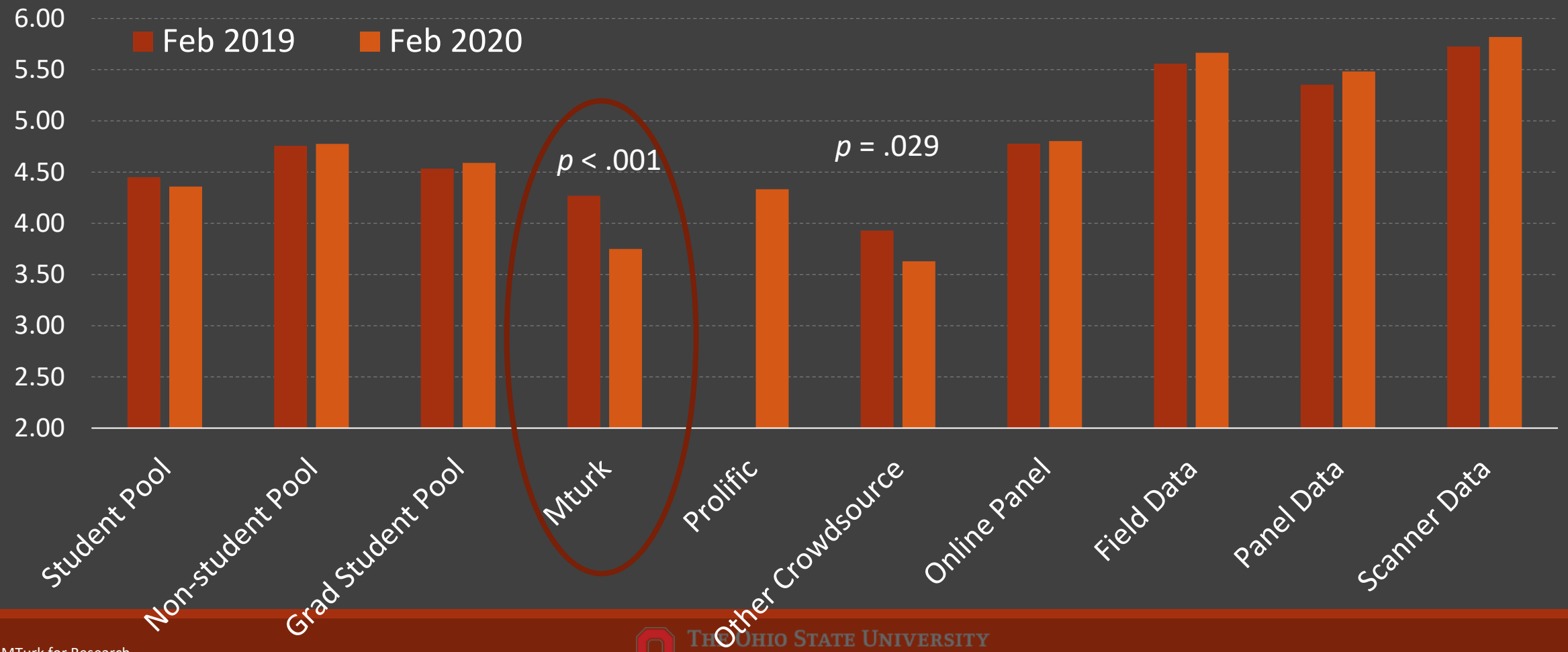
1. ~~Not real people~~
2. ~~Low quality data~~
3. ~~Uneducated~~
4. ~~Poor/low income~~
5. ~~Internet geeks~~
6. ~~The lab is still more reliable~~
7. ~~They don't pay attention~~
8. ~~Mostly Indian~~
9. ~~Mostly non-native English~~ speakers
10. Editors/reviewers hate it!
    - Won't accept papers with only Mturk data
    - And other views about Mturk
11. Attention: Bots! Bots! Bots!
12. Is it MTurk, Mturk, or mturk?
13. Non-naivete
14. Drop outs/p's pre-screening
15. Pre-screening

?

What Do Researchers Think about Mturk?

...*Decrease in Quality Perceptions*

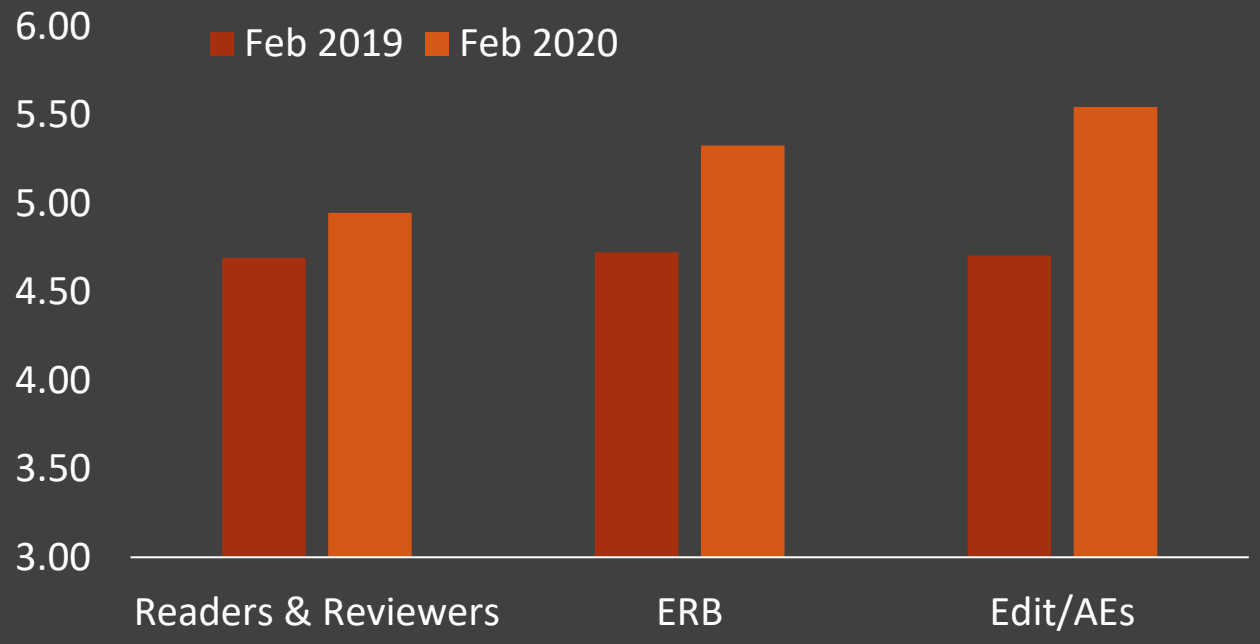
How do you perceive the quality of data obtained from the following sources?



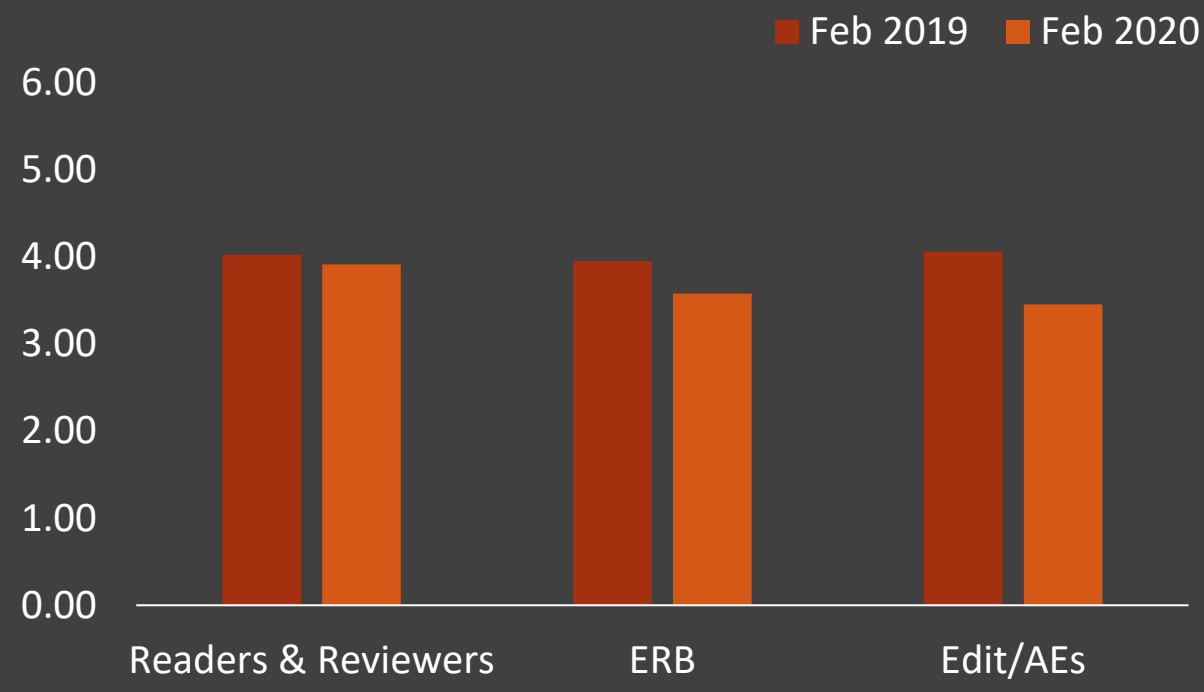
What Do Researchers Think about Mturk?

...*Decrease in Quality Perceptions*

Papers should not have all their data from Mturk

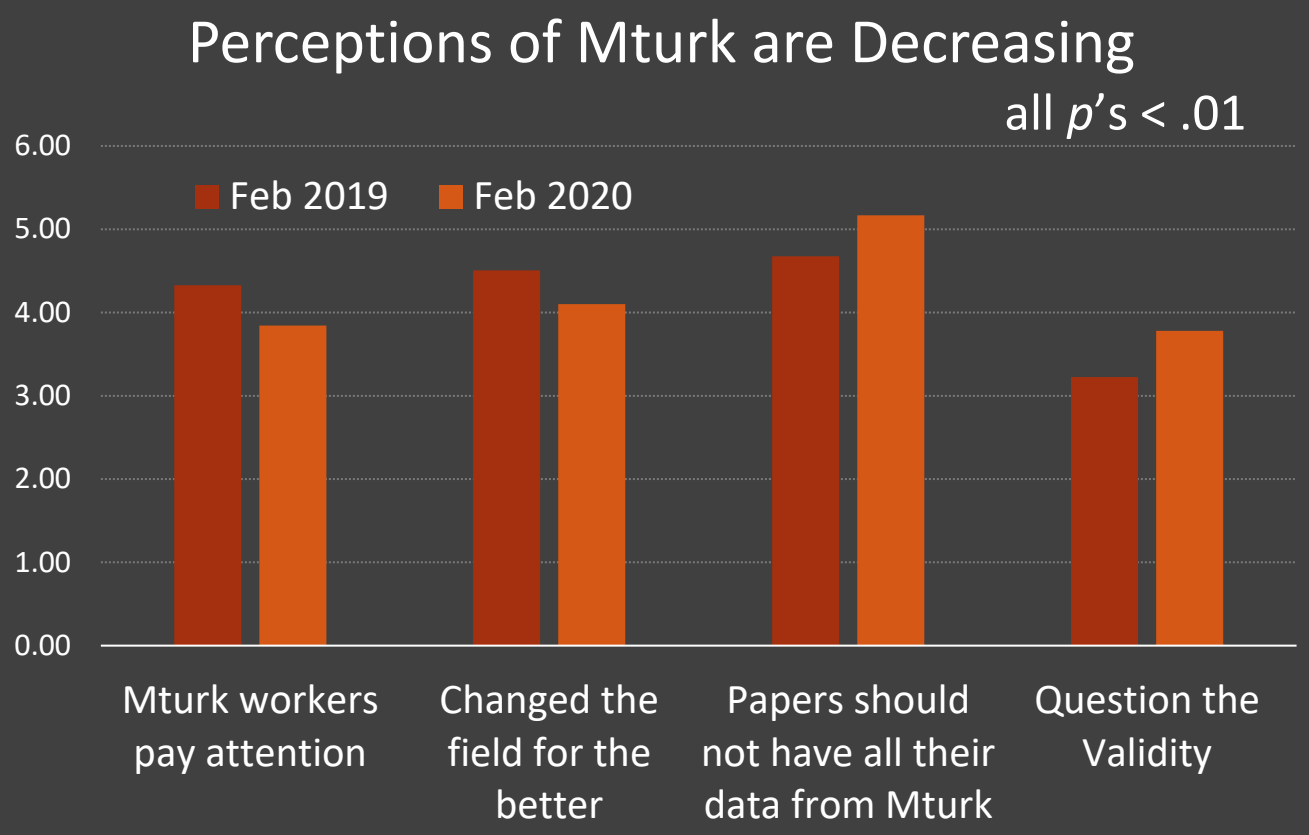


Mturk samples are better than student samples.



What Do Researchers Think about Mturk?

...*Decrease in Quality Perceptions*



- Trust seems to be decreasing
- Quality measures correlated with
  - Age
  - Rank
  - Usage
- Wisdom or Familiarity?
- Researchers expect Mturk use to grow
- What to do? Some solutions…

Solution 1: Stop Doing MTurk Studies

Solution 2: Get a job at Ohio State

(OR OTHER SCHOOL WITH 8000 SUBJECT HOURS/YEAR)

Solution 3: Other Platforms?

Prolific
- Requires > $6.50/hr
- Representative samples (extra $)
- Pre-screening (not extra $)
- Slightly slower
- Simple and more integrated
- Slightly less attention?

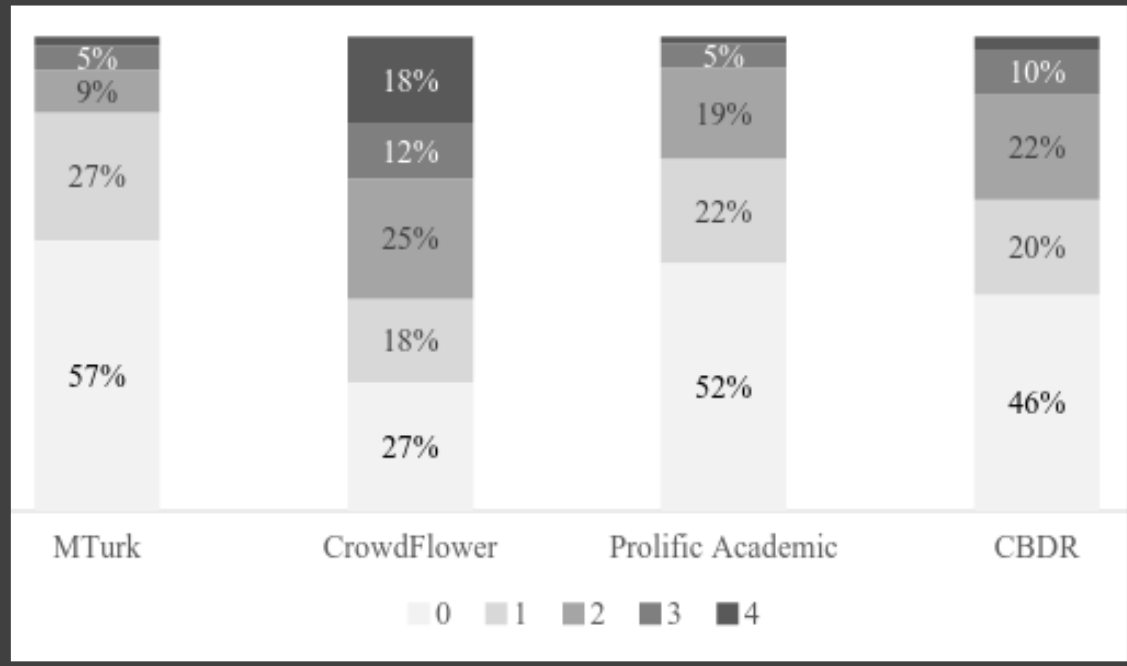
CrowdFlower

Positly and CloudResearch (will discuss)

Qualtrics Panels

Others?

Peer, Samat, Brandimarte, & Acquisti (2017)
JESP
# of failed attention check questions between the platforms (% of P's)



Solution 4: Measure Real Behavior on MTurk

Example$_1$: Tonietto, Malkoc, & Nowlis (2019)

- P's entered their availability/calendar on Qualtrics
- IV: Generate times bounded/not bounded by tasks (btw SS)
- DV: Choice of MTurk study
  - 30 minute brief study for $2.50
  - 45 minute full study for $5.00
  - Neither

Example$_2$: Coin flip game to measure cheating (Balasubramanian, Bennett, and Pierce 2017)

Solution 4: Measure Real Behavior on MTurk

Example$_3$: Take picture of artwork and upload or email it

Example$_4$: Costello and Malkoc (working paper)

- DV: Donate $ or donate time (micro-donations: counting/classifying animals, algae, weather patterns)

- Do you have other examples?

Solution 5: Go Beyond Surveys

Longitudinal studies
- 60% retention rates (but need to pay more)

Group interactions

Webcams for facial expression analysis and analyzing emotions (FaceReader)

Physiological measures
- Measure heart rate (Muender et al. 2016)

RA Work
- Classification of content
- web searches
- registering for websites
- viewing ads
- edit transcripts
- test software
- skilled tasks: logo & graphic design, ad copy
  - See Fiverr, Upwork, Guru

Issue: Data Quality and Bots

How bad is it?

- Different opinions, and changed over time
- Bot-gate: August 2018
  - Evidence that they are foreign workers with low Enligh proficiency, posing as US workers
- "Workers pay attention"
  - 2019: 4.33
  - 2020: 3.84

SOLUTIONS

Attention checks?

- More on this later…

Increase your sample size!

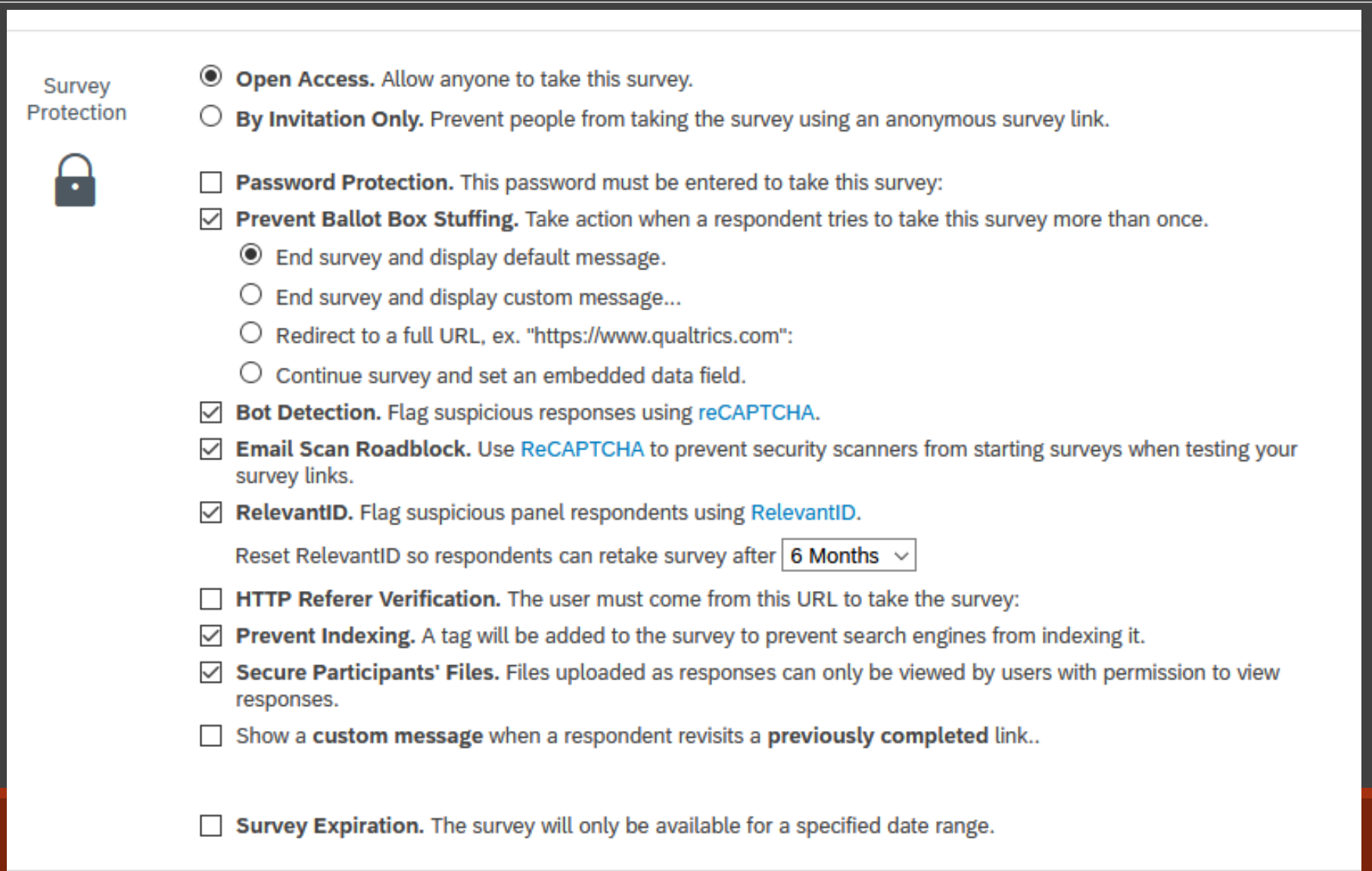
n = 100+ per cell (see datacolada.org)

Use CloudResearch or Positly

TaskMaster: cut and paste html into qualtrics

Permut, Fisher, & Oppenheimer (2019). TaskMaster: A Tool for Determining When Subjects Are on Task, *Adv. in Methods & Practices in Psych Science*

Use Qualtrics Bot Detection (if your license has it)



Issue: Attention & Checks

Researchers are using them more:

- 2019: 74%
- 2020: 85%

Downsides

- "Attention" might mean not naïve or those with higher Need for Cognition or System 2 processing
- P-hacking: Pre-register your attention check

Mturk Masters?

- Not naïve, $$$
- 18% researchers use Masters

Solutions

CloudResearch

- 43% researchers some sort of blocks via CloudResearch (up from 31%)
- Now has
  - "Block Low Quality Participants"
  - "CloudResearch Approved Participants"

Be objective: Not arbitrarily decide what 'bad data' looks like post-hoc

Pre-register!

Issue: Pre-screening & Non-naiveté

Non-naiveté

- We may be sampling the same people across studies
- Sampling same 7,300 workers on average (Stewart et al. 2015)
- Consider sampling workers with less experience (eg, < 500 HITs)

Workers are usually honest, but will lie to be eligible for participation

- 48/106 heterosexual workers claimed LGB to be eligible for study
- 8% women, 17% men changed gender to be eligible for study

Lying increases with compensation

Lie more about owning a dog than religion or politics

Chandler & Paolacci 2017, Wessling, Huber, & Netzer 2017

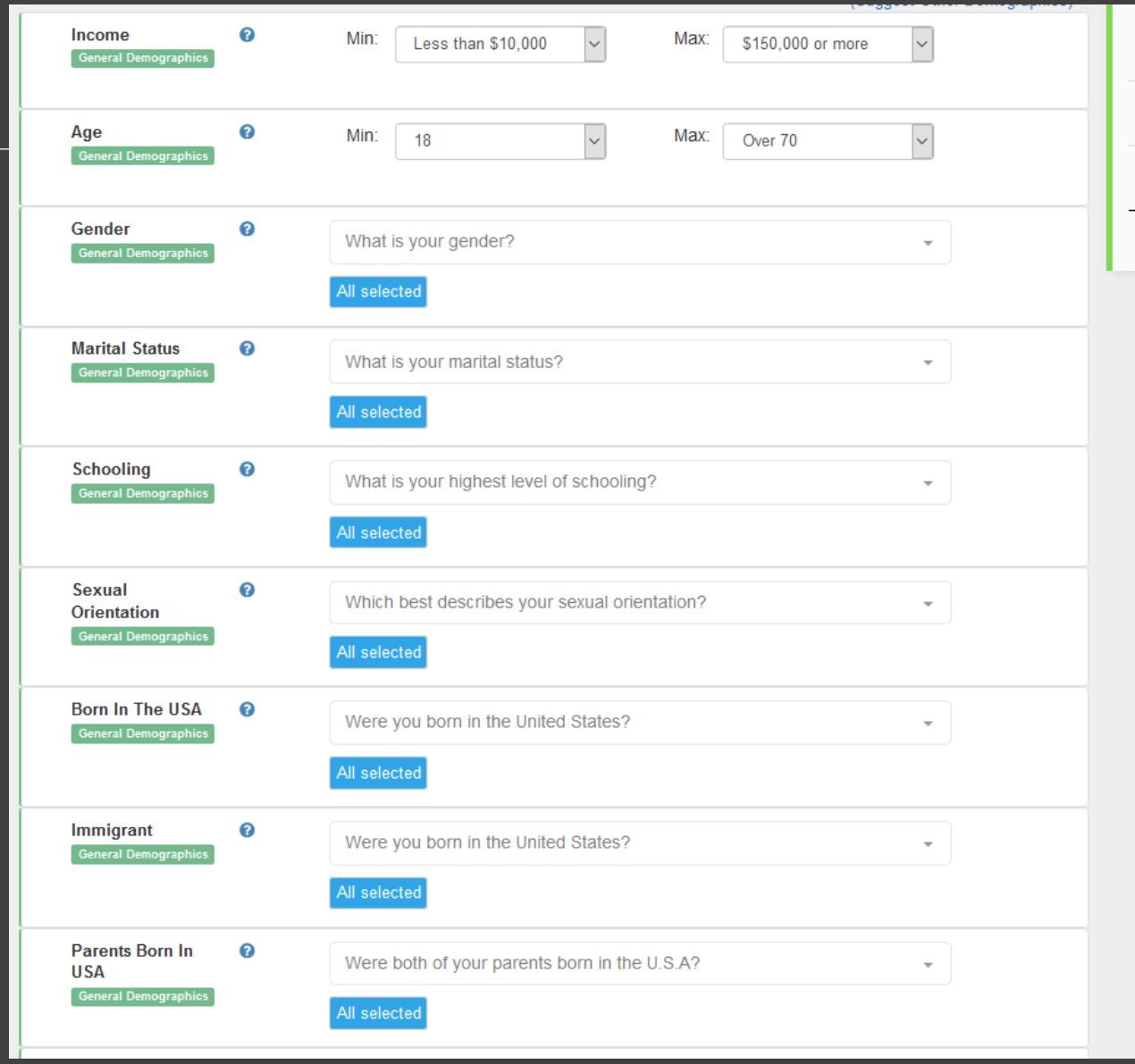
Pre-screening on CloudResearch: Two Ways

Pay to use CloudResearch's criteria

- $$$, but lots of options and fast

Create your own database (see supplemental slides)

- Stage 1: Collect important info (eg, gender, age, political affiliation)
- Stage 2: Launch HIT limited to target group



Issue: Compensation

"You get what you pay for" does NOT apply to Mturk.

- Research shows: Paying More ≠ Better Data

What do others pay? Our surveys say

- $0.31 for a 5-minute study

Minimum wage?

- Min wage of $7.25/hr in US ($.121/min)

Guidelines for Researchers

http://wiki.wearedynamo.org/index.php/Guidelines_for_Academic_Requesters

Use qualifications and pre-screening
- > 95% approval
- Do not let workers to screen themselves

Be Ethical – pay a fair wage
- Min wage of $7.25/hr in US ($.121/min)

Collect Data and Track your participants
- Collect basic demographics
- Prevents non-naiveté, anonymous via CloudResearch

Try other sources

Attention: Bigger samples or use objective checks and pre-register.

Guidelines for Academic Requesters

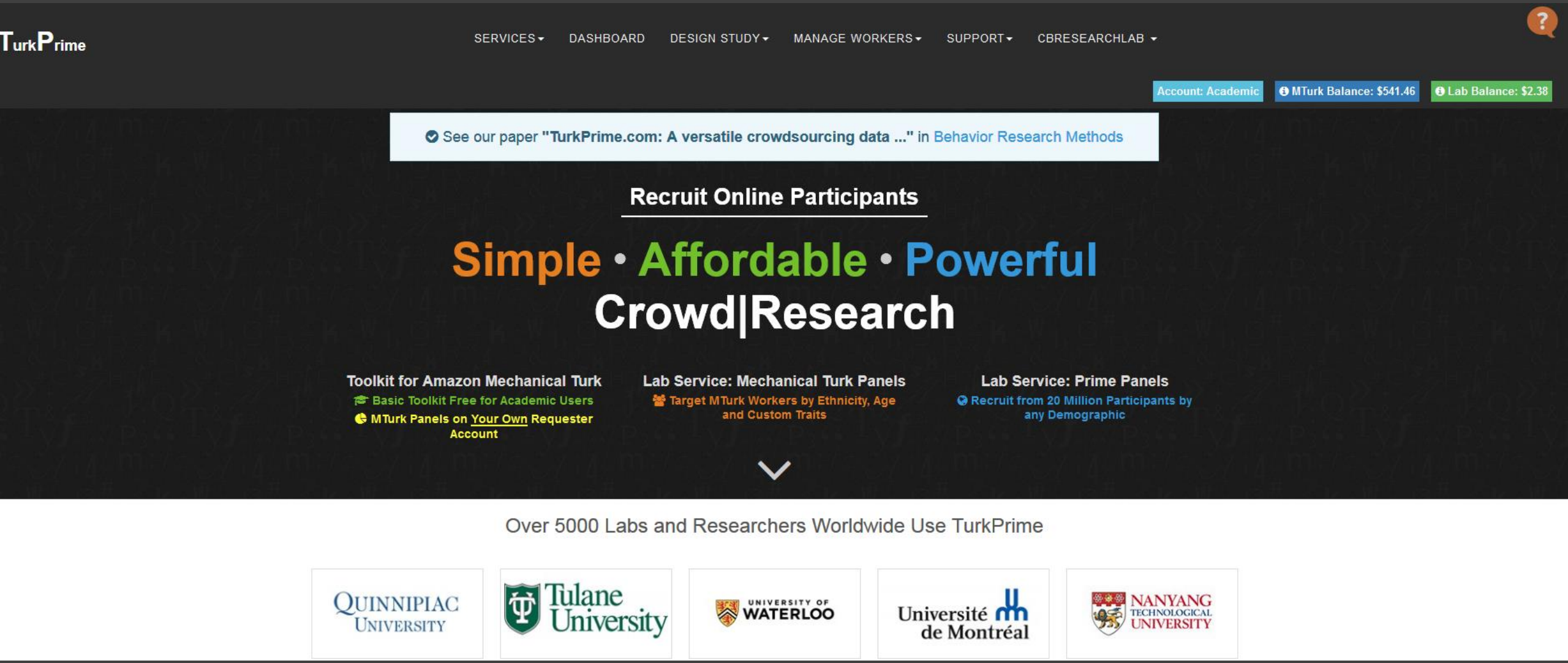
- Clearly identify yourself
- Provide reasonable time estimates
- Approve work as soon as possible
- Maintain worker privacy
- Do not block workers
- Maintain a responsive line of communication

Monitor your reputation.
- Reddit forms
- Turkopticon (shut down)
- Others?

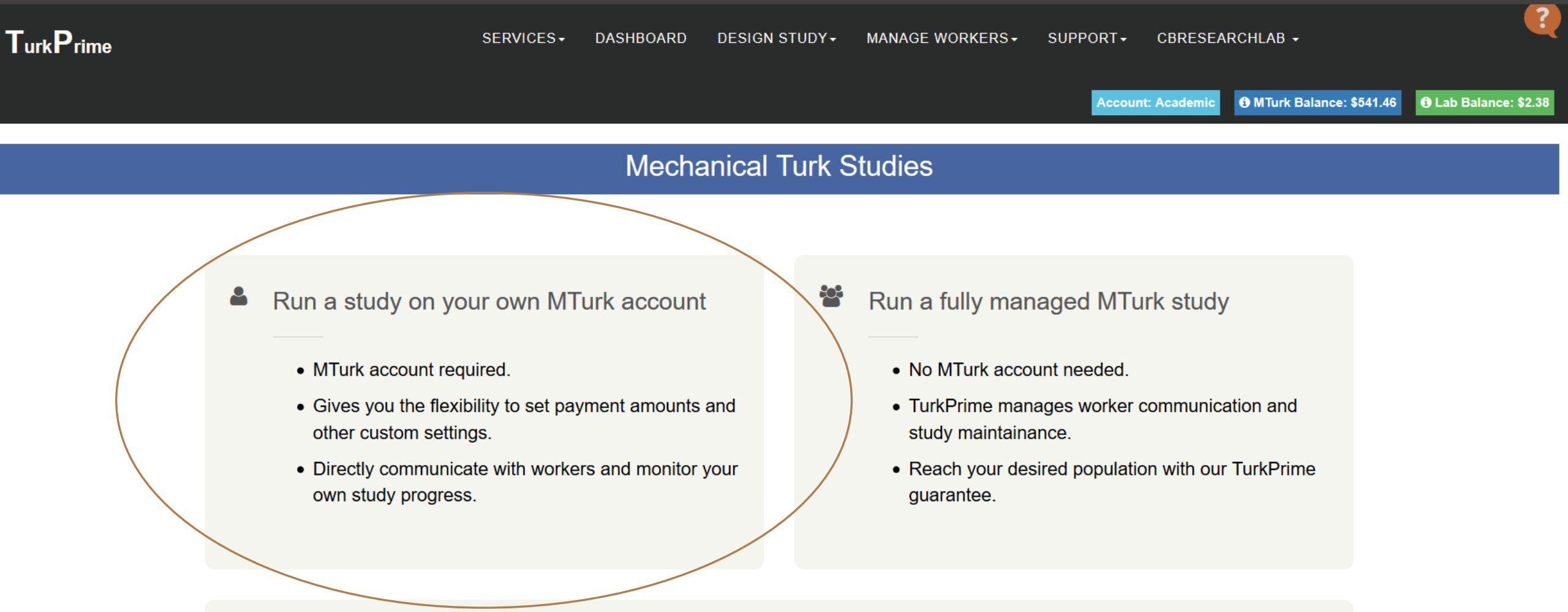
Other Questions?

How to Create Your Own Database of Workers

Many Issues are Solved by CloudResearch



Create a Study



TURKPRIME

Account: Academic | MTurk Balance: $541.46 | Lab Balance: $2.38

MTurk Toolkit

Worker Payments and MTurk Fees funded with your MTurk Requester account. TurkPrime Lab Fees are funded through your TurkPrime Lab account

1. Panel Options (Optional) | 2. Basic Info | 3. Describe HIT | 4. Setup HIT and Payment

5. How Workers are Approved | 6. Worker Requirements | 7. MicroBatch (Pro Feature) | 8. Pro Features

9. Save

Total Number of Survey Participants 1

The number of participants you want to take your HIT

Filter by category...

(Suggest Other Demographics)

Income General Demographics	Min:	Less than $10,000	Max:	$150,000 or more
Age General Demographics	Min:	18	Max:	Over 70
Gender General Demographics	What is your gender? All selected			
Ethnicity General Demographics	Which racial group best describes you? All selected			
Marital Status General Demographics	What is your marital status? All selected			
Household Income	How much total combined income do all members of your household earn before taxes?			

If you do not select a Panel then there will be no Panel charge for your study (other fees may apply, such as Pro Features)

Feasibility

✔ Your study will most likely complete.

Note: The panel fee is in addition to Pro Features fees and is funded through your TurkPrime Lab account.

Panel Cost per Worker	$0.00	Range $0.15-$0.75/Worker submission
Number of Workers	1	
Total Panel Cost:	$0.00 ($0.00 x 1 Workers)	

Next

Chronic Disability Medical		Do you have a disability or chronic illness of any type (either physical or mental)? All selected
Migraines Medical		How often do you experience migraines, if at all? All selected
Future Exercise Medical		Do you intend to engage in regular exercise in the next six weeks? All selected
Dieting Medical		How often are you dieting? All selected
Fitness Tracker Medical		Do you regularly use a pedometer or any other type of fitness tracker? All selected
Chronic Pain Medical		Do you have a diagnosis of chronic pain (pain lasting more than 12 weeks) ? All selected
Occupation Occupation		Which best describes your current occupation/job/career; If student, career goal? All selected
Current Status Occupation		Which of the following best describes your current status? All selected
Industry Occupation		Please select the industry that best describes your work and/or field of training: All selected
Current College Student Occupation		Are you currently? All selected
Supervisor Occupation		Are you employed full time in a supervisory position or higher where people report directly to yc All selected
Hours Employed Occupation		How many hour per week do you work? All selected

* **Title**

Short Survey

Title of the survey that will be displayed to workers

Description

Answer a short survey. Takes about 1 minute!

A description of your survey

Custom Instructions

Survey takes about 1 minute.

Note: This HIT is an academic study being conducted by university researchers. Your answers are completely anonymous and we are just interested in your opinions. It is not being conducted for commercial purposes or to make profit, and it won't be sold or used by a company or marketers. You don't have to search the Internet on this HIT. It's just opinion questions, so please take your time to answer the questions honestly.

Requirements:

- Must be 18 or older

(Optional) It is best to include instructions on your survey landing page. Nevertheless, you may include custom instructions to display to workers.

Standard instructions that workers should follow the hyperlink and submit a secret code (if set) are always included and will follow the custom instructions, if specified.

Keywords

survey, study, academic, preferences

Keywords associated with your HIT

☐ This project may contain potentially explicit or offensive content, for example, nudity

9. Save

Worker Payment Per Survey $ 0.1

Amount you will pay each worker who completes your HIT

Expected time to complete HIT 1 Minutes

The estimated amount of time for Worker to complete HIT. This will be appended to your HIT description.

Restarting your HIT

To enable Restarting your HIT make sure that the time allotted for the HIT is no longer than 90 minutes

Time allotted per assignment 10 Minutes

Maximum time allowed for a Worker to complete the HIT

HIT expires in 7 Days

The amount of time you want your HIT to be active for

*** Survey Hyperlink** https://osu.az1.qualtrics.com/jfe/form/SV_3xa1WCRuJL9LSXb Preview link in new tab

The URL of your survey

Query String Parameters

TurkPrime will add the following query string parameters to your URL so you can take advantage of them in your data collection. The parameters are: `workerId`, `assignmentId`, and `hitId`.

- `workerId` -The MTurk Worker ID
- `assignmentId` -A unique ID that Amazon generates for a worker taking your HIT
- `hitId` -The ID of your HIT

For example, if your Survey Link is https://www.example.com, we will add the above parameters to the URL, so the final URL might look like https://www.example.com?workerId=ABCD1435&hitId=35hgfsbdu&assignmentId=vbwjebwufg. You can then take advantage of these parameters by setting up Qualtrics Embedded Data

Scheduled Launch Time (UTC)

Please note that you may leave the Scheduled Launch Time blank if you want to launch your survey right away. This feature is useful if you want to automatically launch your survey at a later time.

Scheduled Launch Time (UTC) Pick an optional launch-off date...

Please note the time needs to be in UTC format so if you want to launch on Feb 15, 2018 at 02:00 PM Eastern Time, the time should be 02/15/2018 07:00 PM

Required Format UTC Time Zone

UTC Time Now: 02/14/2018 04:52 AM

Automatic Worker Bonus $ 0

The amount of time you want your HIT to be active for

* **Survey Hyperlink** https://osu.az1.qualtrics.com/jfe/form/SV_3xa1WCRuJL9LSXb Preview link in new tab

The URL of your survey

Query String Parameters

TurkPrime will add the following query string parameters to your URL so you can take advantage of them in your data collection. The parameters are: `workerId`, `assignmentId`, and `hitId`.

- `workerId` -The MTurk Worker ID
- `assignmentId` -A unique ID that Amazon generates for a worker taking your HIT
- `hitId` -The ID of your HIT

For example, if your Survey Link is https://www.example.com, we will add the above parameters to the URL, so the final URL might look like https://www.example.com?workerId=ABCD1435&hitId=35hgfsbdu&assign

take advantage of these parameters by setting up Qualtrics Embedded Data

Scheduled Launch Time (UTC)

Please note that you may leave the Scheduled Launch Time blank if you want to launch your survey right away. This feature is useful if you want to automatically launch your Survey at a **later** time.

Scheduled Launch Time (UTC) Pick an optional launch-off date...

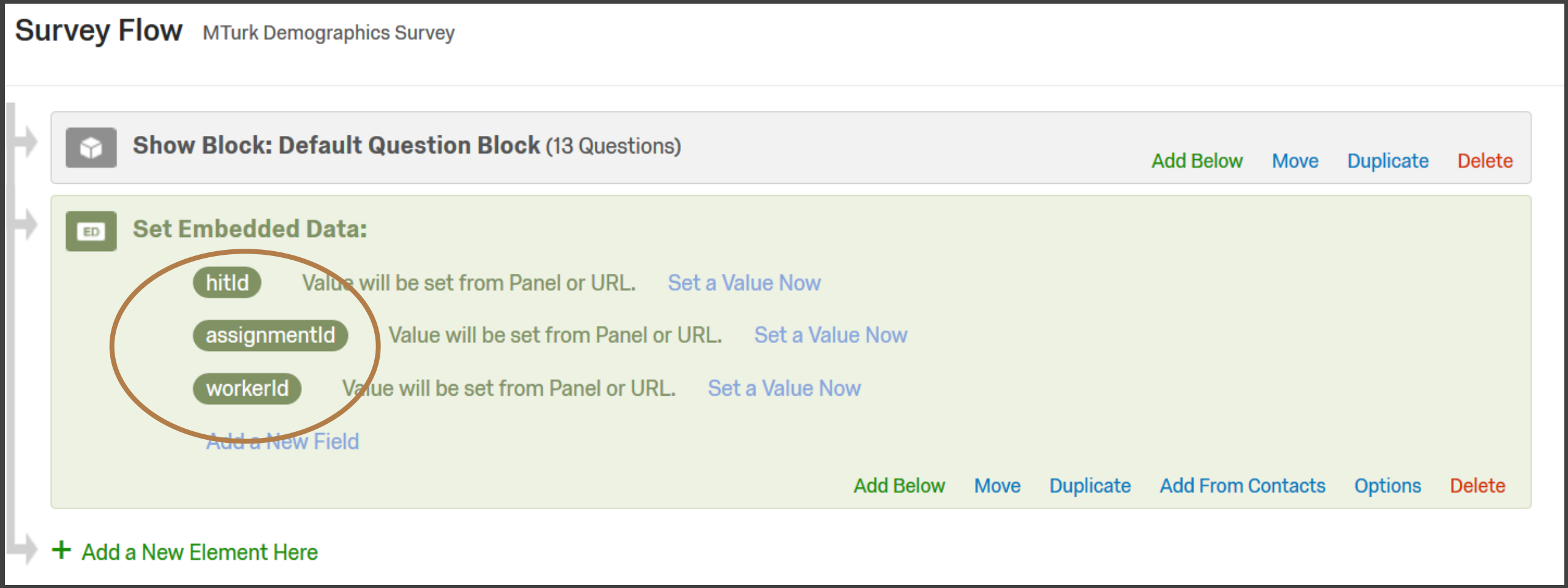
Required Format UTC Time Zone

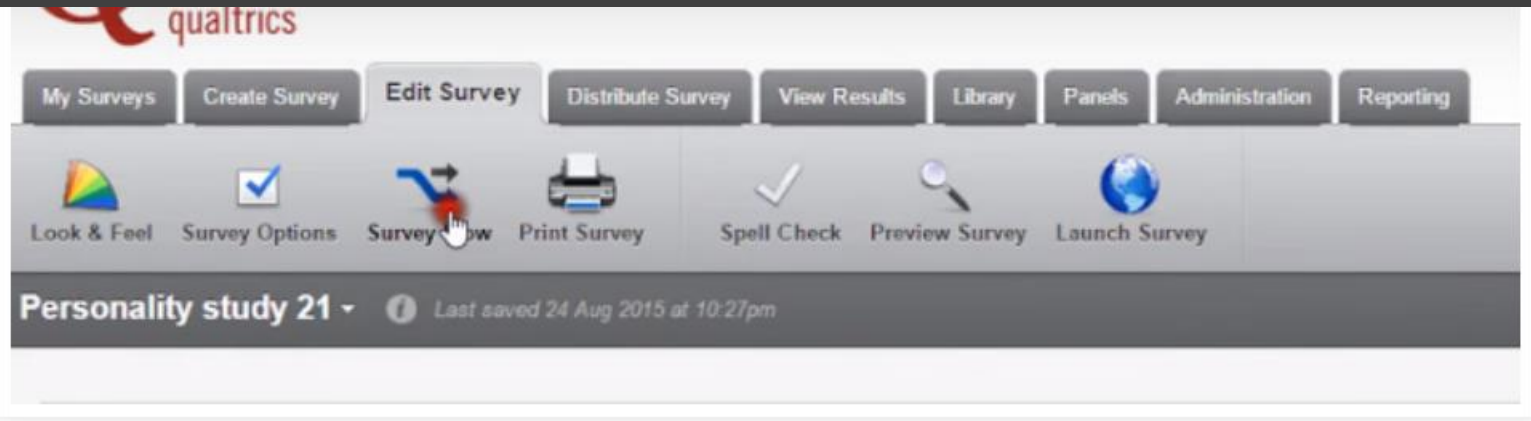
UTC Time Now: **02/14/2018 04:52 AM**

Please note the time needs to be in UTC format so if you want to launch on Feb 15, 20
Eastern Time, the time should be 02/15/2018 07:00 PM

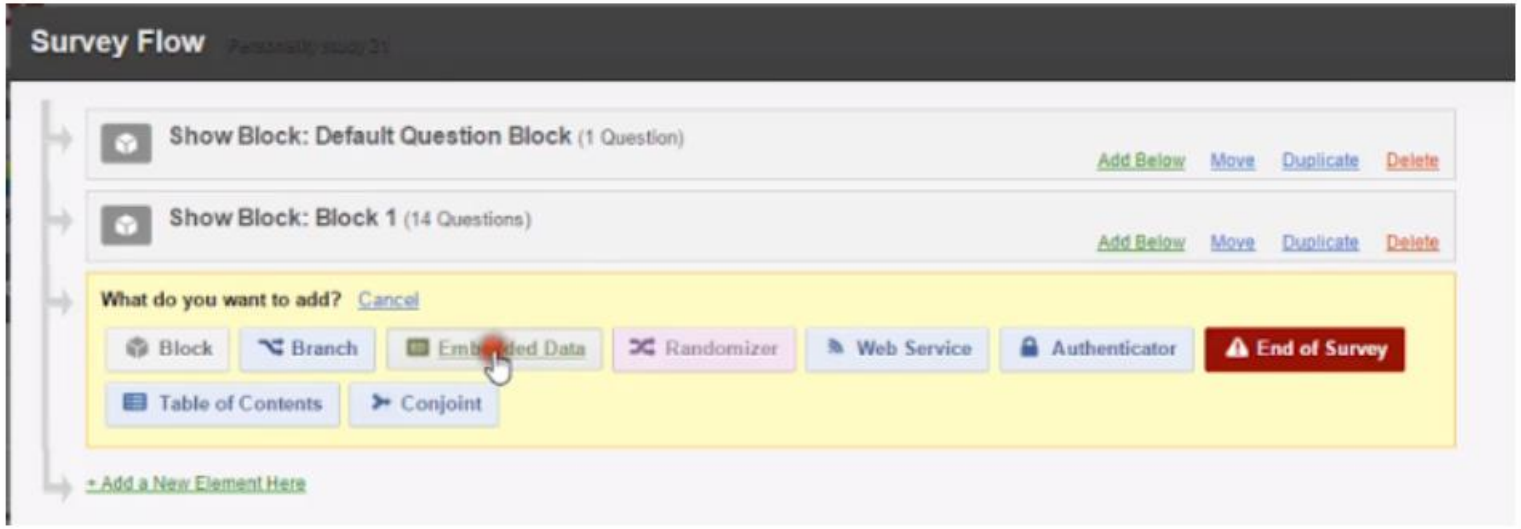
Automatic Worker Bonus $ 0

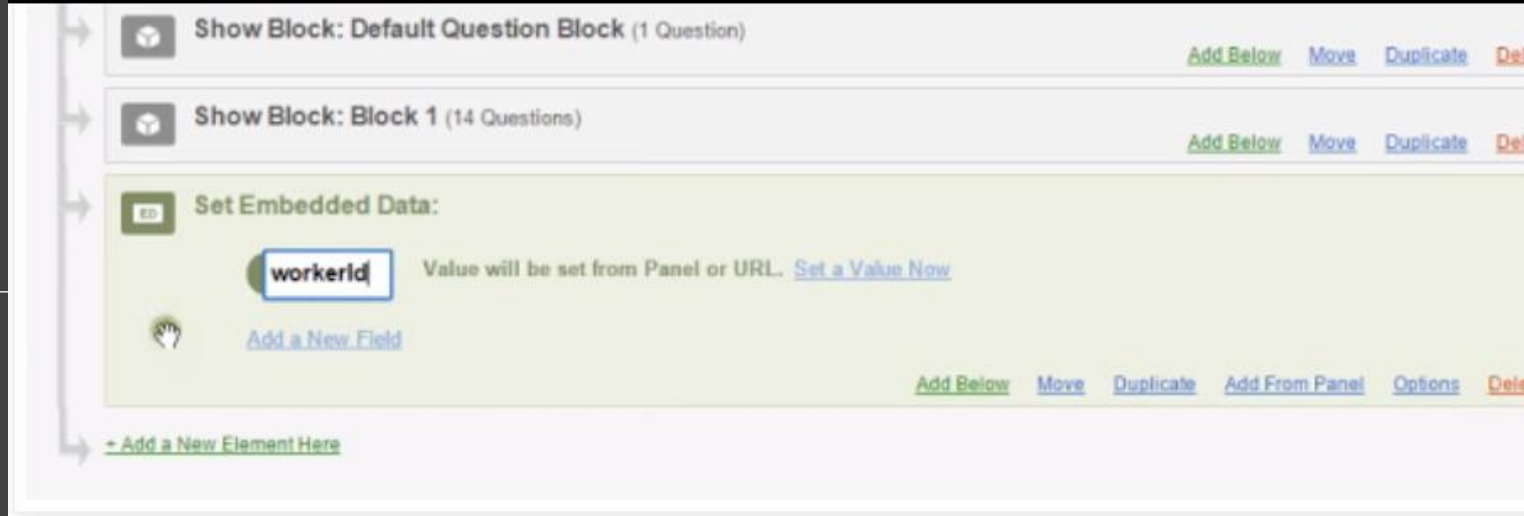
Now go to your Qualtrics Survey → "Survey Flow" → "Set Embedded Data" → enter variable names (case sensitive!)

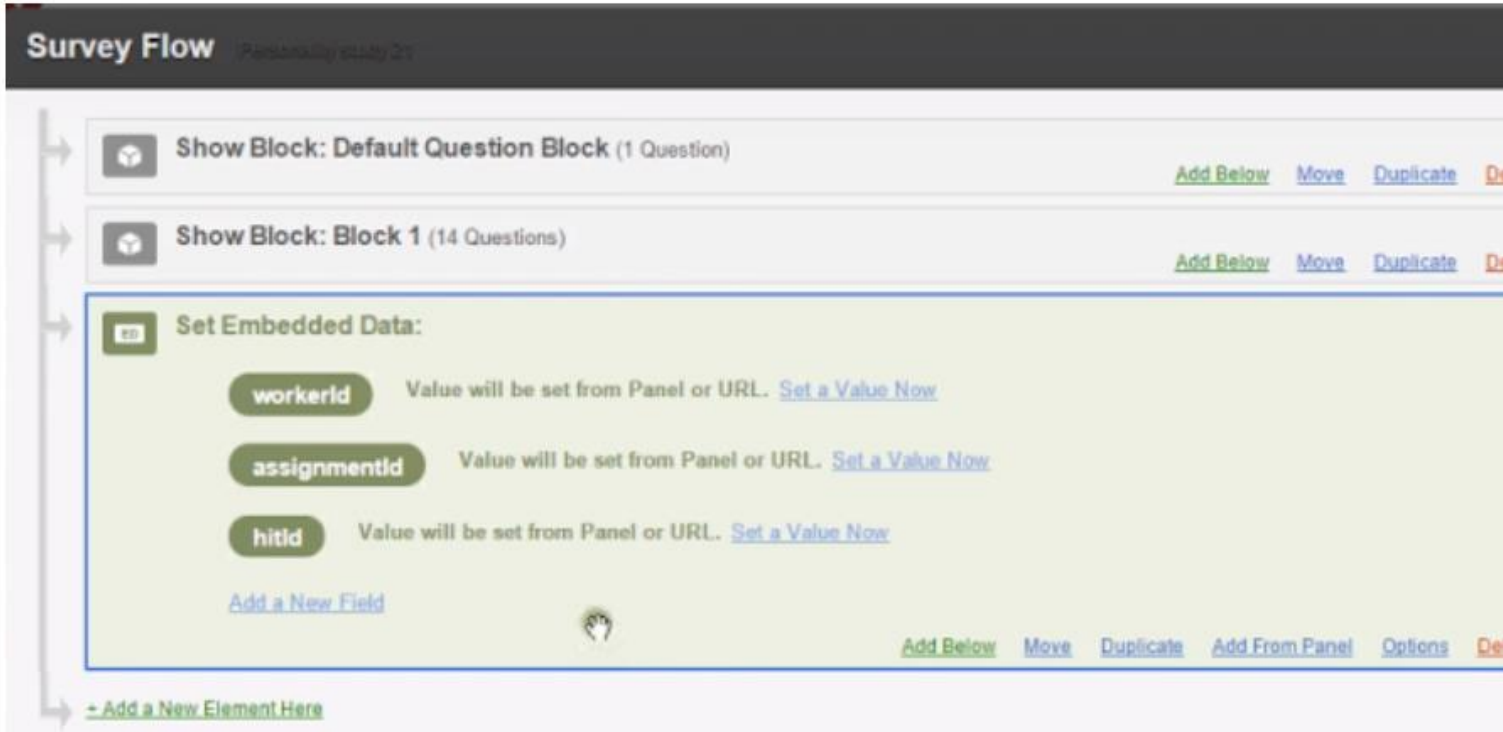



qualtrics
My Surveys
Create Survey
Edit Survey
Distribute Survey
View Results
Library
Panels
Administration
Reporting
Look & Feel
Survey Options
Survey Flow
Print Survey
Spell Check
Preview Survey
Launch Survey
Personality study 21
Last saved 24 Aug 2015 at 10:27pm

Survey Flow
Show Block: Default Question Block (1 Question)
Add Below
Move
Duplicate
Delete
Show Block: Block 1 (14 Questions)
Add Below
Move
Duplicate
Delete
+ Add a New Element Here


Survey Flow
Show Block: Default Question Block (1 Question)
Add Below
Move
Duplicate
Delete
Show Block: Block 1 (14 Questions)
Add Below
Move
Duplicate
Delete
What do you want to add?
Cancel
Block
Branch
Embedded Data
Randomizer
Web Service
Authenticator
End of Survey
Table of Contents
Conjoint
+ Add a New Element Here


Show Block: Default Question Block (1 Question)
Add Below Move Duplicate
Show Block: Block 1 (14 Questions)
Add Below Move Duplicate
Set Embedded Data:
workerId
Value will be set from Panel or URL. Set a Value Now
Add a New Field
Add Below Move Duplicate Add From Panel Options
+ Add a New Element Here


Survey Flow
Show Block: Default Question Block (1 Question)
Add Below Move Duplicate
Show Block: Block 1 (14 Questions)
Add Below Move Duplicate
Set Embedded Data:
workerId
Value will be set from Panel or URL. Set a Value Now
assignmentId
Value will be set from Panel or URL. Set a Value Now
hitId
Value will be set from Panel or URL. Set a Value Now
Add a New Field
Add Below Move Duplicate Add From Panel Options
+ Add a New Element Here

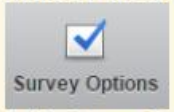
Back to CloudResearch…

Dynamic Completion Code For Qualtrics

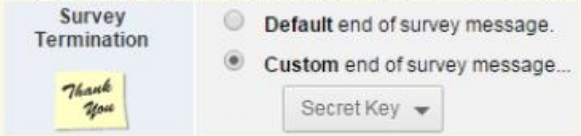
◉ Each worker will have a unique secret code. Your HIT can either be auto-approved or manually approved.

Setup for Qualtrics

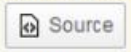
1. Create or Edit a Survey
2. Click on "Survey Options"



3. In the Survey Termination Section: Click on Custom end of survey message...



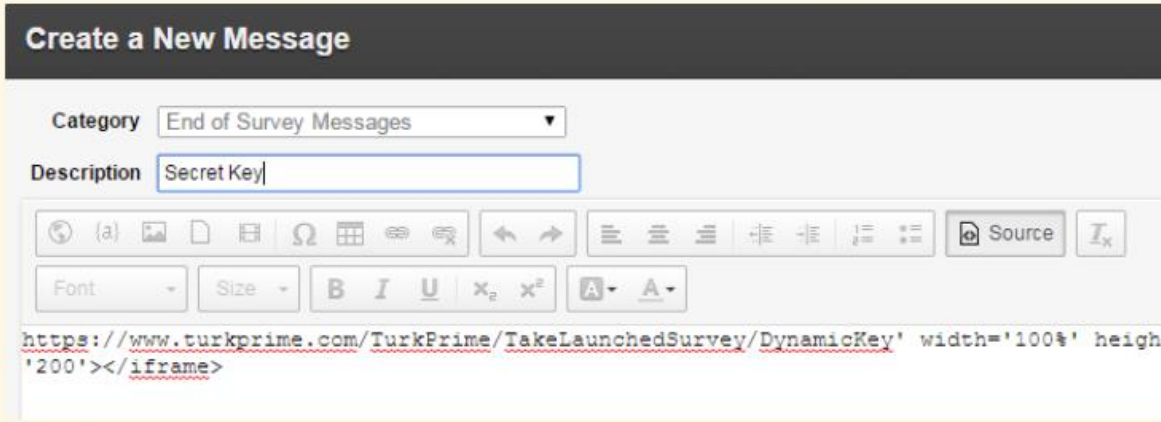
4. If you have a Secret Key option that you previously created Select it and you are done/ Otherwise, Click New Message
5. Enter Secret Key in the Description field. (Next time you can select this message.)
6. Click the Source



button

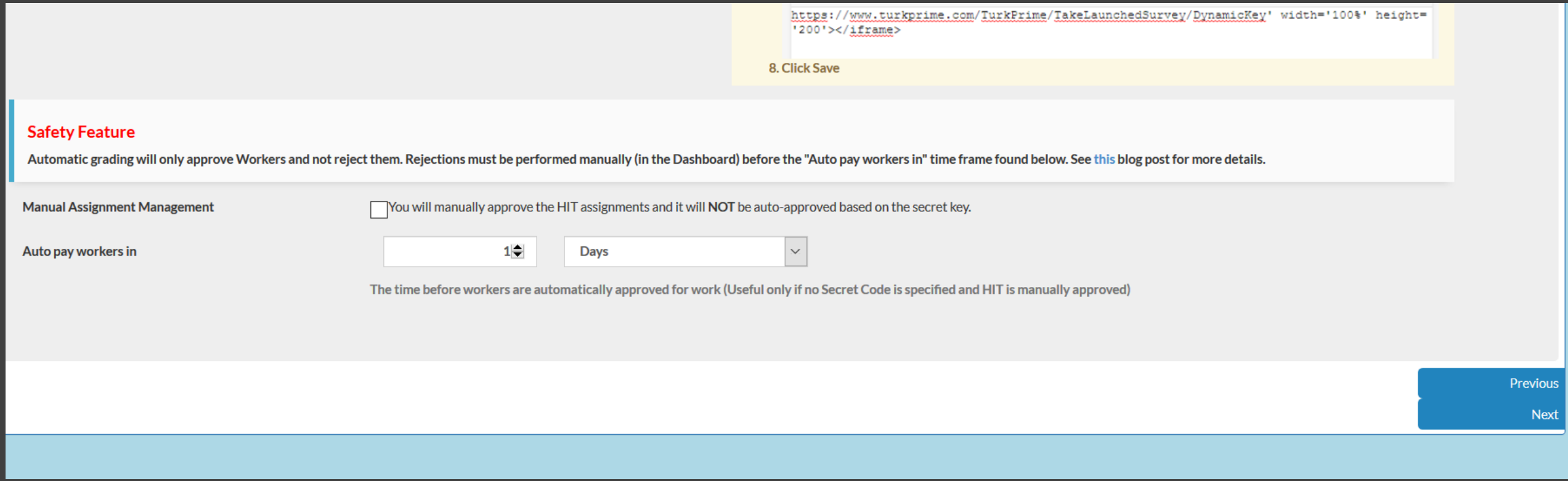
7. Paste the following text exactly into the window as shown

```
<iframe src='https://www.TurkPrime.com/TakeLaunchedSurvey/DynamicKey' width='100%' height='200'></ifram
```



8. Click Save

Auto Pay Workers (approve only if completion code is correct)



Exclude Workers Who Completed These Surveys (live studies are not included)

Select Excluded Surveys

× inc exc pilot[Study about Decision Making(~ 8 minutes)Sep 27 2016 6:02PM](22243)

Allow only Workers Who Completed and Were Approved

All

of These Surveys (live studies are not included)

Select Included Surveys

Blocks workers that participated in your other relevant studies

Exclude Workers with These Worker IDs (You can use either TurkPrime Worker IDs or Amazon Worker IDs). Enter each on a separate line (Maximum 2000)

Only allows workers with IDs that you enter. Copy & Paste your list here!

Include Workers with These Worker IDs (You can use either TurkPrime Worker IDs or Amazon Worker IDs). Enter each on a separate line (Maximum 2000)