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Gender and AI adoption - Study 1: Students (#150413)

Created: 11/09/2023 05:57 AM (PT)

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1) Have any data been collected for this study already?

It's complicated. We have already collected some data but explain in Question 8 why readers may consider this a valid pre-registration nevertheless.

2) What's the main question being asked or hypothesis being tested in this study?

This first study is part of a bigger project "Will Artificial Intelligence get in the way of gender equality?". The first study seeks two purposes: (i) identify whether a gender gap exists in the adoption of ChatGPT and (ii) explore the underlying mechanisms driving any observed disparities. First, we collect a series of measures of ChatGPT usage to assess whether there is a gender gap in AI use, overall and on different margins of interest. In the event of a detected gap, the study will proceed to identify its underlying causes. For this purpose, we have pinpointed three primary factors influencing ChatGPT usage: preferences, perceptions, and exposure/experience.

Drawing on insights from a pilot survey in Prolific and existing literature on internet technology usage, we anticipate observing gender-based disparities in ChatGPT adoption and usage. While each of the proposed underlying factors has the potential to explain the existence of a gender gap, we will not pre-specify which factor(s) will emerge as the primary driver(s) of this phenomenon.

3) Describe the key dependent variable(s) specifying how they will be measured.

1. Willingness to use ChatGPT: participants will be presented two hypothetical scenarios. In each the main outcome is to indicate how likely are you to use ChatGPT throughout this course, in a scale from 1: Very Unlikely to 5: Very Likely. One treatment has an additional questions that corresponds to indicate how likely are you to use ChatGPT during the exam, in a scale from 1: Very Unlikely to 5: Very Likely.
2. Usage of ChatGPT: we obtain a measure of how often they use ChatGPT and for which tasks.

4) How many and which conditions will participants be assigned to?

This is a vignette study where participants will face a scenario where they participate in a course. There are two levels of randomization:

1. Whether the final assessment is an in-person exam or a home exam. This randomization is between subject.
2. Whether the professor allows or forbids the use of ChatGPT. This dimension is studied within subject, with randomization on the order of the scenarios.

In total, each participant faces two scenarios. The randomization is done by the gender indicated by the participant.

5) Specify exactly which analyses you will conduct to examine the main question/hypothesis.

Linear regression over the Willingness to use ChatGPT across treatments. We will also pool the Likely and Unlikely levels of the scale, and perform analysis over two dummies, one with value 1 if answer is Likely and another with value 1 if answer is Unlikely.

6) Describe exactly how outliers will be defined and handled, and your precise rule(s) for excluding observations.

We will not analyze data of participants who started the survey outside of 20 minutes from the time at which the survey was implemented in classroom.

7) How many observations will be collected or what will determine sample size? No need to justify decision, but be precise about exactly how the number will be determined.

The study is made in three lectures of three different courses at NHH. A master's course: with around 30 participants, and two bachelor's courses, where we expect around 300 participants in each course to attend the lecture and participate.

8) Anything else you would like to pre-register? (e.g., secondary analyses, variables collected for exploratory purposes, unusual analyses planned?)

As we were not able to edit our preregistration at AEA RCT Registry (November 6, 2023), which did not include the between-subject randomization, we make this pre-registration to indicate this addition. Relative to the test data we collected on November 7, 2023 (N=28), we will delete the option Neutral/Unsure from the trust question. The data from the bachelor's courses has not been collected.