Closing the Gender Gap with Practice: Pilot study

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Overview
The objective of this study is to determine whether there is a gender gap in willingness to compete using a novel real-effort task (i.e., a key-entry task). It is predicted that women will be less willing to compete compared to men, independent of their performance. Also, we predict that confidence and risk aversion will explain part of the gender gap.

Motivation
Previous research suggests that women are less willing to compete than men, even when they are equally, if not more, qualified (Niederle & Vesterlund, 2011). This has detrimental effects upon labor market outcomes for women (Altonji & Blank, 1999). Previous tasks have been conducted in the lab, typically using an arithmetic task (Niederle & Vesterlund, 2011). We will test whether the gender gap in competitiveness is replicated using a new real-effort task with 320 participants on Amazon Mechanical Turk (AMT) who will participate in a series of rounds with the opportunity to compete. We will examine whether there is a gender gap in the willingness to compete, which will allow us to proceed with future studies online using the task.

Hypotheses
Primary Hypothesis I
Women will be less willing to compete compared to men, regardless of their performance.

Secondary Hypothesis I
Confidence and risk aversion will explain part of the gender gap.

Secondary Hypothesis II
Performance will improve across rounds.

Sampling Plan
Data collection for this project has not yet begun. We plan to recruit 320 participants on Amazon Mechanical Turk to complete a study examining "decision-making."

Variables
Measured variables
Willingness to compete: We will determine the number of participants that choose the tournament payment scheme compared to the piece-rate payment scheme in round 3.

Confidence: After completing the tasks, participants will respond to questions about their perceptions of their relative performance compared to their partner.

Risk aversion: We will use the typical operationalization of risk aversion used in previous studies, where participants will respond to the question "How do you see yourself: Are you generally a person who is fully prepared to take risks or do you try to avoid taking risks?" on a 1-10 scale.

Performance: Every correct key sequence entered will correspond to a point earned during the task. Performance will be quantified by counting the number of points earned.

Design Plan

Participants will iterate through three rounds of a key-entry task. The payment schemes will vary from round 1 (piece-rate payment scheme) to round 2 (tournament payment scheme), and participants will have the option to choose between the two payment schemes in round 3.

Analysis Plan

Primary Hypothesis I
Model type: Logistic regression
Predictors: Gender
Outcome*:* Willingness to compete in Round 3

Secondary hypothesis I
Model: Logistic regression
Predictors: Gender
Outcome: Willingness to compete in Round 3
Control(s): Confidence and risk aversion

Secondary hypothesis II
Model: Linear regression
Predictors: Round
Outcome: Performance

Inference Criteria

Significance will be set at $p < .05$ for the primary hypotheses and $p < .01$ for the secondary and exploratory hypotheses (to control for multiple hypothesis testing). We will be using two-tailed tests for all of the analyses.

Screening and data exclusion

The workers who opted into the study had to pass several screening questions to be included as participants in the paid portion of the study. Specifically, participants included in the study had to (i) pass three comprehension questions for the task they would be completing, (ii) be using a computer (rather than a phone or tablet), (iii) identify their nationality as American and live in the United States (to control for gender differences in competitiveness across cultures), and (iv) indicate that they were male or female (instead of responding "Other" when asked about their gender). Also, we excluded the second response for participants who had an identical IP address, MTurkID, and gender. Additionally, for participants who did not enter valid MTurkIDs but had the same IP address, we deleted the second response. If participants had the same IP address but a different MTurkID, both responses were included in the data.