Beliefs about the Gender Gap in salary negotiation and Economic Behavior - PAP*

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1 Experimental Design

I implement an incentivized online experiment with a sample of women from the general population from the US. The sample consists of 2,000 women of US nationality recruited on the online platform Prolific. The participants report to be either employed (either full-time or part-time) or unemployed seeking for a job. The aim of the experiment is to understand whether the beliefs about the gender gap in salary negotiation affects women's incentivized choices in a labor market context. By providing truthful information that women are way less prone to negotiate their salary compared to men (based on Babcock and Laschever (2003)), I exogenously manipulate the beliefs of the participants on the gender gap in salary negotiation and how the beliefs impact of the participants' information demand for either an AAUW pamphlet on how to negotiate or the average monthly salary for the workers in the participants' sector.

In a society where information is available and can lead people to improve their (economic) decisions and empower them, the decision to study how the beliefs about a specific gender gap in the labor market would translate in a raise of awareness about gender inequality seems appropriate.

Finally, by asking a battery of post treatment questions, I get at the mechanisms behind the effect of beliefs on gender gap in salary negotiation on the demand for the negotiation skill course.

Part 1: Demographics After asking the consent to participate in the study and performing an attention check, I begin the experiment by collecting participants' basic demographic information (age, gender, employment status, if employed in which sector they work, ethnicity, income range, region where they are currently living). I restrict my sample to US women in the age between 18 and 65 years. Moreover, I collect information whether the participants have children.

I also ask what is the specific job sector where the participants work. The purpose of this question is to identify whether the participant works in a job sector that is male dominated[1]

[1] I classify the job sector as male dominated based on the shares of male workers in that sector using the data employment data from US Labor Statistics (2020)

and that requires large social skills.[2]

I conclude the first section of the experiment by asking the participants to state their political affiliation (ie. Democrat, Independent, Republican). Crucially, I collect these demographic variables at the beginning of the experiment to assess whether there is self-selection in the survey completion.

Part 2: Prior Beliefs The participants are informed that a study was conducted by a leading US scholar on how many MBA male and female students are negotiating their salary for their first job. [3] Then, I elicit the participants' quantitative beliefs on the gender gap in salary negotiation. To do so, I firstly provide the participants with the information on the percentage of male MBA students who have negotiated their salary. This information is important because it provides a benchmark to the participants' beliefs on the gender gap in salary negotiation (for a similar approach see Haaland and Roth (2021) and Settele (2020)). Furthermore, the beliefs' elicitation is incentivized by extra payments after the survey, in case of correct answers. This ensures that the participants are really putting effort in the task, and it also reduces the opportunities for participants to engage in political motivated reasoning (Prior et al. (2015)). In addition, I control for the time the participants have spent in reading the text and performing the task, as a proxy for their attention and commitment. Finally, I ask the participants to what extent they are confident in the beliefs they have reported about the gender gap in salary negotiation.

Part 3: Randomization The participants are then randomly allocated in one of the two experimental conditions: **Treatment** and **Control**. What crucially changes between these two experimental conditions is the amount of information received on the actual size of the gender gap in salary negotiation. In particular,

- **Treatment**: the participants are informed that 7% of female MBA students bargain over their salary;

[2]The classification of the jobs is based on the "negotiation skills" needed to perform it. I use the O*NET database to complete the classification (Deming (2017); Hansen et al. (2021)).

[3]Women who hold MBA degrees have been found to earn 74% of what men who hold an MBA earn as despite being equally credentialed, women with MBAs end up with different job titles, are employed at different levels of management, and work in different industries (Mello (2019)).

- **Control**: no further information

Three details of the design are worth noting. Firstly, the control group is a "pure" control group, which means that the participants in this condition do not receive information relevant for this topic. The advantage of this approach is to capture precisely the impact of the information on the participants' changes in beliefs and support for inequality-reducing policies (Haaland and Roth (2020); Haaland and Roth (2021); Settele (2020)). Secondly, I provide the information treatments as a feedback to participants' guesses at the beliefs elicitation stage. This feature of the design aims to reduce the experimenter demand effect (Haaland et al., 2021). Finally, the information will be provided by means of both a clear histogram and in digits to ease the participants' understanding of the information provided in the treatment. The information provision has been shown to be robust to several framing (Haaland and Roth (2021)).

Part 4: Behavioral Measure - Demand for Information I elicit whether the participants' beliefs about the salary negotiation course also affect their demand for information. In particular, the participants learn about the opportunity to receive information which is relevant for them: either negotiation tools from AAUW workshops or the hourly mean wage and the annual mean wage for their job sector at the end of the survey. [4]

To study the information demand, we follow the procedure proposed by Fuster et al. (2021). The respondents choose which piece of information they want to acquire.

The piece of information is at the end of the study to avoid any spillover of the information content on the remaining questions of the study.

Part 5: Posterior Beliefs I elicit participants' posterior beliefs on the size of the gender gap in salary negotiation, to assess whether the information treatment I have implemented has shifted the beliefs in the right direction. I measure the posterior beliefs by asking the questions based on the results of a field experiment by Bursztyn et al. (2017). I pick this study because it collects data on the preferred first salary of both male and female MBA students.

[4]The information is a table summary of the National Occupational Employment and Wages Estimate from U.S. Bureau of Labor Statistics (2020).

More specifically, I ask the participants to report their beliefs on what was the average first salary female MBA students have reported. [5]

The elicitation of these beliefs is not incentivized because the participants could hedge their responses to maximize their earnings. By comparing how the posterior beliefs vary across treatments, I can measure how the participants update their beliefs based on the information they have received. To prevent any form of anchoring, I measure the posterior beliefs by using a different measurement scale compared to the prior beliefs (as suggested in Haaland et al. (2021)).

Part 6: Mechanisms Shedding a light on these beliefs helps to understand the deep motives behind the participants' demand for information for either the negotiation tips or the mean salary. I ask a battery of post treatments questions to all the subjects. However, the framing of these questions is neutral to prevent the control group's participants from inferring any conclusion about the GGSN. Among the mechanisms, I consider the channels that previous research has highlighted to explain negotiation outcomes.

- Beliefs about the perceived effectiveness of the negotiation course. Women who are very skeptical about the negotiation courses they might report to not rely on the app to improve their negotiation skills. These beliefs should lead to a reduction in the demand for the salary negotiation course

- Women feel to be uninformed about negotiation. Women might feel to improve their knowledge about the negotiation process and tactics. This (perceived) knowledge gap might be driving positively the demand for the salary negotiation course.

- Women might be less informed about the mean wages for their job in the US labor market. Although, Cullen and Perez-Truglia (2020) does not find gender differences in the willingness to be informed about peers' salary, women might want to close this (perceived) knowledge gap and acquire information about the mean wages for their job in the US.

[5] I provide the participants of my study with the information about the average preferred salary of male MBA students, as I do in the Prior Beliefs' elicitation part.

- women negotiate along other dimensions of the job than wage (Cortes et al. (2021); Wiswall and Zafar (2017)). It is established that there is a gender difference in the attributes that women and men find important while looking for a job. For example, women might be more prone to accept a lower salary job that allows more time flexibility. Given these preferences, women might be less prone to demand for the salary negotiation tips because they do not need it.

- women are scared of a backlash from the employer when starting the negotiation, because they are expected to ask less (Riley Bowles et al. (2007); Bursztyn et al. (2017)).[6]

Obfuscated Follow-up Few days after the conclusion of the Study 1, I re-contact 1,400 respondents for an obfuscated follow up study (Haaland et al., 2021). I change the graphic interface of the survey and I remove any detail that could make the respondents link the follow up survey with Study 1.

In the follow up, I elicit the respondents' beliefs about the importance of three societal issues: unemployment, gender gap in salary negotiation, and inflation. I use the questions on unemployment and inflation to obfuscate the purpose to check whether the information treatment has persistently altered the respondents' beliefs.

Finally, I collect the respondents' behavior in a bargaining situation where they have to bid their reservation wage to join a extra-task to gain a bonus payment. The respondents know that they are matched with participants from another platform (who act as an "employer"). The respondents' know that they can split $10 between themselves and the "employer". The amount the respondents keep for themselves is $x and $10-x is allocated to the "employer". If these other employers accept the bid, then the respondents can perform the task to receive the bonus. Crucially, the respondents are informed that some participants will be selected and have their choices implemented.

Experimenter Demand Effect Although the experiment demand effects are usually moderate (de Quidt et al. (2018)), I take several measures to minimize these concerns. First of all,

[6]Women might anticipate that the verbal communication during the negotiation process with a male employer induce "toxic masculinity" (Huang and Low, 2020).

the prior beliefs' elicitation is incentivized, while other behavioral measures have a monetary implication for the participants to minimize experimenter demand effect. Moreover, the main outcome variable is a field outcome (a negotiation skill course) which makes the participant less prone to experimenter demand effect. In addition, the experiment is designed in such a way to preserve the respondents' anonymity, which also makes the respondents less prone to experimenter demand effect. Furthermore, I obfuscate the information provision by phrasing it as a feedback to the participants' previous answers. Finally, few days after Study 1 I re-contact 1,400 to join an obfuscated follow up to assess whether the change in beliefs persists over time, and whether experimenter demand effect was driving the results in Study 1.

2 Analysis

I will analyse the results using a combination of parametric tests, non-parametric tests and regression analysis. All tests are two-tailed, except when mentioned. All regressions will be clustered at the individual level throughout the analysis.

2.1 Main Analysis

I generate the following variables:

- Gap in Priors = Prior Beliefs – 7 (which is the value they need to guess) and one-sided t-test to assess whether the gap in priors is "Gap in Priors" is larger than 0.
- Generate a variable: Perceived gap = Prior Beliefs- 57 (which is the value of male applicants from the information treatment) and one sided t-test to assess whether "Perceived gap" is smaller 0.
- Generate variable: Tips (tips on how to negotiate is the most preferred info); Salary (average salary if the most preferred info).

Then, I study the different parts as follows:

- Demand for Information:

  - t- test to compare demand for information in the Control and Treatment group;
  - Linear regression of demand for the salary negotiation course on a dummy for the Treatment. We also include a battery of control variables (Age, Education, Ethnicity, log of middle point of the income range, Employment status, political views).

- Posterior Beliefs:
  - Independent t-test to compare Posterior Beliefs in the Control and Treatment group;
  - Pool observations and two-sided t-test to check whether Posterior Beliefs differ from 120 (the value the respondents have to guess);
  - Linear regression of Posterior Beliefs on a dummy for the Treatment. We also include a battery of control variables (Age, Education, Ethnicity, log of middle point of the income range, Employment status, political views);
  - Heterogeneous Treatment Effect of the changes in Posterior Beliefs the Confidence in Priors.

- Bid of the salary:
  - Independent t-test to compare bid salary in the follow up between the Control and Treatment group;
  - Linear regression of bid salary on a dummy for the Treatment. We also include a battery of control variables (Age, Education, Ethnicity, log of middle point of the income range, Employment status, political views).

2.2 Sample and restrictions

2.000 participants, who are U.S. women recruited on Prolific. The participants are evenly split between Control and Treatment. 1.400 participants will be contacted to join the follow up few days later.

I will not exclude any respondent who concludes the study. I will run the main analysis including and excluding the respondents in the 1st and 99th percentile of completion time.

2.3 Secondary analysis

2.3.1 Causal Forest

I repeat the analysis of the Demand for Information and the salary bid with Causal Forest following Wagner and Athey (2019).

2.3.2 Logit

Logit: I repeat the analysis on Demand for Information with a logit model.

2.3.3 2SLS

2SLS approach: I use the treatment allocation as an IV for the changes in Beliefs about the gender gap in salary negotiation (including all the usual controls). After that, I regress the information demand on the beliefs about the gender gap in salary negotiation (including all the controls).

I use treatment allocation as an IV for the demand for information about the salary course (including usual controls). After that, bid salary is regressed on the information about the salary negotiation (including all controls).

2.3.4 Heterogeneous Treatment Effects

All the Heterogeneous Treatment Effects are estimated with regressions with interaction term of the Treatment dummy with the variable of interest. In the regressions, the Treatment dummy and all the control variables will be included (Age, Education, Ethnicity, log of middle point of the income range, Employment status, political views). The same analysis applies for the the outcome variables of information demand and for the bid salary.

The variable of interests that we use to evaluate the heterogeneous Treatment effects (separately) are: Ethnicity (which takes value 1 if the respondent is White), Rep (which takes value 1 if the respondent is Republican), Child (which takes the value 1 if the respondent has children), Employed (which takes value 1 if the respondent is Employed full time), Education (which takes value 1 if the respondent has had "At least some college" or more years of

education), dummy for participants working on male dominated job sectors (CPS 2020), dummy for participants working on sectors where the negotiation skills required are above the median level of social skills (I use O*NET data for the classification of the jobs).

2.3.5 Mechanisms

I collect a set of post-treatment beliefs questions to assess mechanisms, including whether women believe to be less informed about salary negotiation, whether women think to not be informed about the mean salary in their job sector, beliefs on whether women negotiate along other dimensions of the job than wage, women are scared of a backlash from the employer when starting the negotiation and perceived benefits of the course. I will create a Z score of the answers to the previous questions using the Control group. I will regress each Z score index of the mechanism questions on the Treatment dummy and the usual controls.

2.3.6 Other

Manipulation checks in the follow up: I will create a Z score of the question "Do you find GGSN an important issue?" by using the answers from the control group. I will regress this score on a dummy for the treatment and the usual controls.

3 Instructions

3.1 Study 1

Thank you for participating in this survey. Completing it will take about 7 minutes.

This study is part of a scientific research project. More detailed instructions will be provided. This study has received ethical approval, therefore the information you will find in the survey is truthful.

By clicking NEXT you explicitly give us your consent that:

- We can collect your anonymous, non-sensitive personal data (like age, income, etc).
- We can use this personal data for scientific purposes.
- We can store your personal data on our safe-guarded university servers for up to 10 years.
- We can make anonymized data available to other researchers online.
- You are an American citizen.
- You are at least 18 years old.

We promise to protect your data according to the new General Data Protection Regulation (GDPR) laws.

In case you have doubts on the experiment, do not hesitate to contact us at **capozza@ese.eur.nl**

Figure 1: Introduction Study 1

On top of your fixed earnings, you will earn a bonus payment which will depend on your decisions in the study. The bonus payment ranges from 0.00 $ to 2.00 $.

Today, we ask you to complete some tasks.

Important! At the end of the survey, some participants will receive a bonus payment. The bonus payment depends on the answers you will provide in specific questions. The precise rules will be specified in later screens.

Every participant could be selected to get the bonus. It is therefore in your best interest to answer carefully.

Figure 2: Introduction Study 1

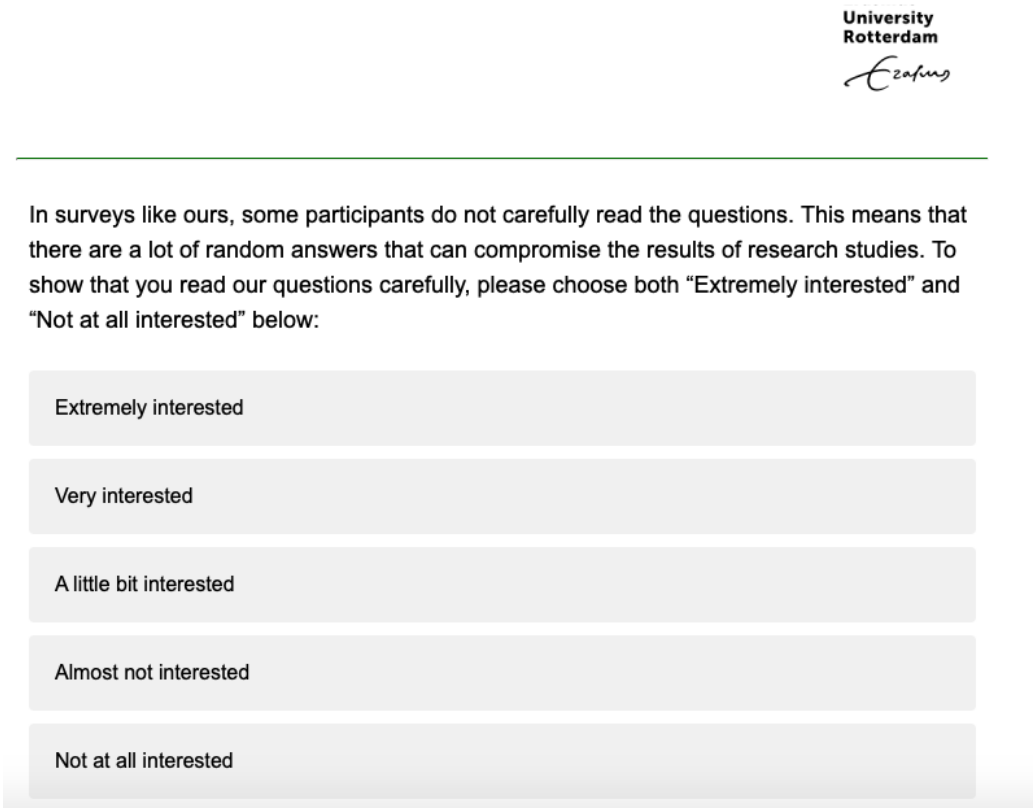


Figure 3: Attention Check Study 1

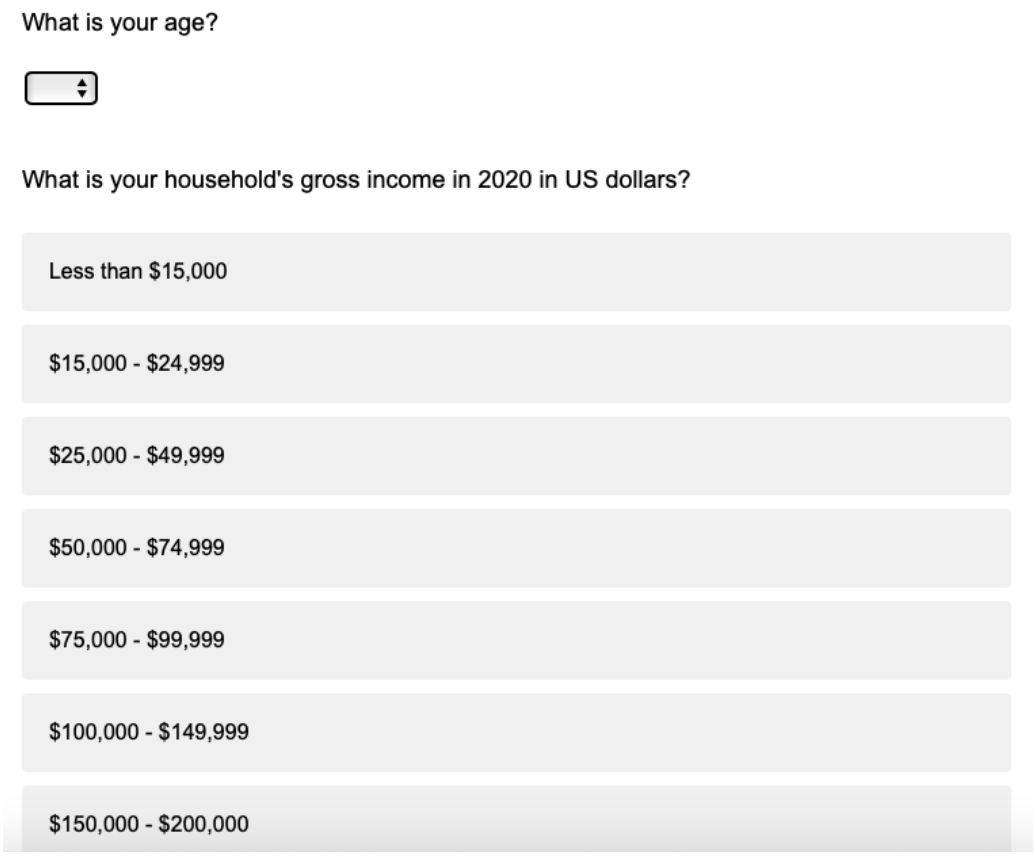


Figure 4: Demographics Part 1

Figure 5: Demographics Part 2

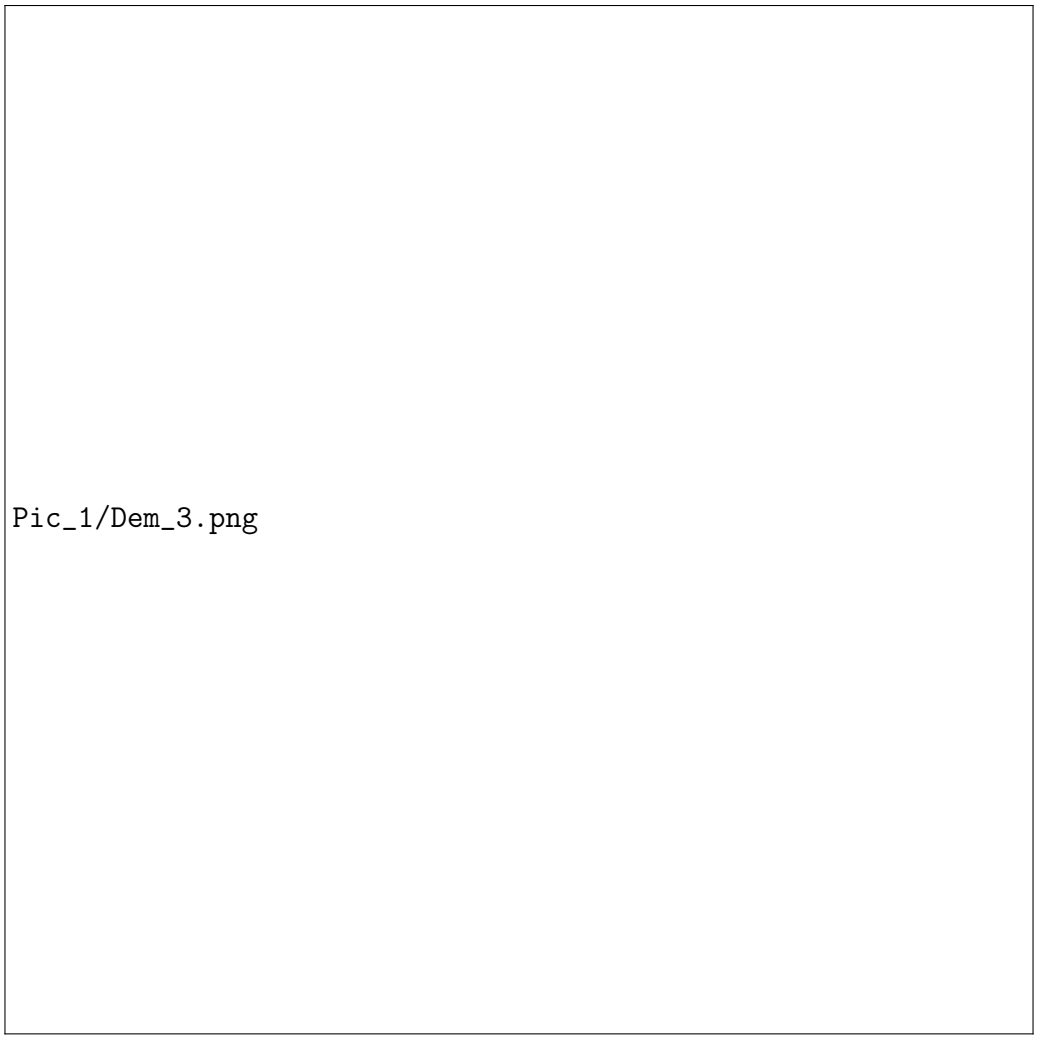


Figure 6: Demographics Part 3

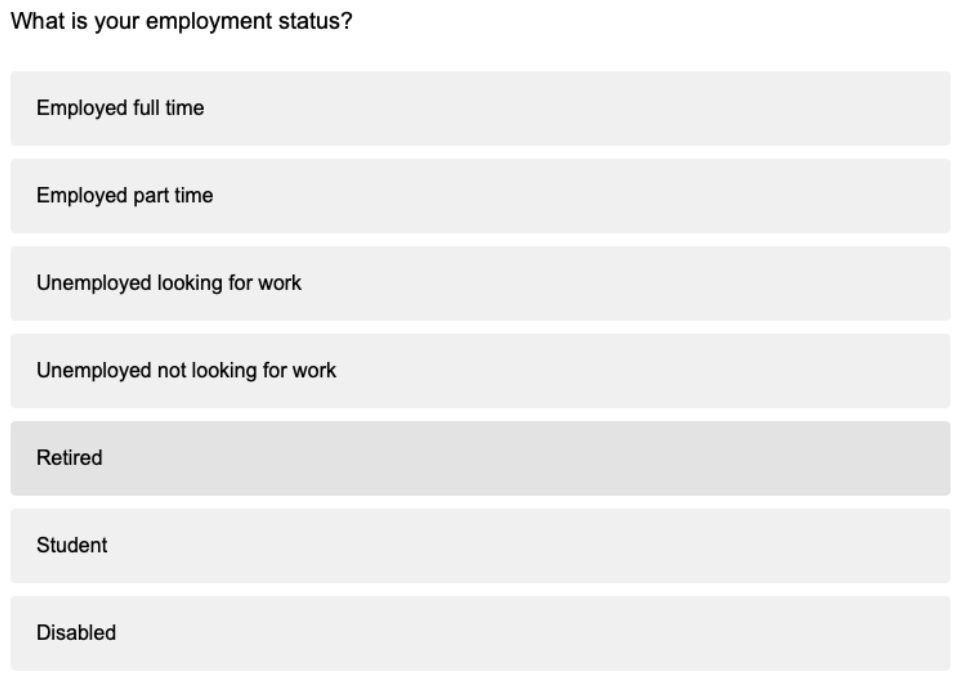


Figure 7: Demographics Part 4

Figure 8: Demographics Part 5

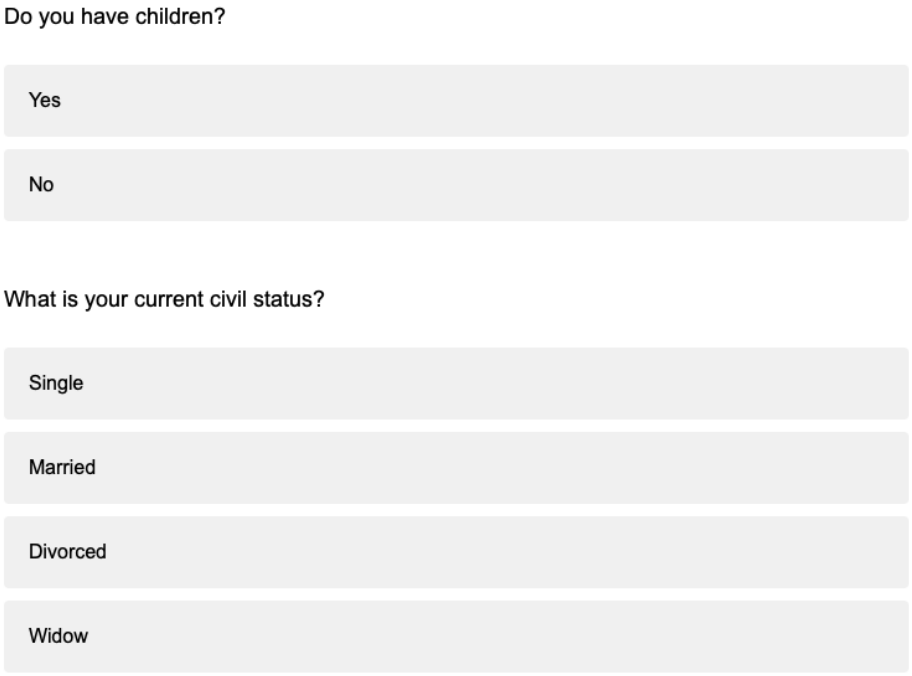


Figure 9: Demographics Part 6

Figure 10: Demographics Part 7

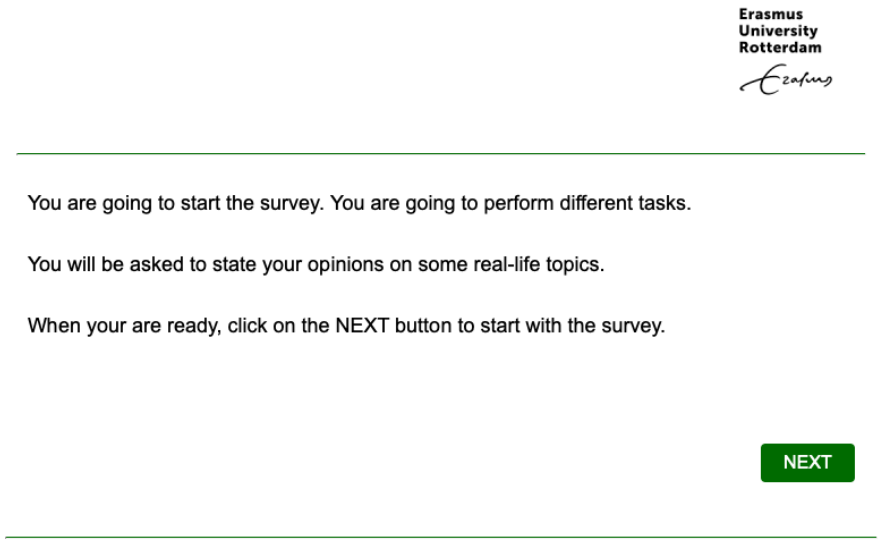


Figure 11: Intermezzo

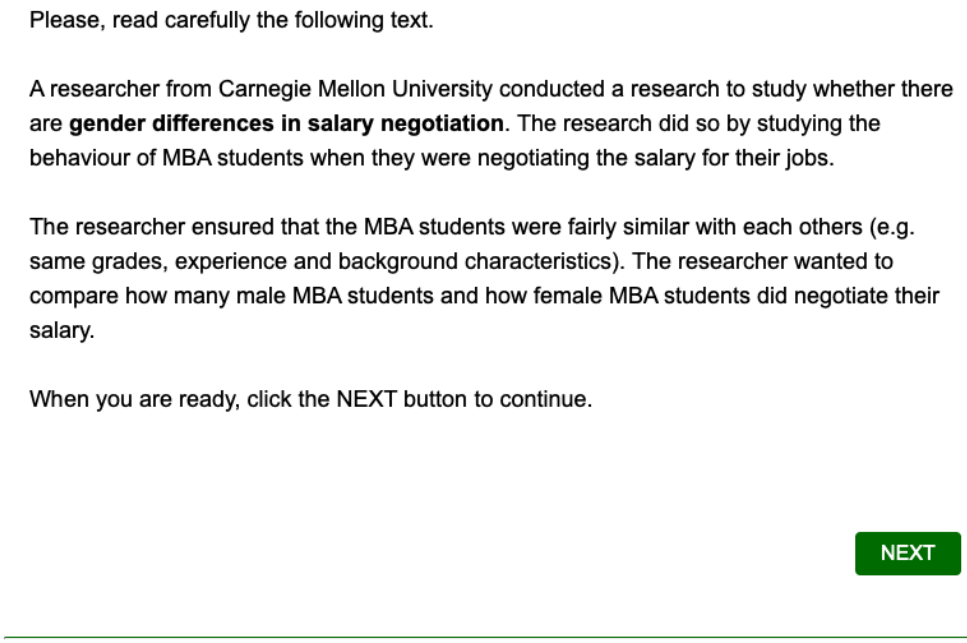


Figure 12: Instructions

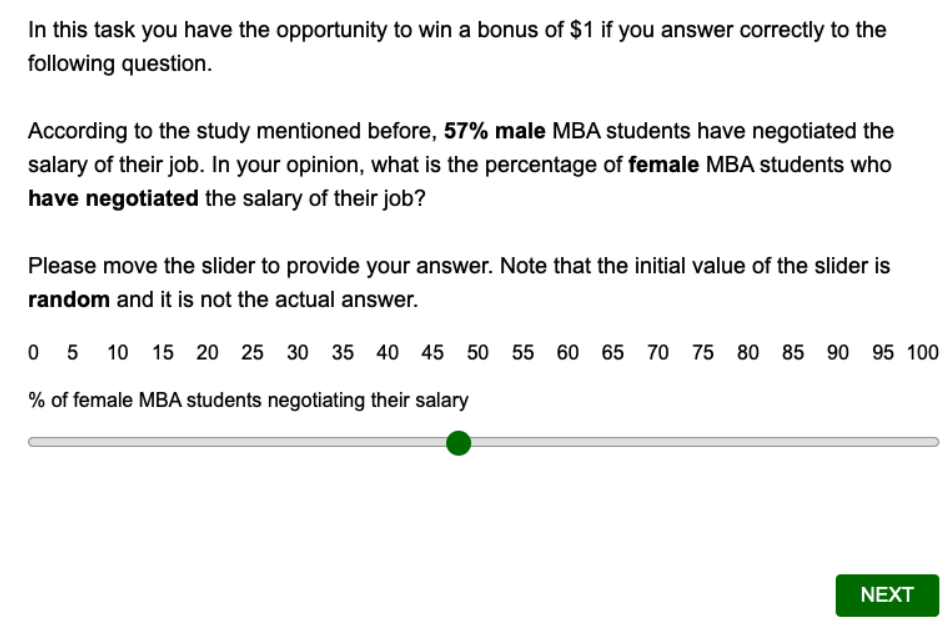


Figure 13: Prior Beliefs

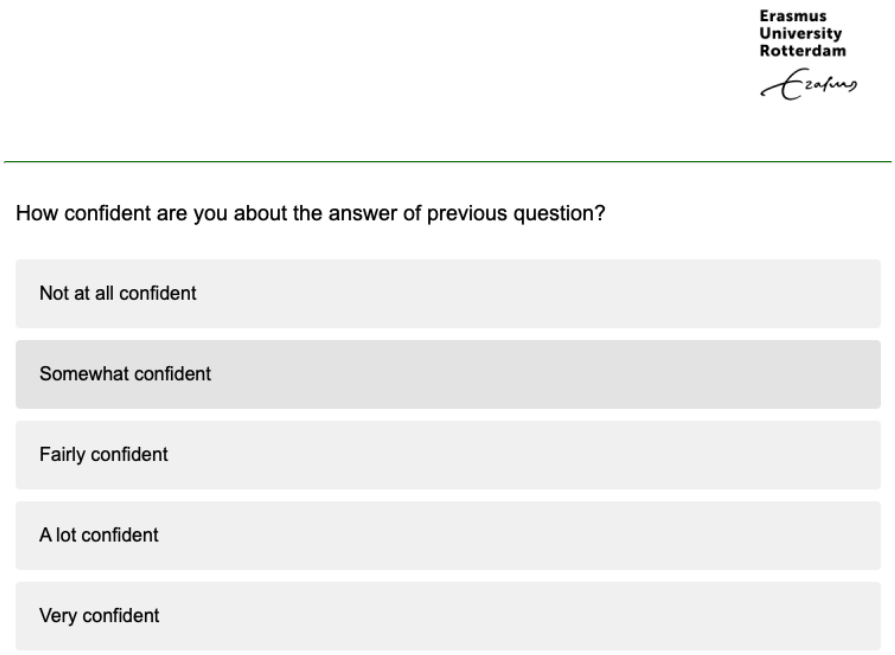
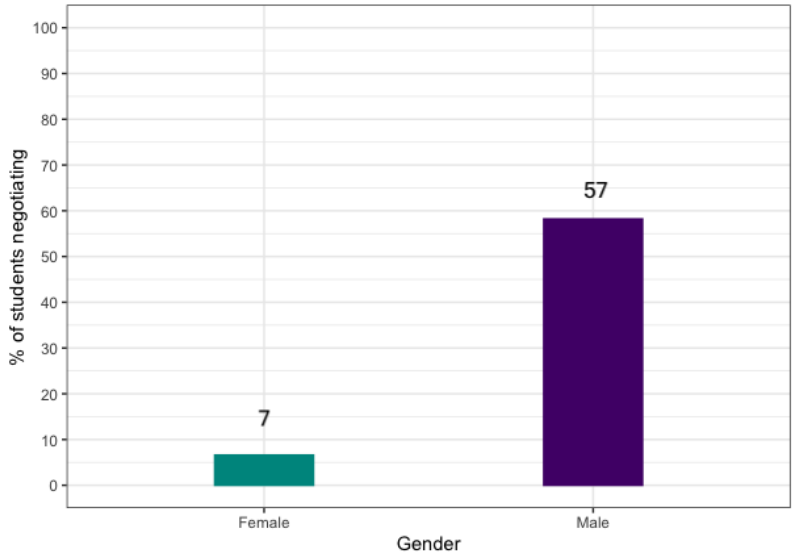


Figure 14: Confidence

You have guessed that % female MBA students have negotiated their salary. The correct answer is **7 % female MBA students** have negotiated the salary of their job.

In the graph below, the left column refers to the **percentage of female MBA students** who have negotiated the salary of their job. The right column refers to **percentage of male MBA students** who have negotiated their salary.



NEXT

Figure 15: Information Treatment

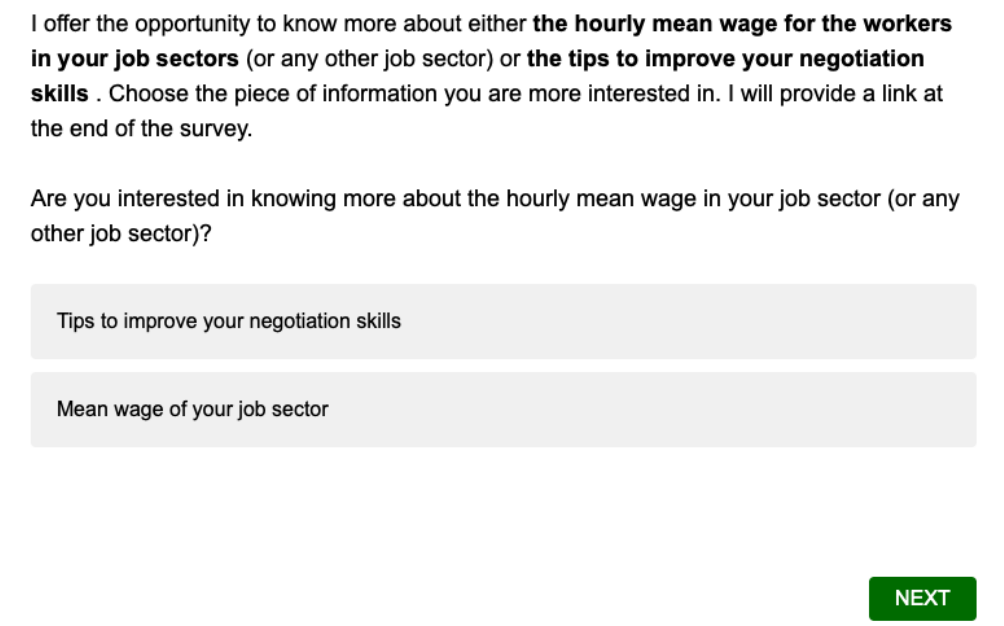


Figure 16: Information Demand

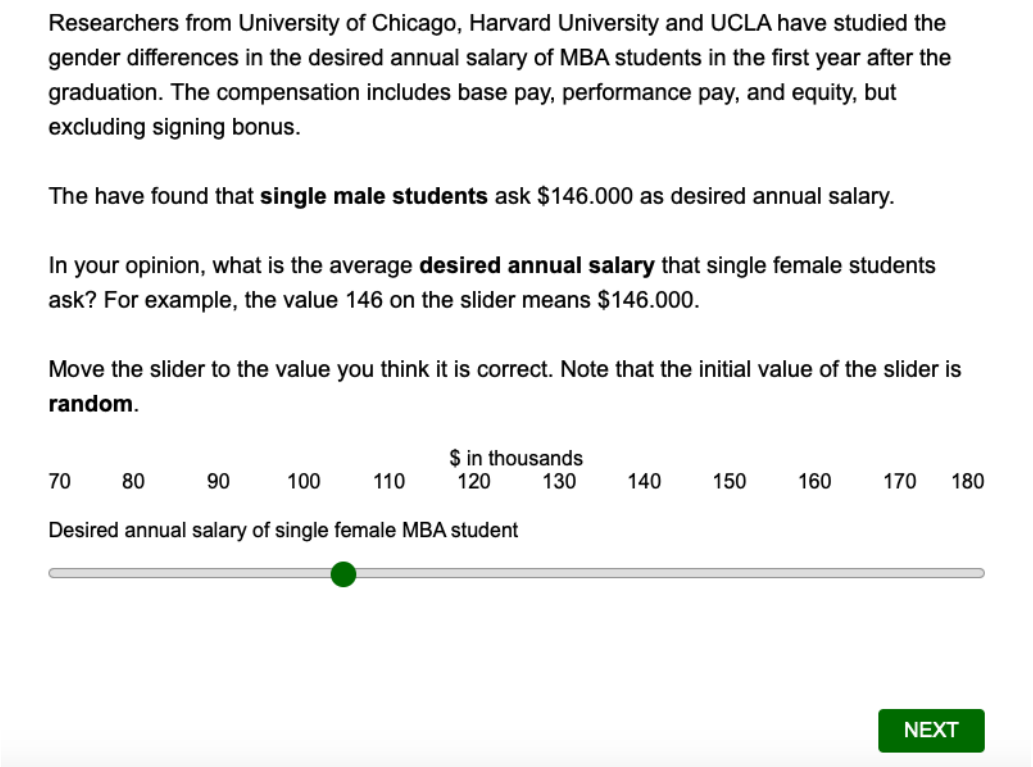


Figure 17: Posterior Beliefs

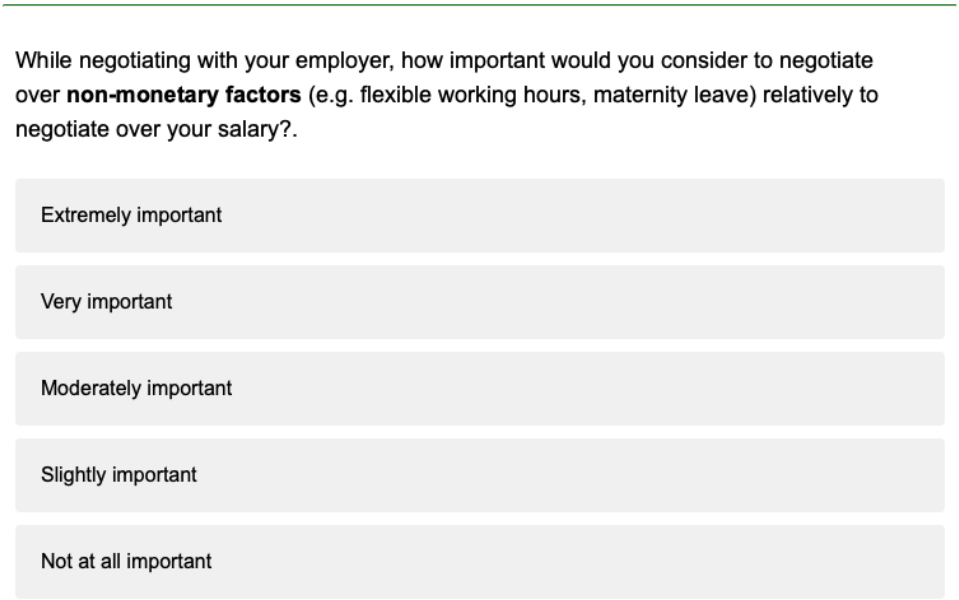


Figure 18: Mechanisms Part 1

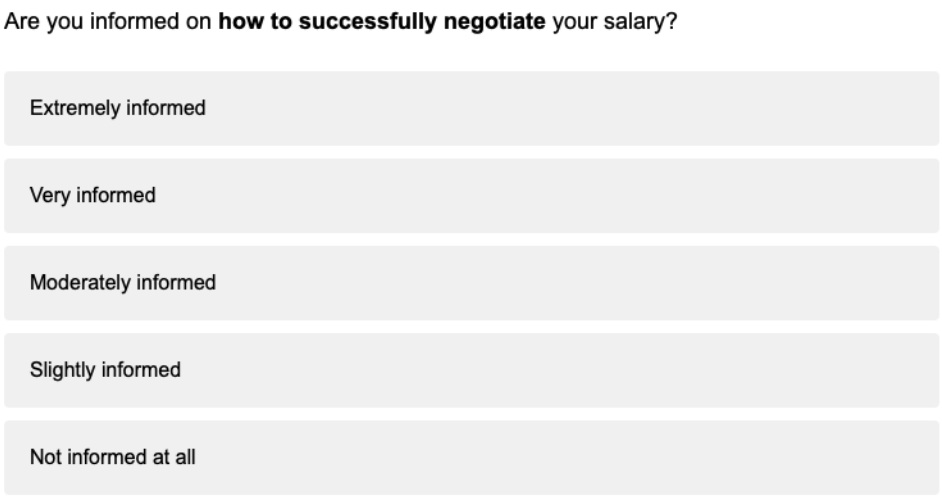


Figure 19: Mechanisms Part 2

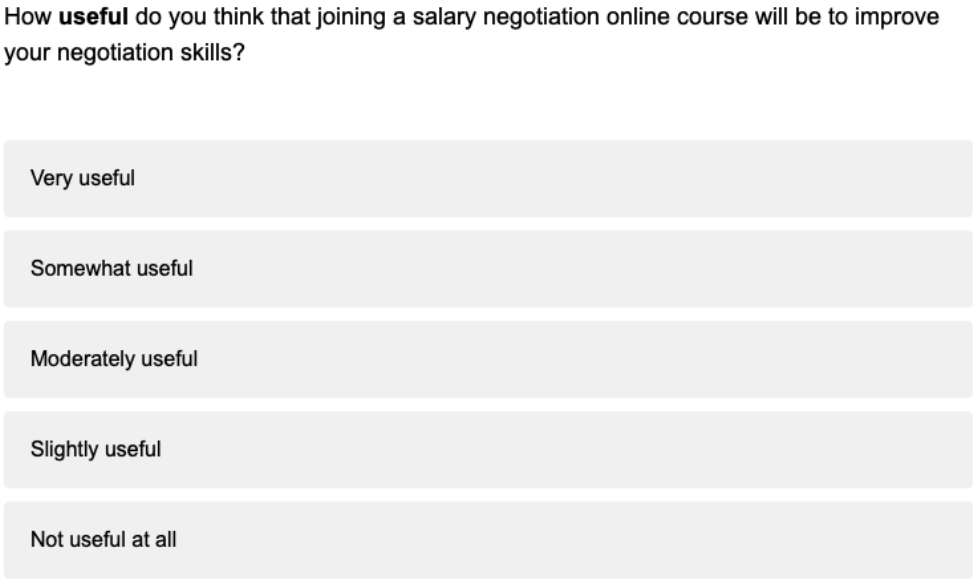


Figure 20: Mechanisms Part 3

Figure 21: Mechanisms Part 4

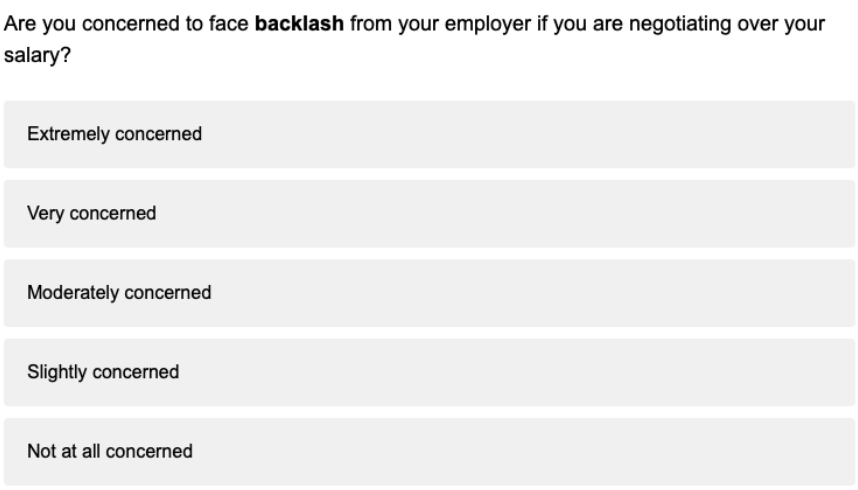


Figure 22: Mechanisms Part 5

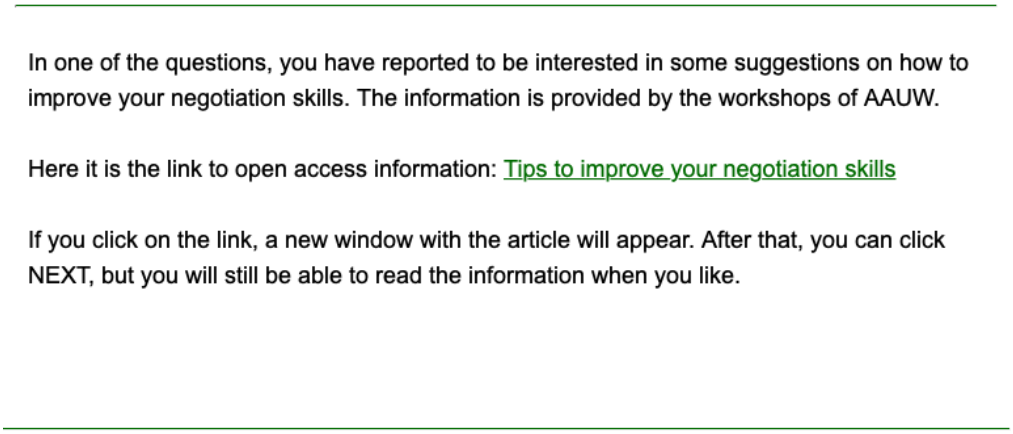


Figure 23: Screen with Salary Negotiation tips

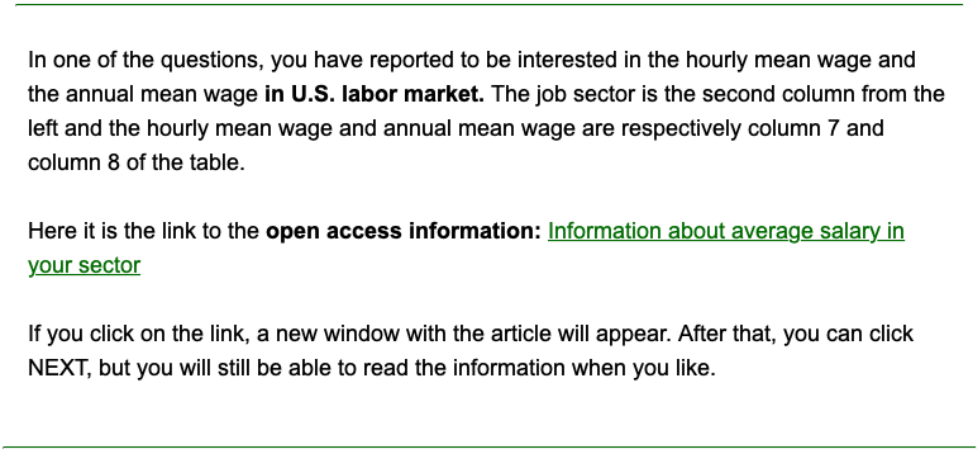


Figure 24: Screen with Mean Wage

3.2 Obfuscated Follow-up

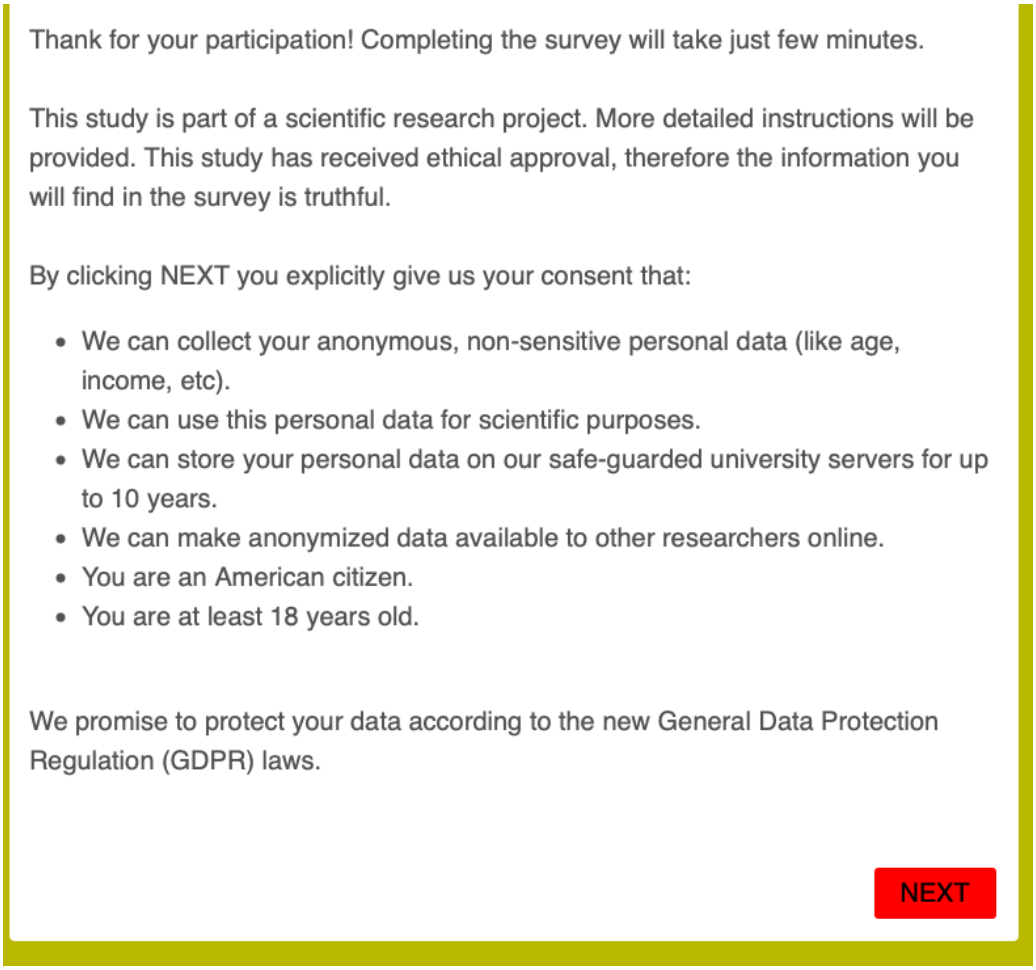


Figure 25: Introduction Follow-up

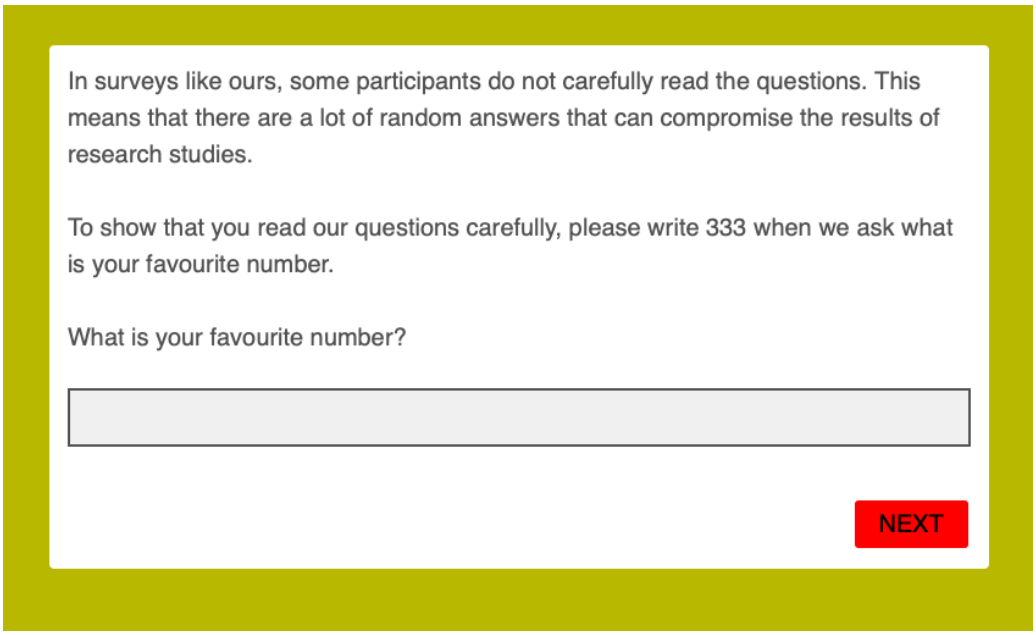


Figure 26: Attention Check Follow-up

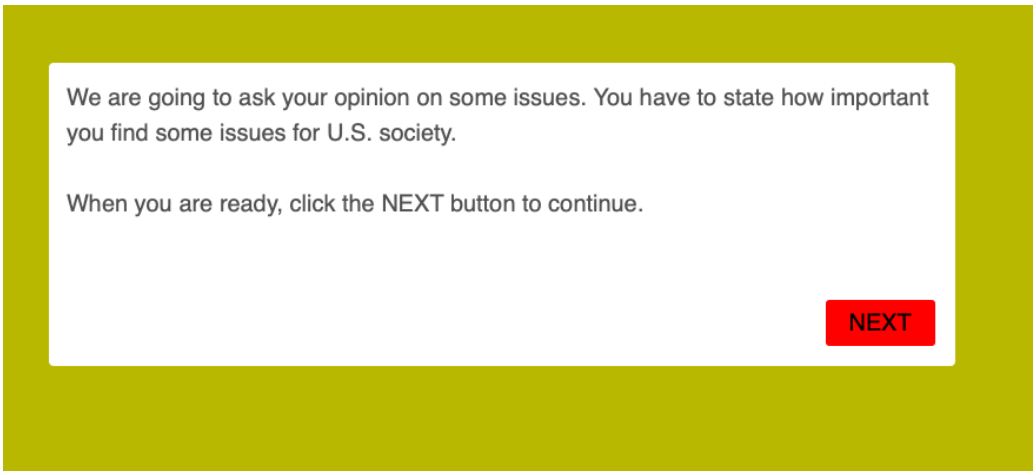


Figure 27: Intermezzo Follow-up

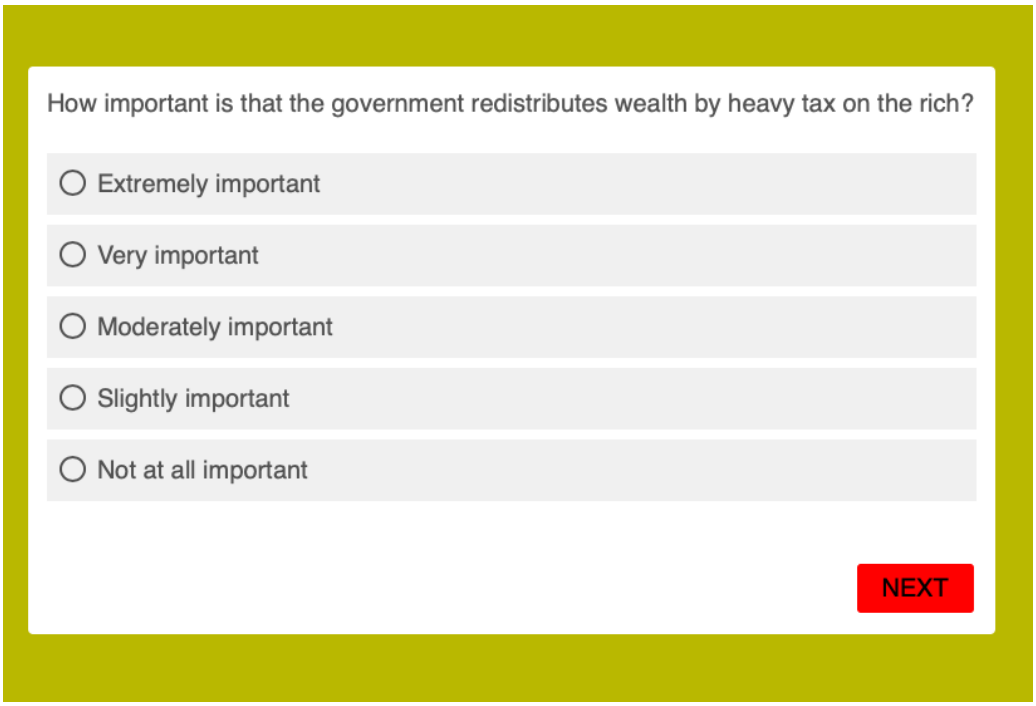


Figure 28: Obfuscated questions Part 1

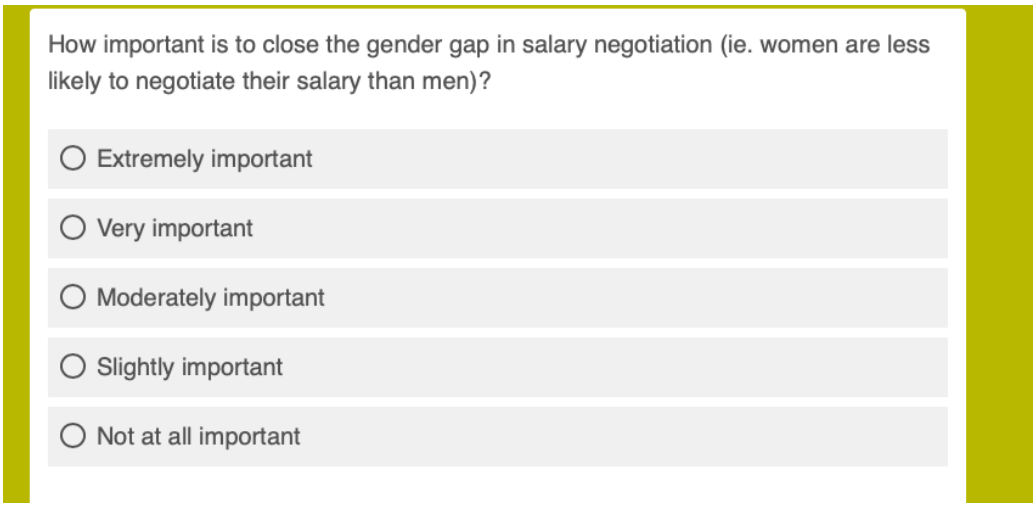


Figure 29: Manipulation check

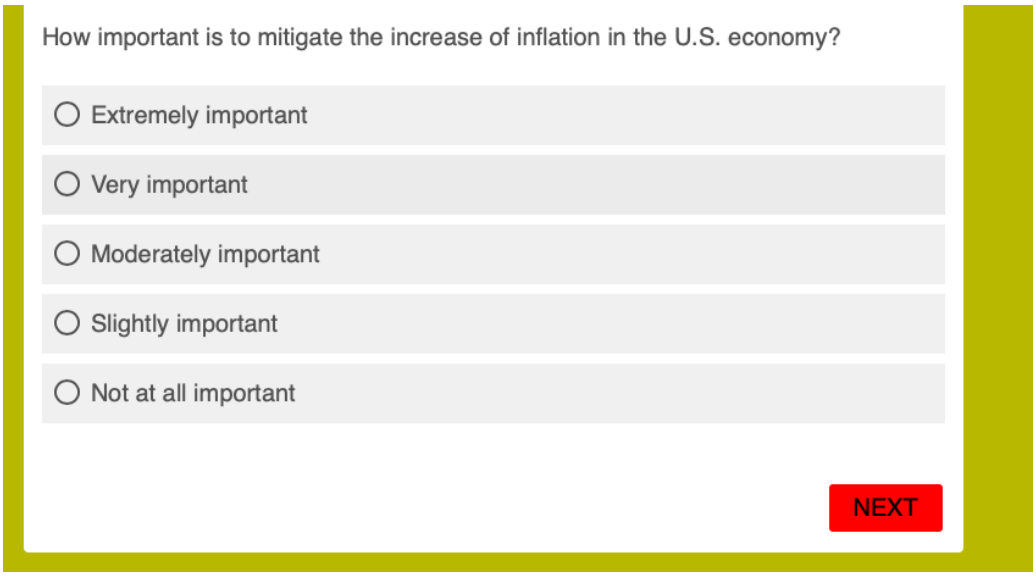


Figure 30: Obfuscated questions Part 2

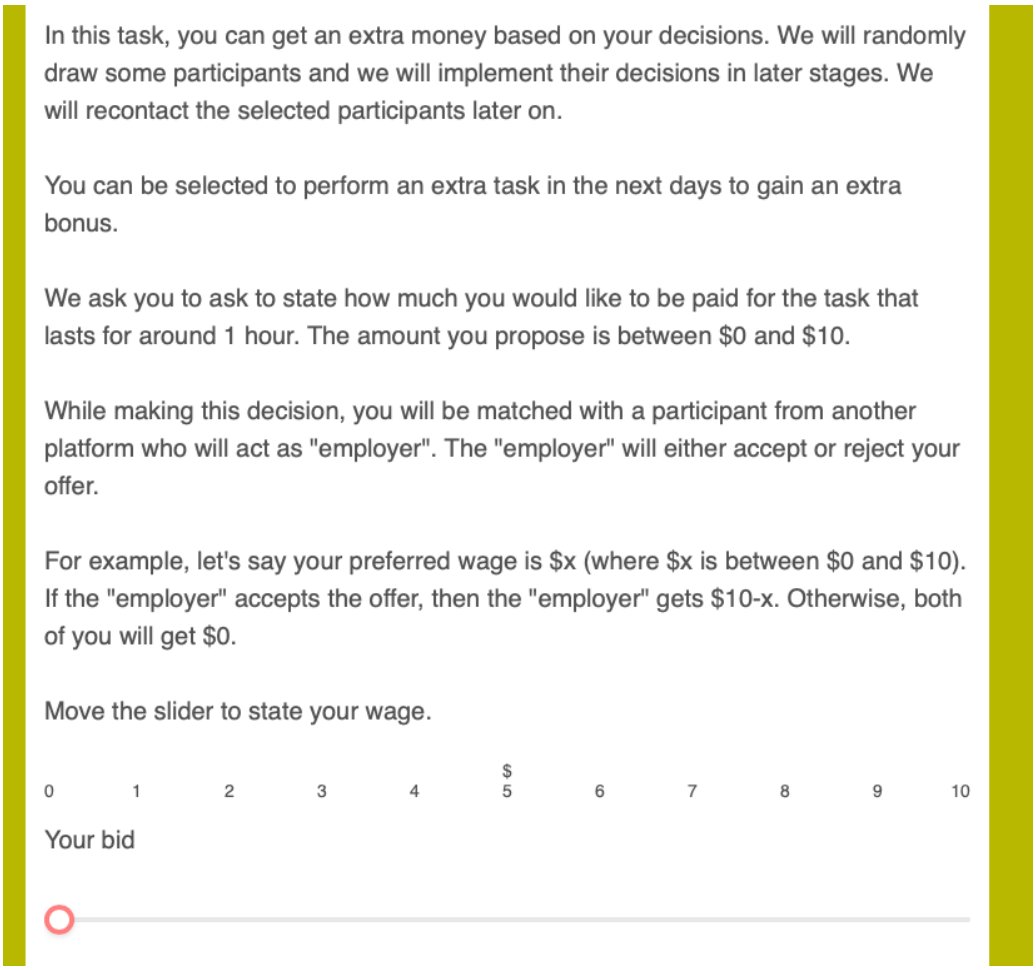


Figure 31: Negotiation Task

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