

Does sexual harassment affect labor market choices?

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Abstract

This paper uses a randomized survey experiment on Amazon mTurk to estimate the shift in labor supply due to the presence of a sexual harassment culture at the workplace. I see large negative shifts, with the magnitude of the shift being significantly larger for women—both statistically and economically. The paper also estimates one of the first measures of a Willingness to Accept (WTA) compensation for a workplace culture with sexual harassment. The WTA for the whole sample is an additional 27.9% of the base salary or \$13,950 for a base salary of \$50,000. The WTA of women is significantly higher (35.9%) than the WTA of men (20.1%).

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1 Introduction

Sexual harassment has, for decades, been an important part of the public discourse around gender equality at the workplace. However, it remains understudied in the field of economics. Sexual harassment can majorly affect people's experience in the workforce and it tends to disproportionately impacts women. In the past, one of the major problems with studying the impact of sexual harassment has been that it remains severely underreported. However, the cultural shift in connection to the #MeToo movement has led to many more individuals openly expressing their experiences. In the past couple of years, news outlets and journalists have regularly broken numerous stories that expose issues related to workplace sexual harassment, particularly at major companies such as Google, Uber, CBS, WeWork, Guess, and others. Therefore, with increased awareness and more information, we have a unique opportunity to assess the possible economic impact of these stories on companies as well as their employees, thereby allowing us to understand how sexual harassment affects the labor market.

This paper uses a randomized survey experiment to estimate the shift in the labor supply curve for a company if prospective employees are made aware of a history of sexual harassment at the company in question. It also estimates a Willingness to Accept (WTA) compensation to work at a company with a sexual harassment culture – indicating the extra cost a company will have to pay to hire the same talent, because of their history with sexual harassment. Lastly, the paper also adds to the literature by exploring heterogeneity not only by gender but also by age, education, political affiliation, and race given the well-documented links between these factors and attitudes towards sexual harassment (Ford and Donnis 1996, Foulis and McCable 1997, Clarke et. al 2018, McLaughlin 2012).

Survey evidence from past literature suggests that sexual harassment lowers job satisfaction by 30% for females and by 33% for males (Chan et al. 2008). McLaughlin et al. (2017) use longitudinal studies and interviews to estimate that female targets of sexual harassment reported significantly greater financial stress compared to nontargets. 35% of this effect could be explained by a job

change, as targets were 6.5 times as likely as nontargets to change jobs.

Some economists have attempted to model sexual harassment through the lens of compensating differentials (Basu 2003; Hersch 2011). Basu provides a theoretical analysis of how laws prohibiting sexual harassment can improve the welfare of all workers. Hersch (2011) comes closest to this paper in terms of estimating compensating differentials for sexual harassment. The empirical strategy, however, is vastly different. Hersch estimates that women employed in jobs with an average probability of sexual harassment are paid a compensating differential of 25 cents per hour relative to comparable women employed in jobs with no risk of sexual harassment. Men employed in jobs with an average probability of sexual harassment are paid a compensating differential of 50 cents per hour relative to comparable men employed in jobs with no risk of sexual harassment. This compensating differential can be interpreted as a WTA compensation measure.

The rest of the paper is organized as follows. Section 2 describes the experimental design used to estimate the labor supply shift and the WTA compensation. Section 3 describes the data broken down by treatment and control. Section 4 discusses the model and econometric strategy used, and Section 5 discusses the results. Finally, Section 6 presents the conclusions and implications of this paper.

2 Experimental Design

2.1 Experimental Survey Instrument

I conducted a randomized survey experiment to collect my data. The experiment was conducted throughout April 2019. The survey can be divided into three sections.

Section I consisted of basic demographic questions such as age, race, education level, political affiliation etc. This was collected in order to measure heterogeneity effects. Section II consisted of articles about two hypothetical tech companies —Company 1: Tech Co. and Company 2: Internet Co. The articles for Company 1: Tech Co. were articles about Microsoft and the articles for

Company 2: Internet Co. were articles about Google. These articles were taken from news websites and were anonymized. The articles were primarily about workplace culture and an analysis of the company's future. For this section, half of the respondents were randomly assigned to the treatment group and the other half were assigned to the control group. Compared to the control group, the treatment group saw two additional things: one, respondents were provided with an additional sentence about sexual harassment in the article on workplace culture, and two, respondents had to read an additional article about Company 2: Internet Co. This additional article was about the recent history of sexual harassment at Company 2-Internet Co. and how the company's management dealt with it. This article was taken from an actual New York Times debriefing and the company name, Google was replaced by Internet Co. Figure 1 shows the screenshot of the page of articles about Company 1: Tech Co. Note that this set of articles was the same for both the treatment and the control group. Figure 2 shows the screenshots of the page of articles about Company 2: Internet Co. that was seen by the control group and the treatment group. Note that the treatment group sees the additional article titled "Company protected male executives accused of sexual misconduct".

After reading the articles respondents moved on to Section III which consisted of questions to measure the labor supply shift as well to elicit the Willingness to Accept (WTA) compensation. First, respondents were asked to choose between the two companies when they were offered the same salary of \$50,000. If the respondents chose Company 1: Tech Co., they were asked to choose between the two companies when Company 2: Internet Co. offered a higher salary of \$55,000. If they still chose Tech Co., they were asked to make a choice if Internet Co.'s offer increased to \$60,000. These follow up questions were asked with \$5,000 increments in Company 2: Internet Co.'s salary offer, up to a salary level of \$70,000. I assumed that if a respondent chose Company 2: Internet Co at a lower salary level they will choose it at a higher salary level too. For example, if a respondent chose Company 2: Internet Co at a salary offer of \$55,000, I assumed they would choose Company 2: Internet Co at a salary offer of \$60,000 as well. Appendix Section 1 shows the complete survey for both the treatment and control groups.

Figure 1: Articles about Company 1 – Control and Treatment

Company 1: TechCo.

What does TechCo's culture look like?

TechCo has often been described by many employees as having a developer centric corporate culture where a lot time and money is spent each year on recruiting young university-trained students and keeping them in the company. Ten core values are instilled in every team member. Employee raises come from workers who pass skills tests and exhibit increased capability, not from office politics. Great benefits and a workplace that is fun and dedicated to making customers happy all fit in with TechCo.'s approach to company culture -- when you get the company culture right, great customer service and a great brand will happen on its own.

Tech Co's future? How bright is it?

Subscription revenue nearly guarantees TechCo's continued success. Revenue in the company's Productivity and Business group grew by 13% in Q4 2018 to \$9.7 billion in the year-ago period. TechCo's commercial products and cloud services posted a 10% gain, while business was up 8% in those areas on the consumer side. The company also grew its consumer subscription base to 31.4 million.

It's hard to downplay the significance of the subscription model. It essentially opens up the pool of customers to more people by having a lower entry price and then keeps those people generating new revenue each year. "Exceptional sales execution delivered double-digit revenue growth across all segments and strong progress against our strategic priorities, anchored by commercial cloud revenue growing 53% year over year to \$6.9 billion," said the CFO in the earnings release.

Figure 2: Articles about Company 2– Control vs Treatment

(a) Control

Company 2: Internet Co.

A peek into Internet Co.'s Culture

Internet Co. is a high-energy, fast-paced work environment and has a great and successful culture. One reason for that level of success is a team dedicated to culture. That team means that a positive culture is on the forefront, setting up fun lunches, events and programs. The company makes sure that there is always an upcoming event so the entire team has something to look forward to, and it uses methods to make sure the entire team works well together by insisting everyone helps keep break areas clean or sending random employees out to lunch together. Employees can't stop talking about how they love working with other smart people. Portions of the budget are dedicated to employee team building and culture promotion. Workers rave about being part of a company that is doing something that matters in the world.

Internet Co. is investing in the future

Internet Co. has a reputation for attracting and retaining many of the industry's best technical minds -- and compensating them extremely well, too. That reputation is well-deserved and backed by the company's massive (and growing) investments in research and development spending. In 2018, the company laid down \$21.4 billion in research and development -- a figure that was up significantly from \$16.6 billion in the prior year. According to the CFO, the company intends to keep growing its operating expenses in 2019, and that growth "will remain concentrated in R&D." Although rising operating expenses serve to ding near-term profitability, investors are encouraged that Internet Co. continues to invest heavily in its future. The company's current success is undoubtedly the product of investment decisions that management made years ago, and my expectation is that its investments today will ensure that it builds on that success in the coming years.

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Company protected male executives accused of sexual misconduct

When a top engineer, left Internet Co. in 2014, he was given a \$90 million exit package and an investment in his next venture. Left unsaid was that he had been accused of sexual misconduct by a fellow employee. That was one of several instances where Internet Co. protected male executives accused of sexual misconduct. The company has had to fire 50 employees in the past two years due to sexual harassment charges. Another executive accused of similar behavior remains in a highly compensated post. "When they cover up harassment and pass the trash, it contributes to an environment where people don't feel safe reporting misconduct," said an engineer and an activist on workplace issues. "They suspect that nothing will happen or, worse, that the men will be paid and the women will be pushed aside."

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2.2 Data Collection

The survey was conducted using Amazon’s Mechanical Turk (mTurk) platform. mTurk is a rapidly growing online platform that can be used to carry out social and survey experiments (Kuziemko, Norton, Saez, Stantcheva, 2015, Horton, Rand, and Zeckhauser 2011 and Paolacci, Chandler, and Ipeirotis 2010). The survey was posted on mTurk with a description stating that the survey paid \$1 for approximately 5 minutes, i.e., a \$12 hourly wage. Respondents were allowed to take up to 15 minutes to answer all questions. As a comparison, the average effective wage on mTurk according to Amazon is around \$4.80 per hour and most tasks on mTurk are short (less than one hour).

Several steps were taken to ensure the validity of the results. mTurk allows you to specify different qualifications to restrict responses according to your needs. I required the respondents to be US residents and have the mTurk Masters Qualification to maintain the quality of the data. The mTurk Masters Qualification is granted by Amazon to workers who have consistently demonstrated a high degree of success as determined by Requester approval rates and other related factors. Respondents were told that the payment would be contingent on completing the survey, and a code was visible only at completion. Finally, to prevent respondents from skipping mindlessly through the pages, I added attention checks throughout the survey.

3 Data

Table 1 presents the descriptive statistics for the 458 respondents with complete information on the relevant variables divided by treatment and control. 50.8% of the respondents were randomly assigned to the treatment group while 49.8% were in the control group. Within the treatment group, 45% of respondents are women while 55% of respondents are men. In the control group, 49% of respondents are women while 51% of respondents are men. The overall sample age ranges from 22 years to 72 years. The average age of the whole sample is approximately 39 years. Women are 41 years on average and men are 37 years old on average. This is similar to the US labor force since the latest data from the Bureau of Labor Statistics (BLS) states that the median age of the

labor force is 42 (2016).

In terms of race, 80% of the total sample is white. There are 44 Asian respondents and 36 African American respondents, making up about 18% of the sample together. The last 2% of the sample is American Indian or Alaska Native, Native Hawaiian or Pacific Islander and Other. This race composition again is broadly similar to the overall US labor force according to the latest data from the Bureau of Labor Statistics (2017). By race, Whites made up the majority of the labor force (78 percent). Blacks and Asians constituted an additional 13 percent and 6 percent respectively. American Indians and Alaska Natives made up 1 percent of the labor force, while Native Hawaiians and Other Pacific Islanders constituted less than 1 percent. People of Two or More Races made up 2 percent of the labor force.

In terms of education, 52% of the sample had a bachelor's degree or more, while 48% of the respondents had less than a bachelor's degree. According to BLS data (2017), 39% of the US labor force had a bachelor's degree or more, while the rest had less than a bachelor's degree. Seventy-five percent of the respondents are working full time and about 18% are working part-time. In terms of political preferences, 48% of the respondents identified themselves as Democrats, 22% identified as Republicans, 27% identified as Independents and 3% as other.

Figure 3 shows the labor supply curve of respondents in treatment vs control for Company 2—the company which has a sexual harassment culture in the treatment group. The x-axis shows the percentage of respondents who choose to work for Company 2. The y-axis shows the different salary levels in thousand US dollars. We see a clear leftward shift of the labor supply curve in the treatment group for all categories of respondents. The magnitude of the shift, however, varies across different race and gender combinations. The shift for women is visibly larger than the shift for men, and the shift for whites is larger than the shift for non-whites. Note that there are only 46 non-white women and 46 non-white men in the sample. In the Results section, I estimate the average shifts in different categories and test for statistical significance. I also use an interaction model to test the difference in coefficients for different categories statistically.

Figure 3: Labor Supply Curve for Company 2 by Race and Gender

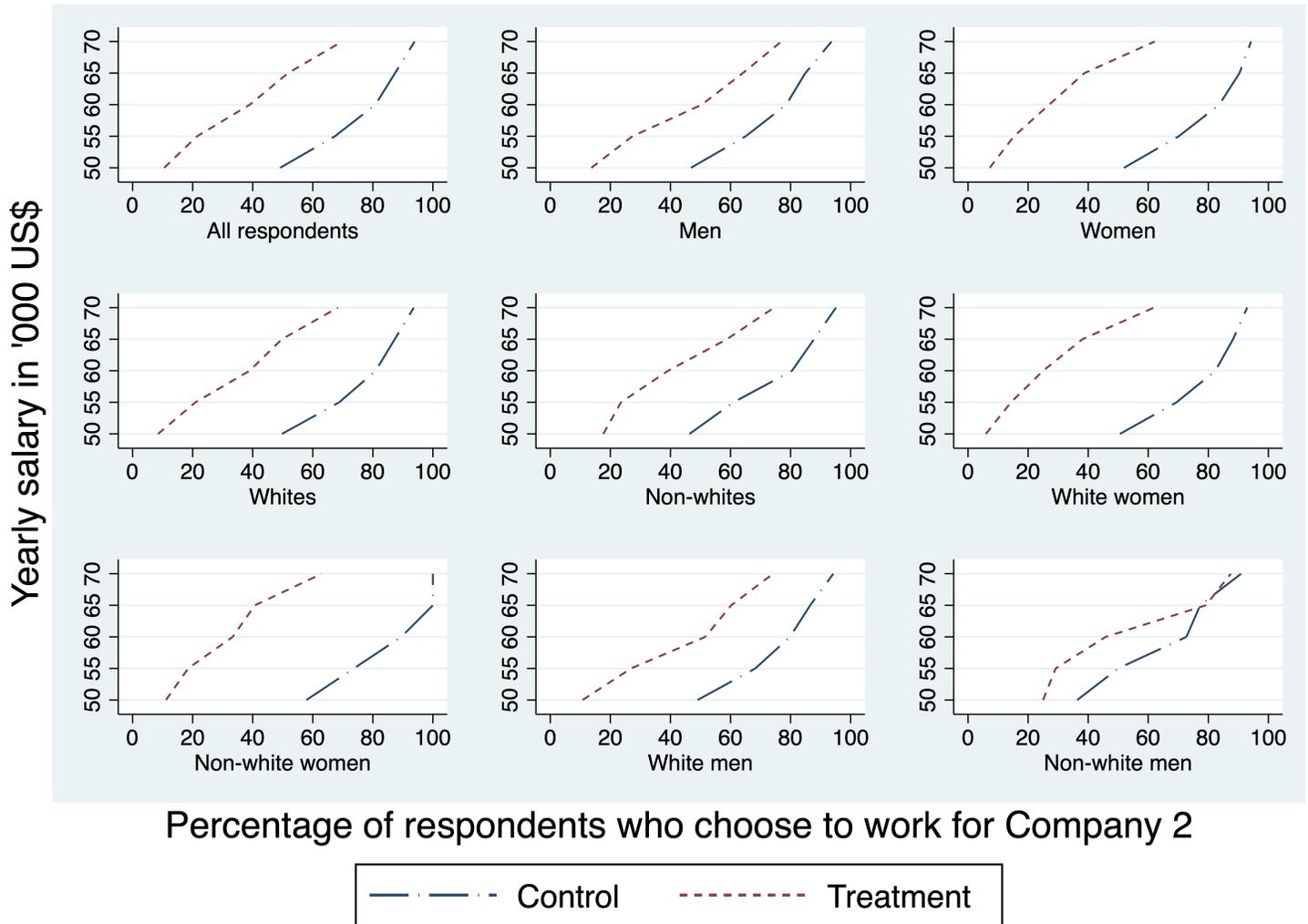


Table 1: Characteristics Across Groups

	Overall		Women		Men	
	(1) Treat	(2) Control	(3) Treat	(4) Control	(5) Treat	(6) Control
Age	39.05	39.36	40.95	41.36	37.48	37.45
<i>Gender</i>						
Women	0.45	0.49	1.00	1.00	0.00	0.00
Men	0.55	0.51	0.00	0.00	1.00	1.00
<i>Race</i>						
American Indian or Alaska Native	0.01	0.00	0.00	0.00	0.02	0.00
Asian	0.09	0.10	0.06	0.08	0.12	0.12
Black or African American	0.07	0.10	0.12	0.14	0.03	0.07
Native Hawaiian or Pacific Islander	0.00	0.00	0.00	0.00	0.01	0.00
Other	0.00	0.02	0.01	0.03	0.00	0.02
White	0.82	0.78	0.82	0.76	0.83	0.79
<i>Education</i>						
Associate degree in college (2-year)	0.17	0.14	0.23	0.14	0.11	0.13
Bachelor's degree in college (4-year)	0.38	0.47	0.31	0.49	0.44	0.46
Doctoral degree	0.01	0.02	0.01	0.03	0.01	0.01
High school graduate	0.10	0.12	0.09	0.10	0.12	0.14
Less than high school degree	0.00	0.01	0.00	0.00	0.00	0.02
Master's degree	0.10	0.04	0.09	0.05	0.11	0.04
Professional degree (JD, MD)	0.01	0.02	0.01	0.02	0.01	0.03
Some college but no degree	0.23	0.18	0.27	0.18	0.20	0.18
<i>Employment</i>						
Disabled, not able to work	0.02	0.01	0.01	0.02	0.02	0.00
Employed, working 1-39 hours per week	0.15	0.21	0.21	0.28	0.10	0.14
Employed, working 40 or more hours per week	0.77	0.71	0.69	0.63	0.83	0.79
Not employed, NOT looking for work	0.03	0.04	0.05	0.06	0.01	0.01
Not employed, looking for work	0.02	0.02	0.02	0.00	0.02	0.03
Retired	0.02	0.02	0.02	0.01	0.02	0.03
<i>Politics</i>						
Democrat	0.49	0.47	0.51	0.50	0.47	0.44
Independent	0.26	0.29	0.21	0.26	0.30	0.31
Other	0.03	0.03	0.01	0.05	0.04	0.02
Republican	0.23	0.21	0.27	0.20	0.19	0.23
Observations	230	228	104	111	126	117

4 Model and Econometric Strategy

4.1 Measuring the shift in labor supply

To analyze the labor supply shift, I first convert the raw data into long form, where each row represents the choice made by individual i at salary level j . The raw data shows us that while there is a general leftward shift in the labor supply, the magnitude of that shift might vary with salary levels. Here I analyze two types of labor supply shifts.

Model 1:

$$C_{ij} = \beta_0 + \beta_1 T_i + \varepsilon_{ij} \quad (1)$$

Here, C_{ij} is an indicator equal to 1 if individual i chose Company 2 at salary level j . T_i is an indicator equal to 1 if individual i was in the treatment group and read the articles talking about the sexual harassment culture at Company 2. β_1 is an estimate of the average shift in labor supply across all salary levels due to the information treatment of Company 2 having a workplace culture of sexual harassment. This is useful as it helps us understand the overall shift overall decrease/increase in labor supply for the company.

Model 2:

$$C_{ij} = \beta'_0 + \beta'_1 T_i + \beta'_2 S_j + \beta'_3 (T_i * S_j) + \varepsilon'_{ij} \quad (2)$$

C_{ij} and T_i are the same as above. S_j is the difference in salary level j and the base salary of \$50,000, divided by 5000. For example, if salary level j is equal to \$65,000 then S_j is equal to 3 ($[65,000 - 50,000]/5000$). Here, β'_1 is an estimate of the labor supply shift due to treatment at the base salary level of \$50,000. Note that at this level, both companies offer the same salary. β'_2 measures the increase in labor supply for an increase of \$5000 in the salary offered by Company 2. β'_3 is the coefficient on the interaction term between treatment and salary level, giving us an estimate of the change in the treatment effect as the salary offered by Company 2 increases. For instance, if β'_3 is negative it would mean that as the salary offer increases, the leftward labor supply curve shift due to a sexual harassment culture at the workplace is greater.

I measure heterogeneity between different pairs of groups in the sample by adding interacting each term above with an indicator, G equal to 1 if individual i belong to Group 1. The modified Model 1 and Model 2 for this measuring heterogeneity are as follows:

Model 3:

$$C_{ij} = \beta_0 + \beta_1 T_i + \beta_2 (T_i * G_1) + \varepsilon_{ij} \quad (3)$$

Model 4:

$$C_{ij} = \beta'_0 + \beta'_1 T_i + \beta'_2 S_j + \beta'_3 (T_i * S_j) + \beta'_4 (T_i * G_1) + \beta'_5 (S_j * G_1) + \beta'_6 (T_i * S_j * G_1) + \varepsilon'_{ij} \quad (4)$$

4.2 Measuring the Willingness To Accept (WTA) compensation for a workplace culture of sexual harassment

The WTA represents how much additional compensation an individual is willing to accept in order to work at a company with a culture of sexual harassment. This trade-off can be portrayed as:

$$WTA = \frac{\Delta Salary}{\Delta SH} \quad (5)$$

where $\Delta Salary$ is the increase in individual i 's salary for an increase of ΔSH in the average likelihood of sexual harassment at the workplace. Empirically, I estimate the WTA in a logit framework (McFadden 1974). I use the framework provided by Leon and Miguel (2017) to estimate the Value of a Statistical Life and translate it to estimate the WTA. The utility of choosing Company 2 for individual i at salary level j is:

$$U_{ij} = \beta_0 + \beta_1 T_i + \beta_2 S_j + \varepsilon_{ij} \quad (6)$$

The term S_j is the difference in salary level j offered by Company 2 and the base salary of \$50,000, divided by 5000. β_1 represents the marginal change in the likelihood of choosing Company 2 due to the existence of sexual harassment at the company, and intuitively this corresponds to the utility

cost of having a workplace culture of sexual harassment. β_2 captures how the likelihood of choosing a company changes with salary level and corresponds to the monetary value of a unit of utility. The negative of the ratio of these coefficients multiplied by 5000, captures the trade-off between exposure to sexual harassment and compensation, which can be interpreted as the WTA compensation for a workplace culture of sexual harassment. We then divide by 50,000 and multiply by 100 to get the WTA as a percent measure of the base salary.

$$WTA(\%) = 5000 - \frac{\beta_1}{\beta_2} * \frac{100}{50000} \quad (7)$$

5 Results

5.1 Shift in Labor Supply

Table 2 shows the labor supply shift estimates for all respondents, men and women for both Model 1 and Model 2. The average decrease due to a workplace culture of sexual harassment across all salary levels for all respondents is 37.2% (Column 1). When we control for salary, a sexual harassment culture reduces labor supply by 45.1% at the base salary level of \$50,000 (Column 2). As we would expect, when the salary offered increases there is an increase in labor supply. In my sample, for an increase of \$5,000 in the salary offered, labor supply increases by 11% for the control group (Column 2). These results are statistically significant at the 1% level. For the treatment group, a \$5,000 increase in the salary offered increases labor supply by 15%, compared to 11% for the control group. This is statistically significant at the 1% level as well. Therefore, for a higher salary offer, the treatment effect is less negative.

Table 2 also shows the estimates broken down by gender. We see that the average decrease for women across all salary levels is 48% whereas the decrease for men is just 27% (Column 3 and 5). Table 3 Column 1 uses Model 3 to check for significance in the difference between these two estimates. We see that the difference between the average treatment effect on women and men is 20.7 percentage points, significant at the 1% level.

The shift at the base salary is 53.7% for women and 37.3% for men (Table 2, Column 4 and Column 6). Both of these estimates are significant at the 1% level and the difference between the coefficients is significant at the 1% level as well (Table 3, Column 2). The effect of salary increase on labor supply is almost equal for both women and men and the difference between them is not statistically significant. The coefficient on the interaction of treatment and salary level is 5% for men and about 2 percentage points smaller for women (Table 2, Column 4 & Column 6). However, the difference between these two coefficients is not statistically significant (Table 3, Column 2).

5.2 WTA Estimates

I regress the indicator that respondent chose Company 2 on the treatment dummy and the salary increase compared to the base salary level divided by 5000. Each observation represents an individual's choice at a given salary level. As seen in the labor supply shift estimates, I find that passengers prefer Company 2 less when they see that it has a workplace culture of sexual harassment with lower accident risk and more when the company offers a higher salary. Following equation (5), I use the coefficient estimates on the treatment and salary terms to estimate that the average WTA compensation for a workplace culture of sexual harassment is 27.9% of the base salary, and this is significantly different than zero at the 1% level. In dollar terms, this is \$13,950 for a base salary of \$50,000. This implies that if Company 2 has a sexual harassment culture and prospective employees know about it, it will have to pay them a 27.9% higher salary on average than it would have if there was no sexual harassment culture.

Table 4 – Column (2) and Column (3) results show that women are more sensitive to a harassment workplace than men, but react similarly to salary increases. The WTA for women is 35.9% and is significantly higher than the 20.1% WTA of men. These measures are significant at the 1% level. In dollar terms, for a base salary of \$50,000, the WTA compensation for women is \$17,950, while for men it is \$10,050. The 95% confidence intervals of the WTA estimates for women and men are non-overlapping. Another interpretation of these results is that women are willing to give up a higher amount of their salary to avoid working at a company with a sexual harassment culture.

Table 2: Effect of a sexual harassment workplace culture on Labor Supply for Company 2

	All		Women		Men	
	(1)	(2)	(3)	(4)	(5)	(6)
Treatment	-0.372*** (0.0192)	-0.451*** (0.0304)	-0.480*** (0.0267)	-0.537*** (0.0427)	-0.273*** (0.0270)	-0.373*** (0.0424)
Salary Increase (per 5000 dollars)		0.110*** (0.00876)		0.105*** (0.0125)		0.113*** (0.0120)
Salary Increase * Treatment		0.0391*** (0.0124)		0.0285 (0.0174)		0.0498*** (0.0173)
Control: Company 2 take up at base salary	0.49	0.49	0.52	0.52	0.47	0.47
Number of respondents	458	458	215	215	243	243

Notes: Standard errors in paranthesis. *** denotes significance at 1%. The dependent variable is an indicator equal to 1 if respondent chooses Company 2: Internet Co. at a given salary level

Table 3: Labor Supply effects including interaction terms

	All respondents	
	(1)	(2)
Treatment	-0.273*** (0.0261)	-0.373*** (0.0413)
Women	0.0427 (0.0270)	0.0600 (0.0427)
Treatment * Women	-0.207*** (0.0381)	-0.164*** (0.0603)
Salary Increase (per 5000 dollars)		0.113*** (0.0117)
Salary Increase * Treatment		0.0498*** (0.0169)
Salary Increase * Women		-0.00868 (0.0174)
Salary Increase * Treatment * Women		-0.0212 (0.0246)
Control: Company 2 take up at base salary	0.49	0.49
Number of respondents	458	458

Notes: Standard errors in paranthesis. *** denotes significance at 1%. The dependent variable is an indicator equal to 1 if respondent chooses Company 2: Internet Co. at a given salary level.

Table 4: WTA compensation for a Workplace culture of sexual harassment

	All (1)	Women (2)	Men (3)
Treatment	-1.956*** (0.107)	-2.587*** (0.171)	-1.443*** (0.140)
Salary Increase (per 5000 dollars)	0.701*** (0.0394)	0.722*** (0.0613)	0.715*** (0.0531)
Observations	2290	1075	1215
Number of respondents	458	215	243
WTA (%)	27.89 (1.73)	35.86 (2.83)	20.17 (2.24)
2.5 percentile	24.50	30.31	15.79
97.5 percentile	31.29	41.40	24.55

Notes: The dependent variable is an indicator equal to 1 if respondent chooses Company 2: Internet Co. at a given salary level. The WTA is the negative ratio of the coefficient estimates on the treatment dummy over salary term, scaled by $5000 * \frac{100}{50000}$. The scaling gives us the estimate as a percentage of the base salary offered. Standard errors in parenthesis. *** denotes significance at 1%. The WTA estimates are also significant at the 1% level

5.3 Heterogeneity in Labor Supply and WTA

Table 5 uses Model 3 and Model 4 mentioned above to estimate heterogeneity between different pairs of groups. Each column tells us the difference in the treatment effect between Group 1 and Group 2. Group 1 is the group that is mentioned in the label first.

We don't see significant differences when comparing all white respondents to all non-white respondents, or female white respondents to female non-white respondents. However, for white men vs non-white men, we see that white men have a 20 percentage point higher decrease in labor supply for Company 2 if they are in the treatment group. These differences are significant at the 1% level for Column 1 and at the 5% level for Column 2.

We don't see a significant difference in the treatment effects of college degree holders and non-college degree holders. In terms of politics, we see that Democrats decrease their average labor supply by approximately 10 percentage points more than non-democrats (Column 1 and 2). This difference is significantly different than zero at the 5% level for Column 1, and at the 10% level for Column 2.

Table 5: Heterogeneity in Labor Supply Effects

Group 1 vs Group 2	(1) Model 3: Treat * Group 1	(2) Model 4: Treat * Group 1	(3) Model 4: Salary * Treat * Group 1
Women vs Men	-0.21*** (0.04)	-0.16*** (0.06)	-0.02 (0.02)
Whites vs Non-Whites	-0.07 (0.05)	-0.11 (0.08)	0.02 (0.03)
White Women vs Non-White Women	0.03 (0.07)	0.00 (0.11)	0.02 (0.04)
White Men vs Non-White Men	-0.19*** (0.07)	-0.21** (0.11)	0.01 (0.04)
College Degree vs No College Degree	-0.02 (0.04)	-0.05 (0.06)	0.01 (0.02)
Democrat vs Non-Democrat	-0.09** (0.04)	-0.11* (0.06)	0.01 (0.02)
Over 40 years vs Younger	0.00 (0.04)	-0.13** (0.06)	0.06** (0.03)

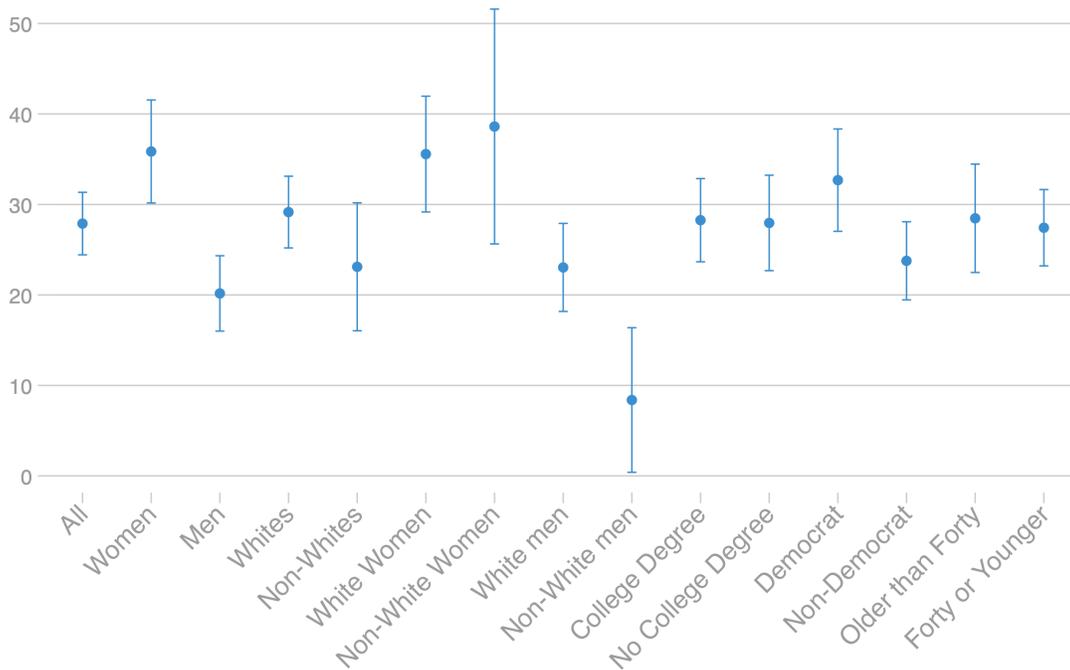
Notes: Each row shows the interaction effect when Group 1 is equal to 1. For example, Row 1 Column 1 should be interpreted as the overall additional leftward shift in labor supply for Women compared to Men due to a sexual harassment culture. Model 3 and Model 4 refer to Equation 3 and Equation 4 respectively. The dependent variable is an indicator equal to 1 if respondent chooses Company 2: Internet Co. at a given salary level. Standard errors in parenthesis. Statistical significance is denoted as follows: 10 percent (*), 5 percent (**), 1 percent

Lastly, for age, I look for heterogeneity between people over 40 years and people who are 40 years old and younger. I chose these categories based on the fact that the mean age for the sample was 40 and that Ford and Donniss (1996) show change in attitudes towards sexual harassment between the two age groups. We see that people over forty decrease their labor supply at the base salary level 13 percentage points more than younger people (Column 2). However, the treatment effect reduces for older people by 6 percentage points more than the reduction for younger people for each increment of \$5,000 in the salary offer. Thus, at the base salary level, older people have a larger labor supply response than younger people if they both know about the sexual harassment culture

at the workplace; however, as the salary offered by the company increases they are more likely to ignore the harassment culture and choose to work for the company.

Figure 4 shows the WTA estimates along with the 95% confidence intervals for different groups in the population. As discussed earlier, there is a large difference between men and women. Note that the estimates for each group are significantly different from 0 at the 95% level. However, for other subgroups, the estimates appear to be quite similar. We cannot statistically reject equality in these subgroup comparisons.

Figure 4: WTA Estimates across different groups



Notes: These estimates are derived using Equation (5) for each subgroup mentioned on the x axis. Y-axis shows the WTA estimates. 95% confidence intervals are indicated for each estimate. There were only 92 non-white respondents in the sample out of which 46 were men and 46 were women.

6 Conclusion

Scholars have argued that part of the resistance to taking the issue of sexual harassment seriously in the workplace has surely been a lack of understanding of the economic consequences (Parramore 2018). This paper provides some of the first estimates of the economic effects of sexual harassment on the labor market. I use a randomized survey experiment to provide labor supply shift estimates for a company due to the presence of a culture of sexual harassment at the workplace. I estimate an average 37% decrease in labor supply for a company if it has a sexual harassment culture. I also estimate a WTA compensation for prospective employees to choose to work for a company despite its culture of sexual harassment. On average, the WTA compensation to accept a sexual harassment culture is an additional 27.9% of the base salary. These estimates show that firms might lose a significant amount of talent, or have to pay considerably more to hire employees if they have a workplace culture of sexual harassment.

Past literature, such as Hersch (2011) used industry data to estimate compensating differentials due to sexual harassment. One concern with that was self-selection by prospective employees into certain industries. This paper addresses that through keeping the same company choices for both treatment and control but varying the information provided to respondents. The limitation of this experiment is that respondents are making hypothetical choices. However, since it is not possible to create such an experiment in a real-world setting, the estimates provided by this paper are important for discussing the economic problems of sexual harassment. Another unique aspect of my results is that most of the conversation around costs of sexual harassment is regarding the cost to companies in terms of settlements and payouts. However, this paper looks at the costs associated with labor to both the companies as well as prospective employees.

This paper measures the difference in estimates for men compared to women. I see considerable differences which are statistically significant. While there are negative shifts for both women and men, the estimates for women are much larger. While it is promising that men do take into account sexual harassment at a company when making labor market choices, the difference between the

estimates is concerning. A similar argument goes for the WTA estimates. Men are willing to compromise much less money than women to avoid a workplace sexual harassment culture. It is also worth noting the differential responses to treatment with an increase in salary. Men and women respond similarly to salary increases in the control group. However in the treatment group, for higher salary levels, the impact of the sexual harassment culture reduces significantly for men compared to women. These results show that with more awareness around the issue, we as a society are moving towards the right direction, however, it also shows that we still have a long way to go in terms of changing men's attitude towards the problem.

In conclusion, my results suggest a serious impact of sexual harassment on labor market dynamics. It significantly hurts workers as well as firms but disproportionately impacts the labor market choices of women. It is important – both morally and economically– for us as a society to work towards eliminating this problem from the workplace.

7 Bibliography

Basu, Kaushik. 2003. "The Economics and Law of Sexual Harassment in the Workplace." *Journal of Economic Perspectives*, 17 (3): 141-157. DOI: 10.1257/089533003769204399

Chan, D. K.-S., Chow, S. Y., Lam, C. B., Cheung, S. F. (2008). Examining The Job-Related, Psychological, and Physical Outcomes of Workplace Sexual Harassment: A Meta-Analytic Review. *Psychology of Women Quarterly*, 32(4), 362–376. doi.org/10.1111/j.1471-6402.2008.00451.x

McLaughlin, Heather Uggen, Christopher Blackstone, Amy. (2017). The Economic and Career Effects of Sexual Harassment on Working Women. *Gender Society*. 31. 333-358. doi.org/10.1177/0891243217704631.

Hersch, Joni. 2011. "Compensating Differentials for Sexual Harassment." *American Economic Review*, 101 (3): 630-34. DOI: 10.1257/aer.101.3.630

Clarke, E. J. R., Klas, A., Lizzio-Wilson, M., Kothe, E. J. (2018, October 24). Political Partisanship and Responses to Sexual Harassment Allegations against Politicians. doi.org/10.31234/osf.io/bp36q

Carol A. Ford Francisco J. Donis (1996) The Relationship Between Age and Gender in Workers' Attitudes Toward Sexual Harassment, *The Journal of Psychology*, 130:6, 627-633, DOI: 10.1080/00223980.1996.9915036

McLaughlin, H., Uggen, C., Blackstone, A. (2012). Sexual Harassment, Workplace Authority, and the Paradox of Power. *American Sociological Review*, 77(4), 625–647. doi.org/10.1177/0003122412451728

McFadden, Daniel (1974), "Conditional logit analysis of qualitative choice behavior", in P. Zarembka, ed., *Frontiers in Econometrics*, Academic Press, New York, pp. 105-142.

León, Gianmarco, and Edward Miguel. 2017. "Risky Transportation Choices and the Value of a Statistical Life", *American Economic Journal: Applied Economics*, 9(1): 202-228, doi: 10.1257/app.20160140

U.S. Department of Labor, Bureau of Labor Statistics. Retrieved from <https://www.bls.gov/emp/tables/median-age-labor-force.htm>

U.S. Department of Labor, Bureau of Labor Statistics (2017). Retrieved from <https://www.bls.gov/opub/reports/race-and-ethnicity/2017/home.htm>

Parramore, Lynn 2018. "MeToo: The Economic Cost of Sexual Harassment", *Institute for New Economic Thinking* <https://www.ineteconomics.org/research/research-papers/metoo-the-economic-cost-of-sexual-harassment>

8 Appendix

8.1 Survey

D20 Basic Demographic Questions



Q22 Age

Q1 Gender

- [Male](#) (1)
- [Female](#) (2)

Q4 What is the highest level of school you have completed or the highest degree you have received?

- Less than high school [degree](#) (1)
- High school graduate (high school diploma or equivalent including [GED](#)) (2)
- Some college but no [degree](#) (3)
- Associate degree in college ([2-year](#)) (4)
- Bachelor's degree in college ([4-year](#)) (5)
- Master's [degree](#) (6)
- Doctoral [degree](#) (7)
- Professional degree (JD, MD) (8)

Q6 What race do you identify with?

- [White](#) (1)
- Black or African [American](#) (2)
- American Indian or Alaska [Native](#) (3)
- [Asian](#) (4)
- Native Hawaiian or Pacific [Islander](#) (5)
- [Other](#) (6)

Q8 Please indicate the answer that includes your entire household income in (previous year) before taxes.

- Less than [\\$10,000](#) (1)
- \$10,000 to [\\$19,999](#) (2)
- \$20,000 to [\\$29,999](#) (3)
- \$30,000 to [\\$39,999](#) (4)
- \$40,000 to [\\$49,999](#) (5)
- \$50,000 to [\\$59,999](#) (6)
- \$60,000 to [\\$69,999](#) (7)
- \$70,000 to [\\$79,999](#) (8)
- \$80,000 to [\\$89,999](#) (9)
- \$90,000 to [\\$99,999](#) (10)
- \$100,000 to [\\$149,999](#) (11)
- \$150,000 or [more](#) (12)



Q10 Which statement best describes your current employment status?

- Employed, working 40 or more hours per week (1)
- Employed, working 1-39 hours per week (2)
- Not employed, looking for work (3)
- Not employed, NOT looking for work (4)
- Retired (5)
- Disabled, not able to work (6)



Q14 Generally speaking, do you usually think of yourself as a Republican, a Democrat, an Independent, or something else?

- Republican (1)
- Democrat (2)
- Independent (3)
- Other/No preference (5)

End of Block: Default Question Block

Start of Block: Block 5

Q13 2 Tech companies, **Tech Co.** and **Internet Co.** have each offered you a job that will pay \$50,000 annually. You will be required to choose one of them.

Now we'll be showing you news articles on these two companies. Please read them carefully as we'll be requiring you to answer questions on them later.

Start of Block: Block 4



Q12 Both companies are offering you a salary of \$50,000. Based on the news articles on the two companies above, which company would you choose to work for?

- Company 1: Tech Co. (1)
- Company 2: Internet Co. (2)

Display This Question:

If Both companies are offering you a salary of \$50,000. Based on the news articles on the two companies above, which company would you choose to work for?
Which... = Company 1: Tech Co.

Q15 Internet Co. is now offering you \$55,000 compared to the \$50,000 being offered by Tech Co. Which company would you choose to work for now?

- Company 1: Tech Co. (1)
- Company 2: Internet Co. (2)

Display This Question:

If Both companies are offering you a salary of \$50,000. Based on the news articles on the two companies above, which company would you choose to work for?
Which... = Company 1: Tech Co.
And Internet Co. is now offering you \$55,000 compared to the \$50,000 being offered by Tech Co.
Which... = Company 1: Tech Co.

Q16 Internet Co. is now offering you \$60,000 compared to the \$50,000 being offered by Tech Co. Which company would you choose to work for now?

- Company 1: Tech Co. (1)
- Company 2: Internet Co. (2)

Display This Question:

If Internet Co. is now offering you \$60,000 compared to the \$50,000 being offered by Tech Co. Which... = Company 1: Tech Co.

Q18 Internet Co. is now offering you \$65,000 compared to the \$50,000 being offered by Tech Co. Which company would you choose to work for now?

- Company 1: Tech Co. (1)
- Company 2: Internet Co. (2)

Display This Question:

If Internet Co. is now offering you \$65,000 compared to the \$50,000 being offered by Tech Co. Which... = Company 1: Tech Co.

Q21 Internet Co. is now offering you \$70,000 compared to the \$50,000 being offered by Tech Co. Which company would you choose to work for now?

- Company 1: Tech Co. (1)
- Company 2: Internet Co. (2)

End of Block: Block 4