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Ali Ahmed & Mats Hammarstedt

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Are people fussy about who they work with? An experimental test of Becker's coworker discrimination hypothesis

Ali Ahmed ^a and Mats Hammarstedt^{b,c}

^aDepartment of Management and Engineering, Linköping University, SE-581 83 Linköping, Sweden; ^bLinnæus University Centre for Discrimination and Integration Studies, Linnæus University, SE-351 95 Växjö, Sweden; ^cThe Research Institute of Industrial Economics (IFN), SE-102 15 Stockholm, Sweden

ABSTRACT

We used an experiment to investigate whether people's decisions over employment opportunities are affected by the ethnicity and sex of their potential future coworkers. University students ($N = 1,406$) were asked to state the lowest hourly wage rate at which they would be willing to accept a job on a campus food truck, where they would work alongside the food truck owner. The ethnicity and sex of the food truck owners were randomized across participants. Results showed no signs of coworker prejudice in terms of the probability of being interested in the job and reservation wage.

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1. Introduction

In his seminal work on labor market discrimination, Becker (1957) argued that wage disparities between different groups of workers may stem from three sources. Employers may act on their own, their customers', or their employees' prejudices against a group of people that is perceived as undesirable, which results in labor market discrimination. The theoretical prediction is the same regardless of the source of the prejudices. The less desirable group of workers will earn less than the desirable group because prejudiced employers, customers, or workers need to be compensated for their discomfort with the less desirable.

Subsequent research in economics on discrimination has mostly focused on employer discrimination. One exception is Sasaki (1999), who developed an equilibrium search model of coworker discrimination. However, there is a large body of research in social psychology that demonstrates that coworker discrimination exists, explains the various ways prejudices and discrimination in the workplace manifest, and identifies the consequences of workplace discrimination (Colella & King, 2018). This literature has documented workplace discrimination based on gender and sex (Heilman & Caleo, 2018; Manchester, Leslie, & Dahm, 2018; Taylor, Buck, Bloch, & Turgeon, 2019), race and ethnicity (Avery, Volpone, & Holmes, 2018; Bradley-Geist & Schmidtke, 2018; Gheorghiu & Stephen, 2016), age (Ryan, King, & Finkelstein, 2015; Truxillo, Finkelstein, Pytlovany, & Jenkins, 2018), disability (Baldrige, Beatty, Boehm, Kulkarni, & Moore, 2018; Graham, McMahon, Kim, Simpson, & McMahon, 2019), religion (Ali, Yamada, & Mahmood, 2015; Ghuman & Ryan, 2018), and sexual orientation (Di Marco, Hoel, Arenas, & Munduate, 2018; Pichler & Ruggs, 2018). It shows that workplace discrimination can take the most subtle and covert forms that often fall under the legal radar (Marchiondo, Ran, & Cortina, 2018), and that there are significant impacts of workplace discrimination on targeted individuals (del Carmen Triana, Trzebiatowski, & Byun, 2018), organizations (Smith & Simms, 2018), as well as on perpetrators (Madera, 2018).

In this paper, we investigate whether coworker prejudices affect people's job search decisions and whether coworker discrimination occurs even before joining a workplace. Such a perspective is important for understanding how workers' queue length to available jobs and their terms and conditions vary depending on the composition of workers on a prospective workplace. We study this perspective by conducting an experiment in which we asked 1,406 university students in Sweden to consider a job opportunity at a campus food truck, where they would work side by side with the owner. The food truck owner's ethnicity and sex were randomly assigned using Swedish- and Arabic-sounding names and typical male and female names. We then examined whether the probability of being interested in the job and the lowest hourly wage at which the job would be accepted were affected by the food truck owner's ethnicity and sex.

2. Conjectures

According to the social identity theory, people categorize themselves into "us" and "them" based on various traits (Tajfel, 1970). When group membership is established, people tend to be favorably disposed towards their "ingroup" and adversely disposed towards "outgroups" (Tajfel, Billig, Bundy, & Flament, 1971). We conjectured that food truck owners' ethnicity would affect participants' interest in the job, in the sense that food truck owners with Arabic-sounding names would be less attractive to prospective employees. We also conjectured that the lowest hourly wage at which a participant would accept the job offer would be higher when food truck owners have Arabic- rather than Swedish-sounding names. Hence, we were interested in whether Swedish participants (the majority population) treat people with Arabic-sounding names (the outgroup) differently than people with Swedish-sounding names (the ingroup). These conjectures were based on the vast field experimental evidence on ethnic and racial discrimination (Bertrand & Duflo, 2017; Riach & Rich, 2002). No predetermined conjectures were made about the sex of the food truck owners since field experimental studies on sex discrimination are inconclusive (Bertrand & Duflo, 2017; Riach & Rich, 2002).

3. Method

Participants were 1,406 students at a large university in Sweden. Fifty-nine percent were women and 11 percent were born outside Sweden. Participants ranged in age from 18 years to 68 years ($M = 25$, $SD = 6.52$). Invitations to participate voluntarily in the experiment were sent through the university's official student information email system. The experiment was conducted during February 2018.

Participants received information about a series of potential small businesses on campus. They were told that the purpose of the study was to gain insights about students' opinion and interest those establishments at Campus Valla, from their perspective of being potential customers and/or workers. Eight types of small businesses were presented to all 1,406 participants: salad food truck, baguette food truck, kebab food truck, pasta food truck, corner shop, hairdresser, second-hand shop, and cinema. The cases were presented to the participants in randomized order. Each of these cases had their own accompanying market related questions that participants were asked to answer from a perspective of being potential customers or workers. One of these cases, the salad food truck, was used to test our conjectures about coworker discrimination. We will, therefore, explain the salad food truck case. These other cases will not be discussed.

In the salad food truck case, we gave participants information about the business. We then showed them a picture of the salad food truck with the owner's name on the food truck, for example, "Mia's Salad Bar." In the next step, we explained that this food truck has an opening for part-time employment suitable for a student. We stated the following (English translation):

The following ambulatory salad bar plans to establish on campus at the university. The owner will work in the salad bar. The owner also plans to hire a student who will work every other weekend divided between two Friday

nights between 18–23 and two Saturday nights between 18–23 every month in the city center. You will work with the owner, preparing salads and serving customers. You do not need previous experience in the restaurant industry. The salad bar will have collective bargaining agreements and the minimum wage per hour is, depending on different agreements and your age, about 100 krona per hour.

Following this statement and displaying the salad food truck, we asked participants three questions related to the specific case. We asked participants whether they thought the salad food truck was a good idea or not. We then asked if they would be interested in a job with the salad food truck. If they expressed interest in the job, we asked participants to state their reservation wage – the lowest hourly wage at which they would be willing to work in the salad food truck – ranging from 90 to 200 Swedish kronor. Participants' answers to the latter two questions constituted our dependent variables: the probability of being interested in the job and the reservation wage. We used single-item measures because we considered our outcomes to be sufficiently narrow and unambiguous (Sackett & Larson, 1990). The stated minimum wage of 100 krona per hour in the experiment was in the range of the actual minimum wages (93.40–121.63 krona per hour depending on age) in the restaurant sector in Sweden at the time of the experiment (Information retrieved from the website of the Hotel and Restaurant Workers' Union in Sweden, March 12, 2019: <http://https://www.hrf.net/lon-och-villkor/din-lon/>).

Our independent variables were ethnicity and sex of the salad food truck owner which we randomly manipulated across participants. We used the picture showing the salad food truck with its name on it to reveal the ethnicity and sex of the owner. We used the following food truck names to manipulate ethnicity and sex (English translation): Danne's Salad Bar, Hassan's Salad Bar, Mia's Salad Bar, Hamida's Salad Bar. Danne and Mia are Swedish-sounding names; Hassan and Hamida are Arabic-sounding. Danne and Hassan are typical male-sounding names; Mia and Hamida are typical female-sounding names. We ended up with these names using the following process: We first made a short list of Swedish- and Arabic-sounding male and female names using our own intuition. Our criteria were to not have too long or difficult-to-pronounce names to go with the food truck. We then researched the names by searching them in the name database of Statistics Sweden to assure their usage in Sweden and to check that they truly were used by men and women, respectively. We also researched the origin of the names, particularly the assumed Arabic-sounding names. After this process, we randomly selected one name in each category.

Participants answered a few questions eliciting background information, such as age, sex, and birthplace, after completing the first part of the experiment with the eight small businesses. Manipulation checks were not included to keep the study brief. However, a pilot test was run before the actual study among university colleagues to assure that the instructions and information were conveyed as intended. It took about 15 min for participants to complete the experiment. The experiment was administered in Qualtrics. The data that support the findings of this study are openly available in Zenodo at <http://https://doi.org/10.5281/zenodo.2536797>.

4. Results

Tables 1 and 2 summarize the data and the main results of the experiment. Table 1 presents the percentage of participants interested in the job on the salad food truck and Table 2 presents the mean reservation wage. Both tables present the findings by treatment condition for the whole sample as well as separately for Swedish participants and participants with a foreign background (where "foreign" is defined as being born outside Sweden), male and female participants, and younger (traditional university aged) and older (nontraditional university aged) participants (where "younger" is defined as being 18–23 years old – since most students are 18 when they leave upper secondary school and since most university education programs are at most five years long – alternatively, being younger than or having the same age as the sample median age, which also happened to be 23 in our sample). Table 1 shows that 1,406 students participated in our experiment. Of these, 375 encountered the salad truck owner with a Swedish-sounding male name, 335

Table 1. Percentage of participants interested in the job by participant type.

	All	Swedish	Foreign	Men	Women	Young	Old
Swedish-sounding male name	52.5% (197/375)	50.6% (174/344)	74.2% (23/31)	48.7% (76/156)	55.3% (121/219)	57.2% (111/194)	47.5% (86/181)
Arabic-sounding male name	55.8% (187/335)	53.9% (159/295)	70.0% (28/40)	50.8% (68/134)	59.2% (119/201)	59.7% (105/176)	51.6% (82/159)
Swedish-sounding female name	56.7% (204/360)	55.1% (174/316)	68.2% (30/44)	52.6% (80/152)	59.6% (124/208)	61.0% (114/187)	52.0% (90/173)
Arabic-sounding female name	55.7% (187/336)	56.2% (168/299)	51.4% (19/37)	53.0% (71/134)	57.4% (116/202)	58.6% (102/174)	52.5% (85/162)
All	55.1% (775/1,406)	53.8% (675/1,254)	65.8% (100/152)	51.2% (295/576)	57.8% (480/830)	59.1% (432/731)	50.8% (343/675)

Notes: The number of participants interested in the job opportunity and the total number of participants in each treatment are given in parentheses. Swedish: participant was born in Sweden. Foreign: participant was born abroad. Young: participant was 23 years old (sample median age), or younger. Old: participant was older than 23 years.

Table 2. Mean hourly reservation wage by participant type.

	All	Swedish	Foreign	Men	Women	Young	Old
Swedish-sounding male name	124.8 (18.45)	124.7 (17.01)	125.4 (27.50)	124.9 (20.93)	124.7 (16.79)	123.5 (17.67)	126.4 (19.38)
Arabic-sounding male name	122.4 (20.09)	121.8 (19.11)	125.9 (25.08)	123.4 (26.06)	121.9 (15.81)	118.2 (15.77)	127.8 (23.56)
Swedish-sounding female name	124.1 (20.25)	123.8 (18.87)	126.1 (27.22)	124.3 (26.17)	124.1 (15.39)	121.0 (16.83)	128.2 (23.36)
Arabic-sounding female name	122.8 (17.08)	122.7 (16.15)	123.7 (24.36)	125.4 (21.61)	121.2 (13.46)	120.7 (16.27)	125.3 (17.79)
All	123.6 (19.02)	123.3 (17.81)	125.4 (25.79)	124.5 (23.71)	123.0 (15.45)	120.9 (16.72)	126.9 (21.12)

Notes: Standard deviations for the reservation wages are given in the parentheses. Reservation wages are in Swedish kronor. The number of observations in each case is simply the number of participants interested in the job, given earlier in Table 1. Swedish: participant was born in Sweden. Foreign: participant was born abroad. Young: participant was 23 years old (sample median age), or younger. Old: participant was older than 23 years.

encountered the salad truck owner with an Arabic-sounding male name, 360 encountered the salad truck owner with a Swedish-sounding female name, and 336 encountered the salad truck owner with an Arabic-sounding female name.

Table 1 shows that 55% of all participants were interested in the job opportunity. The differences between treatment conditions, however, seem small. Indeed, there are no statistically significant differences in the percentage of participants interested in the job across treatment conditions, $\chi^2(3, N = 1,406) = 1.468, p = 0.690$. Participants with a foreign background were 12 percentage points more likely than Swedish participants to be interested in the job, $\chi^2(1, N = 1,406) = 7.841, p < 0.01$. There were, however, no statistically significant differences across treatment conditions, neither among Swedish participants, $\chi^2(3, N = 1,254) = 2.323, p = 0.508$, nor among participants with a foreign background, $\chi^2(3, N = 152) = 4.827, p = 0.185$. Women were about 7 percentage points more likely to be interested in the job than men, $\chi^2(1, N = 1,406) = 6.017, p < 0.05$. Differences across treatment conditions among men and women were not statistically significant: among men, $\chi^2(3, N = 576) = 0.691, p = 0.875$; and among women, $\chi^2(3, N = 830) = 1.038, p = 0.792$. Younger compared to older participants were about 8 percentage points more likely to be interested in the job, $\chi^2(1, N = 1,406) = 9.731, p < 0.01$. Yet again, the differences across treatment conditions among younger and older participants were not statistically significant: among younger, $\chi^2(3, N = 731) = 0.592, p = 0.898$; and among older, $\chi^2(3, N = 675) = 1.104, p = 0.776$.

Next, we analyzed the mean reservation wage of participants across treatment conditions in Table 2. The mean reservation wage of all participants was almost 124 Swedish kronor per hour. Differences in the reservation wage across treatment conditions were small and not statistically significant, $F(3,771) = 0.659, p = 0.577$. Differences in the reservation wage between Swedish participants and participants with a foreign background and between men and women were not statistically significant: between Swedish and foreign participants, $t(773) = 1.045, p = 0.297$; and between men and women, $t(773) = 1.054, p = 0.292$. Differences

in reservation wage across treatment conditions among Swedish participants, $F(3,671) = 0.845$, $p = 0.470$, participants with a foreign background, $F(3,96) = 0.037$, $p = 0.990$, men, $F(3,291) = 0.091$, $p = 0.965$, and women $F(3,476) = 1.415$, $p = 0.238$, were not statistically significant. The mean reservation wage of older participants was five percent higher than the mean reservation wage of younger participants, $t(773) = 4.446$, $p < 0.001$. The differences in reservation wage across treatment conditions were not statistically significant, neither among younger participants, $F(3,428) = 1.838$, $p = 0.140$, nor among older participants, $F(3,339) = 0.345$, $p = 0.793$.

5. Discussion

Our results showed that neither participants' interest in the job nor their reservation wage were affected by potential coworkers' ethnicity and sex. Hence, we do not find support for Becker (1957) coworker discrimination hypothesis. This brings new insights to the empirical knowledge on the sources of labor market discrimination that cause wage and employment disparities. We acknowledge, however, that our experiment is restricted to a specific context: young, well-educated participants, fast food environment, low-skilled work, low pay, temporary and irregular working hours. Therefore, further research is needed to explore whether coworker discrimination exists in other settings.

We make three suggestions for the future. First, the context of finding a part-time job parallel to university studies may not trigger discriminatory behavior. The sole purpose of such a job is usually to generate extra income. Also, students normally do not take these jobs on a long-term basis. As such, they may not care about the different aspects related to the job, as long as the job brings them some money. Hence, university students interested in part-time jobs for a short period of time might be less judgmental and have more tolerant preferences than others and otherwise and, therefore, making ethnicity salient through names may not have induced sufficient feelings of "us" and "them", and thereby categorization into ingroup and outgroup in accordance with the social identity theory, that could have resulted in ethnic bias. One way to test this hypothesis and refine the present study would be to conduct the experiment among students who are about to graduate, and ask them about their preferences, terms, and conditions regarding a job which matches their university training. This kind of situation may push people to really think about all aspects related to a job. Second, another interesting extension of the current study would be to conduct an experiment among people who already have a job. People who are engaged in on-the-job search have higher demands, reservation wages, and are much pickier than people who are just about to enter the labor market. Preferences over the ethnic composition of a workforce and feelings of "us" and "them" may reveal themselves when people have the option of enforcing their complete demands. Third, an incentivized experiment where participants anonymously can demand compensation for their individual efforts in a group task could bring further insights. Such an experiment would allow us to examine how efforts and compensation requests vary with the composition of the group and the characteristics of the group members.

If we, for the moment, allow us to assume that our findings extend beyond the boundaries and limitations of our experimental setting, then it actually makes an interesting proposition in relation to the existing field experimental evidence of labor market discrimination. Prejudiced coworkers may not be the reason for why employers discriminate against ethnic minorities. Following Becker (1957), Phelps (1972), and Arrow (1973), the documented ethnic discrimination in the labor market may then stem from either employers' own prejudices or their customers' prejudices, or has its roots in statistical discrimination.

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ORCID

Ali Ahmed  <http://orcid.org/0000-0002-1798-8284>

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