Stockholm University

DISCRIMINATION IN THE HOUSING MARKET OF STOCKHOLM

An Internet based field experiment

Bachelor Thesis in Economics

Authors: Ragnar Bengtsson & Ellis Iverman

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Abstract

This paper studies discrimination in the housing market of Stockholm by conducting a field experiment on the internet. Fictitious applicants with typical Swedish and Arabic sounding names apply vacant rental housing units advertised by private persons on the internet. The paper explores the incidence of discrimination in the choice by advertisers to invite applicants to further contacts or to a showing of the vacant housing unit. We find in line with previous studies that women with Swedish sounding names experience a positive treatment compared to applicants with an Arabic sounding name. However, there is little evidence of a difference in the response rates between the male with a Swedish, and those with Arabic sounding names irrespective of gender.

Keywords: Discrimination, Internet, Field experiment, Housing market

1. Introduction

Discrimination affects the costs and benefits of an economic exchange and therefore, it influences overall market efficiency. Discrimination occurs when participants in the marketplace take into account factors such as ethnicity and gender when making economic exchanges, if these factors are unrelated to efficiency. Although economists have little to say about the psychological roots of prejudice, we can easily reinterpret this type of behavior in terms of the language of economics (Borjas 2010).

Ideally, in order to detect discrimination, we need to observe the very same person twice, while at the same time change one of the characteristics such as ethnicity or gender. The difference in treatment can be attributed to discrimination. To get close to the ideal experiment needed to detect discrimination, fictitious applicants with Swedish and Arabic sounding names have been used to randomly apply for housing units on the internet advertised by private persons.

Our results indicate that women with Swedish sounding names are positively discriminated, but that there is little evidence of a difference in the response rates for the three other groups; men with Swedish sounding names and women and men with Arabic sounding names. The results in this paper have low external relevance since the experiment is conducted in the housing market of Stockholm that in several ways differ from the rest of the country. From now on the field experiments participants or internet advertisers will also be referred to as ‘landlords’. Concerning the names of the applicants, previous Swedish research has referred to the minority applicant as ‘Arabic/Muslim’, since religion is only weakly correlated with our minority applicants’ names we have chosen to call our applicants; ‘applicant with Arabic female (male) sounding name’.

2. Previous research

‘Situation Testing’ refers to a method often used to gather quantitative data when examining discrimination. Early studies trying to measure discrimination using

Situation Testing originated in the United States and are typically based on field experiments involving personal approach between fictitious housing applicants and landlords. Yinger (1986) demonstrated that African Americans were informed of 30 percent less housing units than European Americans. Page (1995) reached similar results but with somewhat lower estimates. Roychoudhury and Goodman (1996) presented results implying that discrimination varied between cities and depended on the ethnicity and age of the landlords. Two additional studies by Ondrich et al. (1998, 1999) concluded that discrimination in the housing market essentially is caused by the prejudice of the landlord and in response to the prejudice of their 'white' clients.

According to Bråmå (2007), the Swedish research on discrimination was mainly based on individuals' personal experience of being discriminated. These have indicated that the housing market is a social field (aside of public entertainment and the labor market) suffering from widespread discrimination. The results also implied large differences in experienced discrimination between persons with different ethnicities. Those most exposed, seemed to be persons of Romany, African and Middle East origin. On a structural level the problems are suspected to be linked to the generally weaker position of the minority households.

According to Johansson (2007), methods using Situation Testing were long banned in Sweden since they did not meet ethical standards. However, in line with American research, recently more and more field experiments of this kind have also been conducted in Sweden. Johansson (2007) and Berglund (2007) carried out the first large field experiments on discrimination in the Swedish housing market by letting trained persons via telephone apply both public and private housing units. Between the Muslim/Arabic and the Swedish males, the findings suggested a suspected discrimination rate at 37 percent in favor of the Swede and no major differences between public and private landlords.

Methods involving personal approach have long been one of the best ways to analyze discrimination in these kinds of market situations, though they are very resource demanding making it hard to conduct a satisfying amount of observations. Also, depending on the nature of the experiment the human factor

may affect the results. Recently, much of the housing market has shifted over to the internet, making it an excellent area to perform field experiments by the use of 'Correspondence Testing'. This method is much like the above described Situation Testing with the difference that the contact, in our case between the applicants and the landlords is limited to channels such as letter, or in our case email. By leaving out all forms of personal contact other than those we have complete control over we can eliminate some of the elements that potentially create biasness.

This study is closely related to two earlier Swedish studies that also used an internet platform. In the first by Ahmed and Hammarstedt (2007), were 500 housing units applied for via internet by three fictitious persons with traditional Arabic/Muslim and Swedish names. The applicants were two Swede's, one male and one female, and one Arabic/Muslim male, but no Arabic/Muslim female. The results in this study demonstrated that men of ethnic minorities were discriminated compared to Swedish men, and that Swedish men experienced discrimination in contrast to Swedish females. The reply rate was lower for all the applicants if the housing unit was located in any of the three largest cities of Sweden[1]. However, the rate of discrimination did not change dramatically between public or private landlords, but the results indicated that the relative rate of discrimination might be lower in the three largest cities of Sweden than elsewhere.

Ahmed et al. (2010) conducted a similar investigation with the aim to analyze if increased information given by the applicants can reduce the level of discrimination. The paper concluded that giving more information did raise the call back rate for all applicants, but did not change the rate of discrimination between the applicants. This suggests that discrimination on the housing market is preference[2] and not statistical[3] based.

[1] Stockholm, Gothenburg and Malmo.
[2] See Becker (1957).
[3] See Phelps (1972) and Arrow (1973)

Overall, the research on discrimination in the Swedish housing market is limited, and previous field experiments have mainly focused on discrimination by private and municipal landlords towards private persons. Our main contribution to the research field is to investigate whether there is a gender effect also within the Arabic name group. Moreover, our study serves as a replication study for the other groups and also allows for separate treatment in the types of housing, since we also let our applicants to apply for rooms.

This papers *disposition* is organized as follows. The next section provides background information of the housing market in Stockholm. Section 4 discusses the empirical strategy and the data. The main results are presented in Section 5. Conclusions appear in Section 6.

3. The housing market of Stockholm

Stockholm is characterized by a shortage of housing units in the primary rental market. The unbalances in the market are linked to regulations, slow construction processes and the tax system that limits the new construction and the movement in the market (Borg & Pousette 2010). The types of housing units that concern this paper are rental and tenant-ownership apartments and to some extent detached houses, as well as separate rooms.

A flexible labor market also needs a flexible housing market, where rental apartments could play a crucial role. The growth in cities as Stockholm and its nearby region may not reach its potential if people wanting to move there cannot. People moving in outweighs the amount of new housing units by large, while the queue systems for rentals in large cities favor those already living there (Tottmar 2010; Lind & Lundström 2007). Today Stockholm's housing market is characterized of a severe shortage of housing units, giving an average queue time of 20 years for a large inner city apartment and 16 years for a small one, while 200 000 persons are listed in Stockholm's municipal apartment queue (Warne 2007).

The share of people with foreign background is smaller in Stockholm's inner city than Stockholm's municipality. The city is experiencing large price increases while the criteria's for loans recently has sharpened and the share of municipal rental apartments is decreasing (Löfberg 2010). Overall, this has contributed to an extensive second hand market of vacant housings the majority advertised via the internet, e.g. using the platforms Bostaddirekt.se[4] and Blocket.se[5].

4. The experiment, data collection and estimation equation

In this section, we first describe the experiments framework and justify the choice of the methodology. Finally, the data and empirical model are described. For more detailed information see Appendix A.

The internet platform that was used is Sweden's largest buy and sell site Blocket.se, where people as well as companies can publish ads to rent, buy and sell services as well as goods.

Four *fictitious applicants* were used; two with typically Swedish and two with typically Arabic sounding names that besides ethnicity, clearly indicated two women and two men. Each of them was given a cell phone number that was registered at Eniro.se[6], a leading search company at the Nordic media market where the majority of the Swedish citizens' phone numbers are registered. Any addresses were not written because a person's current place of living, in this case a future tenant may indicate belonging to a certain class/category and thereby risk to affect the advertisers incentive to respond. G-mail.com[7] was used as the applicants e-mail provider.

The *application letters* consists of a short personal description attached with a cell phone number. The letters are identical except the names that also reveal the applicant's gender. They were formulated to maximize the response frequency and thereby provide the analyze with 'power', in spite that signing a contract for a

[4] www.bostaddirekt.se
[5] www.blocket.se
[6] www.eniro.se
[7] https://www.google.com

shorter period is good enough; a longer period is explicitly preferred in line with the applicant's profile.[8] The actual mentioning of a 'contract' also adds up to the seriousness of the applicant, as we are aware of that the majority of the ads posted concern the advertisers' own vacant home or part of home, and that the law in this kind of letting involves signing second hand contracts[9].

The vacant *housing units* applied for met certain reasonable criteria's that took the applicants' profiles into consideration. Amongst others, the ad or housing unit has to be located in Stockholm County published by a private person and have a reasonable cost and size.

The routines when *registering the data and applying* were developed to minimize errors and a copy of the applied ad was always saved as well as selected variables[10]. The experiment was carried out as a random sample[11] test and the housing units were consistently applied for in a certain order starting with applicant number one followed by number two and so on. Three search schemes were used during the search period.

When *measuring replies* mail answers were registered as positive if they indicated that the landlord wanted to have; further contacts or implied an invitation to a showing of the housing unit. All telephone calls were counted as positive replies. The registering of several variables from each ad made it easy to track down the particular ad in question.

The *research ethics* in this kind of field experiment must be taken seriously since it involves observing peoples' behavior without the advertisers' knowledge and permission. The authors did their best to minimize the costs and time of the

[8] Increasing information should yield higher response rate but should not affect the estimate of the potential discrimination effect in line with Ahmed, Andersson and Hammerstedt (2010).
[9] The rules concerning second hand renting is found in 39-40 §§ 'hyreslagen' (chapter 12, 'jordabalken') and in chapter 7, 10-11 §§ 'bostadsrättslagen'.
[10] See Table A3 in Appendix A.
[11] To further minimize the risk of applying an ad twice when replicating this papers experiment, a methodology change could be to write four differently formulated application letters implying identical characteristics and randomize them for each ad (at the expense of totally identical application letters).

participating advertisers by trying to reply and turn down any offer within 48 hours. The experiment was conducted within the regulations and boundaries of the internet platform Blocket.se to avoid adverse reactions among participants and platform authorities. We are aware of the methodological dilemma between observing uninfluenced behavior and informing the participants about the purpose of the experiment. However, we chose not to inform the participants, and since the majority of the advertisers replies were turned down within 48 hours the authors argue that our routines did minimize the landlords' costs and harm.

Table 1 shows descriptive statistics of relevant variables. First, we see that only 13.6 percent of the applications generated a reply (165 positive replies of 1213 observations) naturally, the proportion of applicants with respect to gender and ethnicity is even. Apartments are more often for rent and about a fourth of the ads' housing units were located in Stockholm city centre[12]. Landlords with Swedish sounding names are overrepresented.

Table 1. Summary statistics.

Variable	Mean	Sd	N
Positive reply	0.136	0.343	1213
Applicant with Swedish name	0.500	0.500	1213
Applicant with Arabic name	0.499	0.500	1213
Male applicant	0.496	0.500	1213
Female applicant	0.504	0.500	1213
Stated rent	5319	2045	1200
Housing unit is an apartment	0.827	0.378	1210
Number of rooms	1.395	0.507	1208
Landlord looking for room mate	0.390	0.488	1211
Stockholm city centre	0.232	0.422	1213
Landlord with Swedish name	0.636	0.481	1127
Male landlord	0.509	0.500	1068

For further information about the statistics see Appendix A.

[12] For a full description see Table A1 in Appendix A.

Since we have randomized the applicants' names and kept all other information constant, the following model[13] should yield unbiased estimates of the different response rates on the housing market for the different groups

$$Reply_i = \alpha + \lambda Male_i + \delta Arabic_i + \beta Male_i * Arabic_i + u_i, \qquad (1)$$

where *Reply* is an indicator taking the value 1 if we experienced a positive response and zero otherwise. *Male* is an indicator of gender and *Arabic* takes the value 1 if the name is an Arabic sounding one and 0 otherwise. The error term *u* measures all other determinants of the response, but should by randomization be uncorrelated to all other independent variables. Clearly, we choose to treat the applicant with a Swedish female sounding name as the comparison group. λ measures the effect of applying with a Swedish male sounding name, δ measures the effect of applying with an Arabic female sounding name. $\lambda + \delta + \beta$ measures the effect of applying with a male Arabic sounding name. We should note that the effects are interpreted as differences in means of the probability of a positive reply between females with a Swedish sounding name and the other group means. If the effect is negative, then corresponding applicants are discriminated in relation to the applicant with a Swedish sounding female name. Naturally, we can add covariates or split the sample to separate the effect across dimensions such as rooms and apartments. Moreover, controls can serve as a randomization check.

5. Results

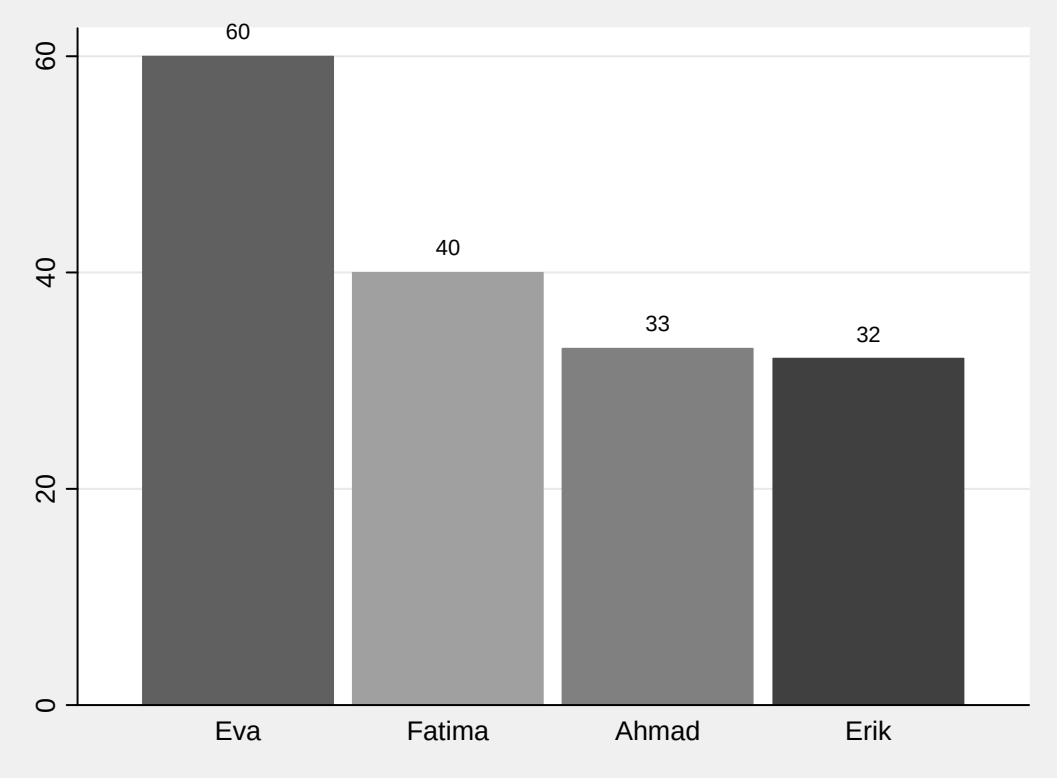
In this section we first present the overall mean positive response rate and then we regress[14] the applicants' variables against landlord characteristics. Finally we regress our findings for a positive response against several applicants, housing units and landlord characteristics.

[13] A linear OLS probability model is used to compare probability values; this is also to increase the intuitive understanding of our regression results.

[14] All OLS regression results have been controlled with 'dprobit' regressions as well with no relevant changes in the results. We chose to use an OLS model since it makes it easier for the reader to understand the results.

Figure 1 shows the number of positive replies by subgroup. Clearly, we can confirm the finding in Ahmed and Hammarstedt (2007); that woman with a Swedish sounding name is positively discriminated. There seems to be a slight positive gender effect also for females with Arabic sounding names. Interestingly, there is little evidence for separate treatments among males, contrary to the results of Ahmed and Hammarstedt (2007).

Figure 1. Number of positive replies by applicant (in total 165).



Estimating equation (1) by OLS yields the probabilities of receiving a reply for the different groups. Table 2 presents the results.

Table 2. Probability estimates of getting a positive response using OLS.

VARIABLES	(1)	(2)	(3)	(4)
Applicant with male name	-0.0872***	-0.0875***	-0.0876***	-0.0779***
	(0.0288)	(0.0287)	(0.0287)	(0.0301)
Applicant with Arabic sounding name	-0.0617**	-0.0617**	-0.0621**	-0.0554*
	(0.0298)	(0.0298)	(0.0298)	(0.0310)
Male*Arabic sounding name	0.0636	0.0637	0.0632	0.0455
	(0.0391)	(0.0391)	(0.0392)	(0.0410)
Stockholm city centre		-0.0296	-0.0263	-0.0333
		(0.0223)	(0.0225)	(0.0230)
Landlord looking for room mate			0.0294	0.0272
			(0.0207)	(0.0216)
Landlord with Swedish name				-0.0133
				(0.0215)
Observations	1,213	1,213	1,211	1,126
R-squared	0.011	0.012	0.014	0.013

Heteroskedastic robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

In our baseline specification we add no controls (1). Clearly, our male applicant with a Swedish sounding name is negatively discriminated and receives about 8.7 percentage points less offers compared to the Swedish female sounding name. In line with figure 1 we see Arabic female sounding names also experience discrimination, but the effect is somewhat lower, 6.2 percentage points. However, male Arabic sounding names, the sum of the coefficients is no different than the Swedish male sounding name effect.

When adding controls sequentially in column 2-4, we see no major changes in the key estimates; the findings are robust for inclusion of these controls. Although insignificant, the point estimates indicate that applying for a contract in Stockholm city centre produce a lower response rate. Moreover, sharing a room yields a higher response rate. Landlords with a Swedish sounding name are however less keen to reply.

Extensions: It is of interest to split the sample into the following groups: whether the contract is in Stockholm city centre or not, whether the contract is a shared room or an apartment, or weather the landlord has a Swedish sounding name or

not. By splitting the sample along these lines we investigate whether the effects are different in these subgroups. The share of immigrants is lower in the city centre and the education level is higher, this could influence discrimination. Also, subletting a room to a person with an Arabic sounding name could induce a higher discrimination estimate if 'not in my back yard effects' exist, on the other hand the room market might face a lower demand, potentially weakening the discrimination effect. Finally, it might be that discrimination is working mostly through the channel that one ethnic group is discriminating some other group, motivating the last split. Table 3 presents the results.

Table 3. Probability estimates of getting a positive response using OLS.

VARIABLES	(1) Stockholm city centre	(2) Not Stockholm city centre	(3) Landlord looking for room mate	(4) Housing unit is an apartment	(5) Landlord with Swedish sounding name	(6) Landlord with non Swedish sounding name
Male applicant	-0.027	-0.173***	-0.112**	-0.073**	-0.082**	-0.068
	(0.033)	(0.051)	(0.052)	(0.034)	(0.037)	(0.051)
Applicant with Arabic sounding name	0.057	-0.236***	-0.096*	-0.043	-0.083**	-0.010
	(0.037)	(0.047)	(0.052)	(0.036)	(0.038)	(0.053)
Applicant with Arabic * male sounding name	-0.023	0.196***	0.057	0.071	0.069	0.012
	(0.050)	(0.061)	(0.067)	(0.048)	(0.050)	(0.070)
Observations	702	505	472	739	717	410
R-squared	0.009	0.067	0.023	0.006	0.013	0.008

Heteroskedastic robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Interestingly, the results in column 1 show that landlords in the city centre of Stockholm show no statistically significant discriminatory behavior towards Arabic sounding names. Moreover there is no statistical significant gender effect and the point estimate is quite low (2.7 percent). Outside the city centre (column 2), the same picture is presented as in Ahmad and Hammarstedt (2007) with the new finding that women with Arabic sounding names do worse than males with Arabic sounding names. Note also that outside the city centre, the discrimination effects towards Arabic sounding names changes dramatically. Splitting the sample into either 'Landlord looking for room mate' (column 3) or any of the other dimensions we see no clear divergence from the main results, except that there

seems to be little evidence of discriminatory behavior of landlords that do not have a Swedish name.

6. Conclusion

We have found clear indications of positive discrimination in the over all Stockholm housing market in favor of our applicant with the Swedish female sounding name. Our applicant with the Swedish male sounding name is negatively discriminated compared to the Swedish female sounding name. Arabic female sounding names also experience discrimination, but the effect may be somewhat lower. We found no difference between the males.

Considering separate rooms we found no indications of ‘not in my backyard effects’ since there were no change in the discriminatory behavior even if it could be expected. Possible explanations may be the low demand for this type of occupations and/or that even if those landlords would want to discriminate; the need for an extra income outweighs it.

Interestingly, there was little evidence for separate treatments among the male sounding names, contrary to the results of Ahmed and Hammarstedt (2007), and landlords in the city centre of Stockholm showed no statistically significant discriminatory behavior towards any of our applicants. A possible explanation of the lower discrimination level in the city centre may be its populations’ average higher education level and/or younger population.

Further more, our results make us suspect that the indication of a lower rate of discrimination in urban areas found in Ahmed and Hammarstedt (2007) and Ahmed et al. (2010) may be driven by the strong effect we found from our variable ‘Stockholm city centre’. This would be interesting to investigate in the ‘urban’ regions of Gothenburg and Malmo.

Even though we to some extent deviate from Ahmed and Hammarstedt (2007) on our full dataset, we can conclude that outside the city centre, the discrimination effects towards Arabic sounding names are dramatically larger. Our result is in

line with those in Ahmed and Hammarstedt (2007), except the new finding that outside the city centre, our applicant with the Arabic female sounding name does worse than our one with Arabic male sounding name. As earlier mentioned, the results in this paper have low external relevance since the experiment is carried through in the housing market of Stockholm that in several ways differ from the rest of the country. For further research, besides more empirical studies in for example Gothenburg and Malmo it would be interesting to change the applicants' characteristics for example: exclude or change the level of education, use 'bad' language in the application letter, or change the applicants' type of occupation.

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Appendix A (alphabetic order)

Application letters: When applying or more accurately responding to the landlords' ads the norm is to provide a short description of yourself and in this case your email address and cell number. Since we still want to maximize the respond frequency and are aware that in Stockholm, the housing market is very competitive we chose to formulate them as following: (translated)

> Hi my name is Xxxx Xxxx and I am 29 years old. I am a newly graduated Master of engineering and have now been offered a firm duty in Stockholm. My finances are in good order and the salary is 31 0000 SEK a month concerning my new duty. I would rather sign a contract for a longer time but a shorter period is also of interest. Deposition is of course ok. I have no children or pets and I do not smoke. Of course, references can be sent on request. I can be reached via mail: xxxx.x.xxxx@gmail.com or on 073xxxxxxx
> Yours sincerely Xxxx Xxxx

Note that the only differences between the applicants' letters are the names.

Area codes:

Table A1. Description of area codes.

Area code	Belonging to Stockholm municipality
1. Botkyrka	0
2. Danderyd	0
3. Haninge	0
4. Huddinge	0
5. Järfälla	0
6. Lidingö	0
7. Nacka	0
8. Norrtälje	0
9. Nynäshamn	0
10. Sala	0
11. Sigtuna	0
12. Sollentuna	0
13. Solna	0
14. Sundbyberg	0
15. Södertälje	0
16. Tyresö	0
17. Täby	0
18. Upplands Väsby	0
19. Upplands Bro	0
20. Vallentuna	0
21. Värmdö	0
22. Österåker	0
23. Bromma	1
24. Enskede/ Årsta/ Skarpnäck	1
25. Hägersten/ Liljeholmen	1
26. Katarina/ Sofia	1
27. Kista/ Hässelby/ Vällingby/ Spånga	1
28. Kungsholmen	1
29. Maria/ Gamla Stan/ Högalid	1
30. Skärholmen/ Bredäng	1
31. Vasastan/ Norrmalm	1
32. Älvsjö/ Farsta/ Vantör	1
33. Östermalm/ Djurgården	1
34. Ekerö	0
35. Waxholm	0

Fictitious applicants: Because of the purpose of the field experiment the choice of names was essential, two typical Swedish names and two typical Arabic sounding names that clearly indicated the gender of the applicants was needed. To name them correctly, name frequency data from Sweden's Central Office of Statistics was used (2010-02-14) at www.scb.se

Since the experiment's participants were private persons and the majority were renting out there home or part of their home, we can assume that details affected the response frequency. Therefore, both the first and last names were written in the e-mail addresses. The middle-name letter in the mail addresses were added because of G-mail's availability of mail addresses at that particular time. Also, four cell phones with pre-paid cards were used and always switched on.

Table A2. Fictitious applicants.

Name	**Gender**	**Ethnicity**	**Email address**
1. Eva Johansson	Female	Swedish	eva.p.johansson@gmail.com
2. Ahmad Mohammad	Arab/Muslim	Male	ahmad.o.mohammad@gmail.com
3. Fatima Abbas	Arab/Muslim	Female	fatima.j.abbas@gmail.com
4. Erik Andersson	Swedish	Male	erik.p.andersson@gmail.com

Housing units: The applicants' profiles were designed to fit the ads as good as possible as well as maximizing the reply frequency, why housing units were not applied for if:

The rent per month was higher than 12 000 SEK
The landlords explicitly stated that only a certain gender could apply
The rent period in question was shorter than one month
A company advertised the ad or the advertiser was hired to find a tenant
Contact was only accepted by phone
The housing unit had been applied for earlier
The housing unit was larger than 2,5 rooms
The housing unit was located outside Stockholm County
The ad was only written in another language than Swedish

Measuring replies: The majority of the replies via e-mail had an active link attached to the ad in question. If not, or when receiving calls, a few questions could be asked about the housing unit making it easy to track down the object with the earlier registered variables. As mentioned earlier, we choose to interpret

a landlord's reply by telephone contact as positive, when the female applicants 'received' calls the authors acted as a relative. Mail answers saying that 'the vacant housing already is occupied' or that 'we have noticed your application' were not counted as positive answers.

Registering the data and applying: The field experiment was carried out between 2010-03-03 and 2010-05-09. We have applied virtually every ad that has been published on Blocket.se that lives up to the above stated criteria's. The experiment was executed as a random sample test which means that the search started with applicant number one followed by number two and so on. Due to the low reply rate we chose to intensify our applications schemes, this resulted in three search schemes being used during the search period.

Table A3. Search scheme

Scheme	**Application number**	**Reply rate**
Once a week	1-655	8,7%
Twice a week	656-766	17%
Every day	767-1310	18,7%

The routines when registering the data made it possible to 'clean' the data afterwards and simply erase housing units that were marked as 'uncertain' since a copy of every ad was saved. Measures have been taken to not apply the same ad twice, since a pay service at Blocket.se make ads always occur at the top of the page as if it was published the same day. When registering the data the following variables were taken into consideration:

Table A4. Description of data.

Variable	Description
ID	Copy of applied ad, 1,2,3…
Reply positive	Positive reply from landlord, 1=yes, 0=no (either by mail or phone)
Male applicant	1=yes, 0=no
Applicant with Arabic name	1=yes, 0=no
Applicant with Swedish name	1=yes, 0=no
Stated rent	Monthly rent in SEK stated in ad
Housing unit is an apartment	1=apartment, 0= house
Number of rooms	Number of rooms in the housing object, 1-2,5 rooms
Landlord looking for room mate	If share housing or the object is a rental part, 1=yes, 0=no
Stockholm city centre	If the object is sited in Stockholm city centre, Kungsholmen, Maria/ Gamla Stan/ Högalid, Vasastan/ Norrmalm, Älvsjö/ Farsta/ Vantör Stockholm municipality, Östermalm/ Djurgården, 1=yes, 0=no
Area	Code for neighborhood or municipality, see appendix A for details
Landlord with Arabic name	The landlord's name, 1=yes, 0=no, empty=NA
Landlord with Swedish name	1=yes, 0=no
Male landlord	Gender of landlord, 1=yes, 0=no, empty=NA
Size of housing unit (sqm)	The size of the housing unit in square meters.

The variables above are somewhat arbitrary. Since several of the above variables in the ads are not required by Blocket.se to be filled in by the advertiser, they all were registered according to the availability. We have done our best to interpret the information given by the landlords. With this said, there is some room for errors. When registering the data, we can have misinterpreted or mistyped, also variables such as names can easily have belonged to a different group than we interpreted them into. Due to these or other uncertainties 97 observations have been erased.