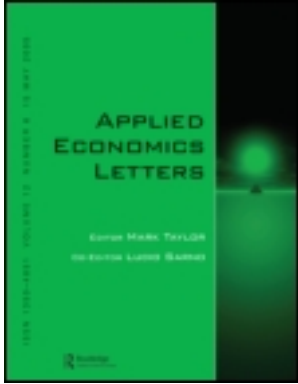


This article was downloaded by: [Montana State University Bozeman]

On: 13 October 2011, At: 12:49

Publisher: Routledge

Informa Ltd Registered in England and Wales Registered Number: 1072954 Registered office: Mortimer House, 37-41 Mortimer Street, London W1T 3JH, UK



Applied Economics Letters

Publication details, including instructions for authors and subscription information:

<http://www.tandfonline.com/loi/rael20>

Gender and ethnic discrimination in the rental housing market

Ragnar Bengtsson^a, Ellis Iverman^a & Björn Tyrefors Hinnerich^{a b}

^a Department of Economics, Stockholm University, SE-106 91, Stockholm, Sweden

^b School of Economics and Management, Aarhus University, DK-8000, Aarhus C, Denmark

Available online: 24 Jun 2011

To cite this article: Ragnar Bengtsson, Ellis Iverman & Björn Tyrefors Hinnerich (2012): Gender and ethnic discrimination in the rental housing market, *Applied Economics Letters*, 19:1, 1-5

To link to this article: <http://dx.doi.org/10.1080/13504851.2011.564125>

PLEASE SCROLL DOWN FOR ARTICLE

Full terms and conditions of use: <http://www.tandfonline.com/page/terms-and-conditions>

This article may be used for research, teaching, and private study purposes. Any substantial or systematic reproduction, redistribution, reselling, loan, sub-licensing, systematic supply, or distribution in any form to anyone is expressly forbidden.

The publisher does not give any warranty express or implied or make any representation that the contents will be complete or accurate or up to date. The accuracy of any instructions, formulae, and drug doses should be independently verified with primary sources. The publisher shall not be liable for any loss, actions, claims, proceedings, demand, or costs or damages whatsoever or howsoever caused arising directly or indirectly in connection with or arising out of the use of this material.

Gender and ethnic discrimination in the rental housing market

Ragnar Bengtsson^a, Ellis Iverman^a and Björn Tyrefors Hinnerich^{a,b,*}

^a*Department of Economics, Stockholm University, SE-106 91 Stockholm, Sweden*

^b*School of Economics and Management, Aarhus University, DK-8000 Aarhus C, Denmark*

We use a field experiment to measure discrimination in the housing market in Stockholm. Four fictitious persons, of different gender, with distinct-sounding Arabic or Swedish names, are randomly assigned to vacant apartments. We extend the study by Ahmed and Hammarstedt (2008). There are two new results. First, we provide evidence that there is no or little gender premium for the female with the Arabic name, which suggests that ethnic discrimination dominates the effects of gender. Second, discriminatory behaviour is only found in the suburbs or satellite cities/towns of Stockholm County not in the densely populated, affluent, city centre. Moreover, we can replicate that there is a gender premium for females with Swedish names. However, we are not able to confirm that males with Arabic names face discrimination.

Keywords: discrimination; field experiment; housing market; Internet

JEL Classification: J71; R21

I. Introduction

Sweden has a large and increasing immigrant population. According to Statistics Sweden, approximately 18.5% of the Swedish population had foreign background in 2009. About 20% of the immigrants originate from the Middle East or Northern Africa (Ahmed and Hammarstedt, 2008). Moreover, the immigrant population has a significantly higher unemployment level than the native population (Statistics Sweden, 2008). Evidence of discrimination associated with typical black names or nationalities has emerged in other Swedish and international studies.¹ This study is closely related to two earlier studies using an Internet platform.

In the study by Ahmed and Hammerstedt (2008), the applicants were two Swedes, one of each gender, and a male with an Arabic/Muslim name. The results show that the male with the Arabic/Muslim name received worse treatment than the Swedish man and that the Swedish woman enjoyed a gender premium. The reply rate and discrimination effect was lower if the housing unit was located in the metropolitan areas. Moreover, Ahmed *et al.* (2010) shows that the discrimination effect is unaffected by increased information.

We argue that ethnic discrimination in the housing market is of economic importance for at least three reasons.² First, if immigrants find it difficult to find a rental apartment, then this affects labour mobility,

*Corresponding author. E-mail: bjorn.hinnerich@ne.su.se

¹ Similar methodology has previously been used to detect ethnic or racial discrimination in economics: for instance, by Bertrand and Mullainathan (2004) in the labour market, Yinger (1986), Ahmed and Hammarstedt (2008) and Ahmed *et al.* (2010) in the housing market and Hinnerich *et al.* (2011) in the education system.

² Ethnicity is by nature multidimensional. We define ethnicity based only on distinct names but are aware of this weakness.

and consequently, employment and welfare decrease for this group (Hardman and Ioannides, 1999). Second, discrimination could result in immigrants having to reside in less attractive neighbourhoods. This might limit the spillover of country-specific skills. Third, neighbourhood effects have been shown to be important in explaining the success that children enjoy later in life (Angrist and Lang, 2004).

Ideally, to detect discrimination, we need to observe the same person twice and simultaneously vary one of the person's characteristics. Differences in treatment can be attributed to discrimination. To create an experiment that approximates this ideal, fictitious applicants have been used for random Internet applications for housing units.³

Our main contribution is twofold. First, we provide evidence that there is no or little gender premium for the Arabic-named female. The probability of her receiving a reply is 6 percentage points lower than that of the female with the Swedish name, suggesting ethnic discrimination. Second, differential treatment based on ethnicity or gender is only found in the suburbs or in satellite cities of Stockholm County.

Section II provides background information regarding the housing market in Stockholm and presents the empirical strategy and data. Section III presents the main results. Section IV presents the conclusions.

II. Background, Methodology and Data

Recently in the larger cities in Sweden, much of the housing market has shifted towards the Internet. Stockholm is an expanding region, and the population in the county of Stockholm is roughly 2 million. The county has 26 municipalities, of which the city of Stockholm has most inhabitants (roughly 800 000). Of those, 300 000 live in the densely populated city centre. Stockholm is suffering from a shortage of housing units in the primary rental market. The imbalances in the market are typically attributed to rent control, slow construction processes and a distorted tax system. Overall, these characteristics have created an extensive second-hand Internet market of housing.

According to the figures from the Stockholm Office of Research and Statistics and Statistics Sweden from 2009, the differences between the socioeconomic characteristics of Stockholm's city centre and the county of Stockholm are significant. For example, the share of people with

some college education or more is 65% in the city centre, whereas it is around 48% on average in the county. Naturally, income is significantly higher in the centre. Moreover, in the city centre only 18% are immigrants, whereas in the county, that figure is around 25%.

To measure discrimination in the housing market, we use the largest Internet buy and sell site in Sweden (www.blocket.se). Four fictitious applicants were used, two Swedes and two Arabs/Muslims, with typical names that clearly indicated their gender.⁴ Each was given a cell phone number registered at www.eniro.se.⁵ No addresses were registered because a person's current residential community may signal social class. The application letters consisted of short personal descriptions with cell phone numbers attached (the answering machine was used), and they were identical except for the names used. The housing units applied for met certain reasonable criteria based on the applicants' profiles.

In measuring replies, we registered them as positive if the response indicated that the landlord wanted to have further contact. The research ethics associated with this kind of field experiment must be taken seriously. We minimized the costs to participating advertisers by turning down offers within 48 hours.

Table 1 shows the descriptive statistics. Only 13.6% of the applications yielded a reply. Nonshared housing is more expensive than shared housing, and about one-fourth of the ads were for apartments in the city centre. Most landlords had Swedish-sounding names.

Because we have randomized the applicants' names and kept all other information constant, the following baseline model should yield unbiased estimates of the different relative response rates for the different groups:

Table 1. Summary statistics

Variable	Mean	SD	<i>N</i>
Reply (positive = 1, 0 otherwise)	0.136	0.343	1213
Swedish applicant (Swedish name = 1, 0 otherwise)	0.500	0.500	1213
Male applicant (male = 1, 0 otherwise)	0.496	0.500	1213
Rent	5319	2045	1200
Size of housing unit (m ²)	39.19	18.82	1063
Number of rooms	1.395	0.507	1208
Shared housing (shared = 1, 0 otherwise)	0.390	0.488	1211
Area (city centre = 1, 0 otherwise)	0.232	0.422	1213
Landlord name (Swedish = 1, 0 otherwise)	0.636	0.481	1127

³ Based on this empirical set-up, the observed discrimination effect might operate through other indirect channels (e.g. religion) if names are correlated with other unobserved factors. See Bertrand and Mullainathan (2004) for a discussion.

⁴ For more detailed information see the Appendix.

⁵ www.eniro.se is the company in Sweden in which the majority of the Swedish citizens' phone numbers are registered.

$$\text{Reply}_i = \alpha + \lambda \text{Swede_male}_i + \delta \text{Arabic_male}_i + \beta \text{Arabic_female}_i + u_i$$

where *Reply* is as defined in Table 1 and the explanatory variables are dummies for three of the four distinct groups.⁶ The female with a Swedish-sounding name serves as our comparison group. In line with Ahmed and Hammarstedt (2008), we expect $\delta < \lambda < 0$. That is, the Swedish-named female should enjoy a premium, and the Arabic male should get fewer offers than the Swedish male. If the female with the Arabic name also experienced a gender premium, we expect $\beta > \delta$.

III. Results

In our baseline specification with no controls (Column 1, Table 2), Swedish females experience a premium; the probability of a positive reply is 8.7 percentage points higher than for the Swedish-named male. However, we cannot reject that the coefficients for the Arabic and Swedish males are equal, indicating that there is no ethnic discrimination for men. These results are inconsistent with those by Ahmed and Hammarstedt (2008). Nevertheless, the Arabic female receives 6.1% fewer replies than the Swedish female, which indicates ethnic discrimination against the former. However, we cannot reject that the Arabic female is treated differently from the men in both ethnic groups, even though the difference in point estimates indicates a small gender premium of around 2.5 percentage points. Thus, we find evidence of a female premium only if the female has a Swedish-sounding name. Females with Arabic names suffer from ethnic

discrimination. Adding controls sequentially in Columns 2–6, we see no major changes in the key estimates.

It is interesting to divide the sample according to the following distinctions: whether the contract is in the city centre, whether the contract is for shared housing and whether the landlord has a Swedish-sounding name. We might expect heterogeneous effects along these dimensions. For example, the share of immigrants is lower in the city centre, but the education level is higher. These two factors could influence discrimination in different ways. We divide the sample into two regions: the city centre and the rest of the county. Moreover, shared housing could induce a higher discrimination estimate if ‘not in my backyard’ effects exist, although shared housing might also face lower demand, potentially weakening the discrimination effect. Lastly, discrimination might be at work between ethnic groups, motivating further division. Table 3 presents the results.

Interestingly, the results in Column 1 show that landlords in the city centre do not show discriminatory behaviour towards Swedish males or Arabic-named individuals. Thus, it would seem that the results listed in Table 2 are driven by the sub-sample of suburbs and satellite cities/towns. Again, there is a small gender premium for the Arabic female, but the difference is not statistically significant. In the sub-sample for shared housing (Column 3) the point estimates retain the same ranking as in the baseline scenario but are both larger in absolute terms, and the differences are larger, which could indicate that ‘not in my backyard effects’ dominate other demand effects. In the last two columns, we see that there is greater discrimination against males and Arabic females in the sub-sample in

Table 2. The effects of gender and ethnicity on the probability of getting a positive response

	(1)		(2)		(3)		(4)		(5)	
	Estimate	(SE)	Estimate	(SE)	Estimate	(SE)	Estimate	(SE)	Estimate	(SE)
<i>Swede_male</i>	-0.087***	(0.029)	-0.087***	(0.029)	-0.087***	(0.029)	-0.077**	(0.030)	-0.082***	(0.030)
<i>Arabic_male</i>	-0.085***	(0.029)	-0.085***	(0.029)	-0.086***	(0.029)	-0.087***	(0.030)	-0.086***	(0.030)
<i>Arabic_female</i>	-0.061**	(0.030)	-0.060**	(0.030)	-0.061**	(0.030)	-0.054*	(0.031)	-0.057*	(0.031)
Stockholm municipality			-0.025	(0.020)	-0.021	(0.020)	-0.024	(0.021)	-0.031	(0.022)
Roommate					0.029	(0.021)	0.027	(0.022)	0.056**	(0.028)
<i>Swede_landlord</i>							-0.016	(0.022)	-0.014	(0.022)
Rent									0.000*	(0.000)
Observations	1213		1207		1206		1121		1110	
R^2	0.011		0.012		0.013		0.013		0.015	

Notes: Robust SEs in parentheses. A constant is always included. *, ** and *** Significant at 10%, 5% and 1% levels, respectively.

⁶ We use a linear probability model Ordinary Least Squares (OLS). A probit estimator yields similar results.

Table 3. The effects of gender and ethnicity on the probability of getting a positive response in different sub-samples

	(1)	(2)	(3)	(4)	(5)	(6)
	City centre	Suburbs and satellite cities	Room mate	Own apartment	Swedish landlord	Not Swedish landlord
	Estimate (SE)	Estimate (SE)	Estimate (SE)	Estimate (SE)	Estimate (SE)	Estimate (SE)
<i>Swede_male</i>	-0.025 (0.044)	-0.106*** (0.035)	-0.110** (0.051)	-0.073** (0.034)	-0.081** (0.037)	-0.068 (0.051)
<i>Arabic_male</i>	0.033 (0.053)	-0.120*** (0.033)	-0.148*** (0.047)	-0.045 (0.036)	-0.095*** (0.036)	-0.066 (0.051)
<i>Arabic_female</i>	0.074 (0.055)	-0.101*** (0.035)	-0.092* (0.051)	-0.043 (0.036)	-0.082** (0.038)	-0.010 (0.053)
Observations	270	943	472	739	717	410
R^2	0.015	0.019	0.023	0.006	0.013	0.008

Notes: Robust SEs in parentheses. A constant is always included.

*, ** and *** Significant at 10%, 5% and 1% levels, respectively.

which the landlords have Swedish names. Interestingly, in the sub-sample in which the landlords do not have Swedish names, there is very little ethnic discrimination found against females with Arabic names, suggesting that the gender premium may be the only effect at work when ethnic groups face a landlord whose ethnicity they share or who is, at the least, not Swedish.

IV. Conclusions

This study shows that females with Arabic names are discriminated against in the housing market in Stockholm. Moreover, we can confirm that Swedish females experience a premium on the market; however, we have been unable to replicate findings indicating that males with Arabic names face discrimination. Interestingly, there is little to no evidence of differential treatment based on gender or ethnicity in the affluent, more homogeneous and educated city centre. To investigate which of the characteristics of a city centre are driving the different responses would be a natural step for future research.

References

- Ahmed, A. M., Andersson, L. and Hammarstedt, M. (2010) Can discrimination in the housing market be reduced by increasing the information about the applicants?, *Land Economics*, **86**, 79–90.
- Ahmed, A. M. and Hammarstedt, M. (2008) Discrimination in the rental housing market, *Journal of Urban Economics*, **64**, 362–72.
- Angrist, J. and Lang, K. (2004) Does school integration generate peer effects? Evidence from Boston's METCO program, *American Economic Review*, **94**, 1613–34.
- Bertrand, M. and Mullainathan, S. (2004) Are Emily and Greg more employable than Lakisha and Jamal? A field experiment on labor market discrimination, *American Economic Review*, **94**, 991–1013.
- Hardman, A. M. and Ioannides, Y. M. (1999) Residential mobility and the housing market in a two-sector neoclassical growth model, *Scandinavian Journal of Economics*, **101**, 315–35.
- Hinnerich, B. T., Höglin, E. and Johannesson, M. (2011) Ethnic discrimination in high school grading: evidence from a field experiment, Unpublished Paper, *mimeo*, Stockholm School of Economics, Stockholm.
- Statistics Sweden (2008) Statistiska Meddelanden AM 12 SM 0801.
- Yinger, J. (1986) Measuring racial discrimination with fair housing audits: caught in the act, *American Economic Review*, **76**, 881–93.

Appendix*Application letters (our translation)*⁷

Hi, my name is Xxxx, and I am 29 years old. I am a new graduate with a Masters of Engineering and have now been offered a position in Stockholm. My finances are in good order, and my new salary is 31 0000 SEK per month. I would rather sign a contract for a longer period of time but would also consider a shorter contract. Deposit 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 at xxxx.x.xxxx@gmail.com or at 073xxxxxxx

Yours sincerely, Xxxx

Fictitious applicants

Two typical Swedish names and two typical Arabic-sounding names that clearly indicated the gender of the applicants were required. We used name frequency data from Statistics Sweden and the results are presented in Table A1.

Selection of housing units

We did not apply for the housing units if the rent per month was higher than 12 000 SEK, if the unit was larger than 2.5 rooms or if the rental period was shorter than a month, if the housing unit was located outside Stockholm County. We also did not apply if the landlords explicitly stated that only a person of a certain gender could apply, if they only desired contact by phone or if they used other languages than Swedish in their postings. Lastly, we only considered noncompany advertisements.

Randomization of applicants

The field experiment was carried out between 3 March 2010 and 9 May 2010. During every search, the home page generates a list according to the criteria above. To randomly assign applicants, we started with applicant number 1 in Table A1, then moved on to applicant number 2 and so on. We started to do our search and applications once a week, but due to the low reply rate, we chose to speed up our timeline. Thus, our sample consists mainly of searches done once a week or every day (Table A2). The analyses remain the same when adding controls for search intensity.

Table A1. Fictitious applicants

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

Table A2. Search intensity

Scheme	Application id	Reply rate (%)
Once a week	1–655	8.7
Twice a week	656–766	17
Every day	767–1310	18.7

⁷ For details contact corresponding author.