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A field experiment test for the existence of ethnic
discrimination in the hiring process*

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What's in a name? - A field experiment test for the existence of ethnic discrimination in the hiring process

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Abstract

This paper provides evidence of extensive ethnic discrimination in the Swedish labour market. A field experiment (correspondence test) that tests employer discrimination has been performed. Pairs of equally merited applications has been sent to job openings, one with a Swedish sounding name and one with a foreign sounding name. Discrimination is measured by documenting the existence of an ethnic difference in call-backs. The results indicate that there is discrimination in all of the occupations that were tested in the experiment, but that the extent of the ethnic discrimination differs between the occupations. An attempt is also made to explain the results applying the theories of statistical discrimination and social distance.

JEL Classification: J15, J71

Key words: ethnic discrimination in the labour market, statistical discrimination, social distance, field experiment, correspondence test

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Introduction¹

The Swedish labour force has undergone major demographic changes during the past 60 years. One of these changes involves migration. After the Second World War, Sweden became a country with a migration surplus, i.e. there were more people that immigrated to Sweden than there were people emigrating. Today, more than one million of Sweden's nine million inhabitants are foreign born. An important challenge for the Swedish integration politics has been to provide people with equal opportunities to compete in the labour market. This challenge does not seem to have been met successfully; the unemployment rates for the foreign born population are much higher than for the native population. In 2006, the unemployment rate for the native population was 4.2 percent and 10.6 percent for the foreign born population (Statistics Sweden; Labour Force Survey 2006:75). Furthermore, the employment gap seems to be widening – the differences are larger now than they were 30 years ago (Arai et al 1999:7).

Some believe that systematic labour market inequalities exist between natives and immigrants because immigrants suffer from discrimination in hiring and in the setting of wages. Others explain the ethnic inequalities in the labour market by referring to systematic productivity-relevant differences in individual characteristics between the ethnic majority and the ethnic minority, such as differences in (country specific) human capital. The Confederation of Swedish Enterprise presented a report recently where the author argued along these lines (Rezania 2007). But although such systematic differences exist to a certain extent, most researchers agree that they fail to account for all of the inequalities observed between native and foreign born in the Swedish labour market (see for instance Arai et al 1999; le Grand & Szulkin 2002; Knocke et al 2003; Rydgren 2004).

In order to understand why foreign born people are not doing as well as natives in the labour market, it seems necessary to study not only the individuals who are or are not employed, but the decisions of the people who employ as well. Consequently, the focus of this paper is the

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employers. Can employer discrimination explain differences in employment rates between natives and immigrants?

There is research that indicates that there is discrimination in the Swedish labour market (Ahmed 2003; Rydgren 2004), and that therefore at least a part of the unexplained unemployment gap that remains after controlling for productivity relevant differences between natives and foreign born exists because of discrimination. Still, the question of the existence and the extent of ethnic discrimination have not been settled in the Swedish research community in the way that it has been in the research communities of many other countries. The problem has been that it is hard to *prove* the existence of discrimination convincingly with (for the research community) established methods such as analyses of conventional labour market data. There is always the possibility that some unobserved productivity relevant variable could explain the remaining difference in employment between natives and foreign born. Most researchers in the field agree that field experiments are the only way to really provide evidence for hiring discrimination; but Swedish social scientists have not performed field experiments that test for discrimination until recently. This study is one of the first contributions to the documentation of ethnic discrimination in the Swedish labour market using experimental data (see also Carlsson & Rooth 2006; Taran 2007).

The data of this study come from a field experiment. It is a *correspondence test*, which tests for discrimination in *job interview offers* comparing the call-back rates for fictitious job applications with Swedish sounding names and foreign sounding names.

The immigration history of Sweden

The first wave of immigrants (in modern times) came to Sweden during the end of the Second World War. Most of them were refugees from Germany and the Baltic region. During the economic boom of the post war period there was a lack of labour in the Swedish market and many immigrants came to Sweden to work. They came mainly from the Nordic region and from eastern and southern Europe. The booming economy made it relatively easy for immigrants to settle in Sweden and many of the labour immigrants chose to stay. When the prosperous times of the 1950s and 1960s came to an end, immigration was again dominated by refugees (mainly from South America, the Middle East and Africa) and by the relatives of immigrants already residing in Sweden (Nilsson 2004:24). Some researches suggest that structural changes in the labour market has (among other things) made language skills more

important (Ekberg & Gustafsson 1995; Broomé & Bäcklund 1998). Therefore, the new immigrants had a more difficult time competing for jobs with the ethnic Swedes and with the immigrants that had arrived during the 1950s and 1960s that were already established in the labour market. The structural changes combined with less job opportunities made the integration process a completely different story for the refugees. During the economic boom, the employment rates were on the same level for immigrants and natives. But during the 1970s and the 1980s an employment gap emerged. During the deep economic crisis of the 1990s, the immigrants suffered the hardest in terms of unemployment. While the unemployment rate rose from 1.4 percent in 1989 to 8.1 percent in 1996 for the native population, the unemployment rate for the immigrant population rose from 3.4 to 17.2 percent (Behtoui 1999:41). Today, the crisis is in the past and the labour market is presently booming, but the unemployment gap remains. The unemployment rate is 4.2 percent for the native population and 10.6 for the foreign born.

Previous Research on field experiments and ethnic discrimination

The inequalities between natives and immigrants in the Swedish labour market have been well documented (see for instance le Grand 1991, Persson & Jonung 1998; Arai & Vilhelmsson 2001; le Grand & Szulkin 2002). But as mentioned above, it has been hard to convincingly prove that these inequalities are a result of discrimination. i) Conventional multivariate techniques such as analyses of labour market register data or surveys can only suggest that there are unexplained inequalities in employment and wages between natives and immigrants. ii) Another way to approach the issue of discrimination has been to ask employers if they have priors against immigrants. But research suggests that there is a discrepancy between what employers claim about their behaviour when discrimination is concerned and their actual hiring decisions (Firth 1981; Pager & Quilian 2005). Since discrimination is such a sensitive issue, it is not likely that employers that discriminate would be sincere about their attitudes when interviewed by a researcher. The same goes for vignette-studies and other studies where employers are asked to make hypothetical hiring decisions. iii) Another approach has been to ask the representatives of the ethnic minority if they think that they have been exposed to discriminatory behaviour on behalf of employers. But they may either over- or underestimate the extent of discrimination that they have been subject to. In field experiments where testers have been involved, the minority testers have many times been shocked when realising the extent of the discrimination that they are being subject to (Swedish Integration Board; 2004:31). iv) Laboratory experiments are another possible approach. But they are performed

in settings that are far from realistic, which raises the question on whether results from these experiments would correspond to actual behaviour in hiring decisions. Since neither conventional data nor interviews with employers or minorities or laboratory experiments can provide the data necessary to test discrimination, field experiments, testing discrimination in natural settings, have lately been regarded as the only reliable technique available for testing discrimination.

There are two main field experiment techniques used for testing ethnic discrimination, *situation testing* (or *audit testing* as it is called in the US), and *correspondence testing*. In situation testing, hired testers, one from a minority group and one from the majority group, test for discrimination by applying for the same jobs. Typically, testers are recruited in pairs that resemble each other in physical appearance (age, height, weight etc.). The testers are carefully trained to perform in similar ways during the job seeking process. Situation-testing tests mainly for discrimination in *job offers*, but it can be designed to account for discrimination during the entire job seeking process; i) in whether the job seekers are encouraged to apply for the job when inquiring about a job opening, ii) if they are contacted for an interview after applying for the job in writing, iii) if they are offered a job, iv) and for differences in the wages offered. The first situation test was performed in England by sociologist W.W. Daniel in 1968. Since then situation tests testing discrimination have been performed in many countries, documenting the existence of discrimination wherever the experiments have been performed; in England (see for instance; McIntosh & Smith 1974; Brown & Gay 1985), the United States (see for instance Turner et al 1991, Nunes & Seligman 1999, 2000, Pager & Quilian 2005), and Canada (Henry & Ginzberg 1985). The International Labour Office has performed several situation tests in Europe: in Holland (Bovenkerk et al 1995), Belgium (Arriijn et al 1998), Italy (Allasino et al 2004) Germany and Spain (Zegers de Neijl 2000), and Sweden (Taran 2007).

But the situation testing technique has been criticized for methodological weaknesses and for overstating discrimination. Some researchers have questioned the possibility to match testers to make a similar appearance in all relevant aspects. There is also a risk that the minority applicant, consciously or unconsciously, may be motivated to prove the existence of discrimination by performing worse and thereby biasing the results. Instead, several researchers have used the correspondence testing technique which faces less methodological challenges than situation testing (Ward 1969:220; Riach & Rich 2002: 484f).

The correspondence testing technique was also first developed in England, by Jowell and Prescott-Clarke in 1969. It has mostly been performed in Great Britain (see for instance Brown & Gay 1985; Hubbuck & Carter 1980), but also in Australia (Riach & Rich 1991) and lately in the United States (Bertrand & Mullainathan 2004). It differs from situation testing in that it does not involve individual testers. Instead, pairs of written applications are sent to job openings. Efforts are taken to make the applications similar in all relevant aspects so that the only thing that varies between the application-pairs is the characteristic that is to be tested. As soon as there is an invitation to an interview, the job seeking process for that particular application is terminated. What is measured is therefore discrimination in *job interview* offers, or in call-backs, not in actual job offers. A limitation of the correspondence test is that it only accounts for discrimination at the initial stage of the job seeking process. But the many situation tests that have been performed have shown that it is at this stage of the hiring process that about 90 percent of the discrimination takes place – in whether you are being offered a job interview or not (Riach & Rich 2002:494.² The correspondence test has several advantages compared to the situation test. The researcher is in complete control of the experiment, s/he can control the content of the applications, and unintended bias in the applications can be avoided by randomly assigning the names to applications each time they are being sent to job openings. It is also possible to include a larger variety of occupations and occupations that require academic degrees, which is difficult when using testers. It is also less expensive than the situation test and not as time consuming, so a larger number of employees can be tested. Correspondence testing, is in fact, a type of randomized experiment, and therefore provides the strongest possible opportunity to draw causal inferences.

The first scholarly performed field experiment testing for discrimination in the Swedish labour market was a situation test performed by the Swedish Board of Integration on behalf of the International Labour Organisation in 2005-2006.³ Carlsson & Rooth published results from a correspondence test in 2007 and Eriksson & Lagerström (2007) have tested for whether applications with foreign sounding names are contacted less frequently by employers on an internet based web site where applicants are looking for jobs passively by displaying their

² Since situation tests for practical reasons are only performed in occupations with low qualifications, it is not known whether this holds for occupations that require academic degrees as well.

³ A correspondence test testing for discrimination in job interview offers was performed by a newspaper, *Dagens Nyheter*, in 2005.

CV's on the job site. The results of these experiments suggest the existence of ethnic discrimination in the Swedish labour market.

Theories of labour market discrimination

The theory of *statistical discrimination* (Phelps 1972) aims to explain why it may be that even employers who are not prejudiced discriminate. An employer that receives many job applications faces a problem – it is too time consuming to retrieve information enough about all the applicants to make an informed decision on who is most suitable for the job. S/he needs some criteria to screen out less suitable applicants right away. So, s/he ascribes characteristics to the applicants that relate to groups that the applicants seem to belong to. “Skin colour, or sex, is taken as a proxy for relevant data not sampled” (Phelps 1972:659).

There are different models of statistical discrimination. One model elaborates the idea that group average productivity is known to the employer and that individuals from groups that on average are more productive will be preferred (Arrow 1972; 66f; Phelps 1972: 60). To illustrate, imagine an employer on a magazine that is in the process of hiring a new journalist. He receives more applications than he is able to read. Since it is vital for a journalist to master the language perfectly, at least in writing, he screens out all applications with foreign sounding names. Since many immigrants have arrived to Sweden rather recently, it is a good guess that applicants with Swedish sounding names, *on average*, write better in Swedish than applicants with foreign sounding names. Therefore, the native group can be said to be on average more productive for this particular job. He may also screen out all applicants with female names, since women on average take more responsibility for the family than do men. And all other things equal, he prefers an employee whose main commitment is to the job. Being fully aware of the fact that the best applicant may very well be female and/or a person with a foreign sounding name, there will be applicants who are qualified enough in the pool of applications with male Swedish sounding names. It may be that the employer fails to hire the best employee every now and then using this technique, but for an employer who hires on a regular basis, statistical discrimination is an efficient trade-off between input and output i.e. the recruitment of a productive employee. So the employer discriminates even though he has no issues with hiring immigrants and women per se.

Another model of statistical discrimination focuses on variances in productivity. Two groups may have the same average productivity where one group has a productivity distribution with

a larger variance than the other group. An employer that is risk averse would in this case prefer individuals from the group with a smaller variance (Aigner & Cain 1977; Phelps 1972). To me it seems that the average model seems more appropriate than the variance model in the case of ethnic discrimination because of relevant language skills.

A sub set of the statistical discrimination theory is the error discrimination approach (England 1992). Some theorists include erroneous beliefs about productivity differences within the frames of statistical discrimination. England makes a distinction between statistical discrimination and *error discrimination* which is discrimination due to erroneous beliefs about differences in productivity. For instance, some researchers believe that immigrants have less human capital than do natives, especially when it comes to education. But there is no substantive support for this hypothesis in the case of Sweden (Arai et al 1999). Still it may be a belief among employers that this is the case. They may erroneously believe that immigrants are on average less educated, or that they have an education with a content that is unfamiliar to the employer and will therefore prefer native applicants.

Another theory that explains why employers discriminate is the theory of *social distance*. It distinguishes between social decisions and conventional economic decision-making. The former has social consequences and the latter has not (Akerlof 1997:1006). Cultural or social differences between people from different cultures, even very small and subtle differences, may make an employer prefer applicants from his/her own culture for social reasons; the employer simply feel more comfortable having people on her/his staff that abide by the same social codes as herself/himself, even though these social codes are irrelevant for work performance. To choose an applicant that is culturally similar to oneself is not a choice that is made because it is believed to maximize profit. It is made because it is believed to have positive implications for the social atmosphere at the work place. One could of course argue that there may be a positive correlation between a good social atmosphere at the work place and productivity. *But this is not why the choice is made.* It is made for social reasons. Furthermore, when prejudices at a work place prevent employers from hiring the most qualified applicant, the logic of maximizing profit is no longer working. The most profit maximizing thing to do would be to hire the best applicant and to change the attitudes of the co-workers if they have priors against this applicant. In this sense, the distinction between social decisions and economic decisions is still relevant.

Although the mechanisms behind statistical discrimination and discrimination because of social distance are different, it will be difficult to evaluate the theories with data from a correspondence test since there is only information on what the employers do, not on their motives. However, it is possible to evaluate the theories to some extent. One way to operationalise the statistical discrimination theory is to look at whether there is more discrimination in occupations where fluency in the Swedish language is important for work performance. Although sex discrimination is not the focus of this paper, it will be possible to look at differences in call-backs for men and women. A way to evaluate social distance is to look at the ethnic composition of the people at the workplace and at the ethnic background of the employers. Another way to evaluate social distance is to look at company size. It seems reasonable to believe that social relations between the employer and the employees are less important in large companies that have many people on their staff. If there is more discrimination in small companies than in large companies, this may be regarded as support for the social distance theory.

Ethical considerations

When studying individuals, it is a general rule that the individuals who are being researched upon consent to being part of the study. But when performing field experiment testing discrimination, it is vital that the subjects of investigation are not aware of the fact that they are participating in an experiment. As mentioned above, discrimination is a very sensitive issue, and it is very likely that the results would not be reliable if the employers had accepted to participate in the experiment in advance. There can therefore be no informed consent on behalf of the employers. This is obviously problematic from an ethical point of view. But according to Swedish law, research without the participant's informed consent can still be performed if the research i) is of high societal importance *and* ii) if there is no other way of getting at the information, *and* iii) if the research is of a high quality. The decision on whether a research project satisfies these criteria is made by the regional ethical vetting board. The application for this project was approved in February 2006 and is to my knowledge the only field experiment testing ethnic discrimination in Sweden that has been approved of by the board.

Methodology

Experiment Design

Between March 2006 and September 2007, job applications were sent to job openings in the Stockholm area that were advertised on Sweden's main internet employment site, "Platsbanken". The analyses below will present data from 1776 (3552 applications) of the jobs that have been applied for in 15 occupational categories. The occupational categories were chosen with the purpose of creating a sample that is representative for the Swedish labour market. It includes occupations where the majority of the labour force is either women or men, and occupations where the labour force is mixed. It has also been made sure that immigrants are represented in the labour force of the chosen occupations.⁴ The sample includes occupations that require education on different levels; from no education to tertiary education. It includes occupations in the private as well as the public sector. The employers have been able to contact the job applicants through e-mail and by the voicemail on cell phones. As soon as the employers contacted the job applicants, the job interview offer was politely declined.

Apart from testing ethnic discrimination, the individual characteristics that were being tested for in terms of chances of being offered a job interview are; sex, social background, and level of qualification). The hypothesis is that it is easier to be contacted by an employer if you are a native Swede, male, if you have a high status social background,⁵ and if you have a high-quality CV.

i) *Ethnicity* is signalled by assigning each pair of job applications one Swedish sounding name and one foreign sounding name which in this experiment means either an Arabic sounding name or a (non Muslim) name from the Horn of Africa-region. Hence, there is no information on whether the applicant is foreign born or native. The applicants have an exam from a Swedish senior high school, so the applications signal that the applicants have been living in Sweden long enough to graduate from a Swedish senior high school. The fluent Swedish language also signalizes that the applicants are born in Sweden or has been in Sweden for a long time. ii) *Sex* is tested by sending either two applications with male names (unisex names have been avoided) or two applications with female names and thereafter comparing the call-back rates for male and female applications. This means that it was not possible to test for sex discriminatory behaviour on the behalf of each employer directly like with ethnicity above.

⁴ Heckman (1998:102) criticises the reliability of field experiments arguing that field experiment cannot suggest a measure of actual discrimination if the selection of occupations tested is not the occupations where immigrants/minorities actually end up working.

⁵ The social background variable will however not be analyzed in this version of the paper.

For this to be possible, four applications per job opening would have had to be sent, two male applications with one Swedish sounding name and one foreign sounding name, and two female applications, one with a Swedish sounding name and one with a foreign sounding name. Methodologically this would have been preferable, but there were ethical arguments against such a design that was judged more important than the methodological advantages.⁶ iii) Social background was tested for by giving one of the applicants a home address in a poor neighbourhood and an exam from a senior high school in the same area, and giving the other job applicant a home address in a fashionable area with an exam from a senior high school in the same area. The addresses were randomly assigned to the applications. The addresses corresponded to existing residential blocks, but it was made sure that no person with the same name as the applicants lived there.⁷

Each job application consists of a personal letter and a CV. The personal letters were constructed by prewritten modules that were put together randomly in order to make sure that there was variation in the applications. The personal letters and the CVs were randomly matched so that different CVs were attached to the personal letters at different times. Although the personal letters and the CVs were constructed in advance, each job application was matched with the particular job opening it was being sent to. For instance, if it was written in the job advertisement that the applicant must have a driver's license, or that the applicant must have at least five years of work experience, or that an IT specialist must know how to program in Java-script, the job applications were adjusted to match the qualifications required. Addresses with a matching senior high school exam⁸, and the sex of the two

⁶ There were three issues that seemed ethically problematic with sending four applications per job opening. i) Sending four applications may bias the employer's perception of the supply of labour, especially for smaller firms that may not receive many applications. ii) Researchers that perform this kind of field experiment have already accepted the fact the employers are participating in the experiment without informed consent. But it is reasonable to minimize the efforts of the employers and making them read and respond to four fake applications instead of two may be considered pushing it a bit too far. iii) Carlsson & Rooth (2006) performed their experiment during the same period and they sent three applications to each job opening. Though we coordinated the projects in order not to apply for the same job opening, it was unavoidable that some employers received applications from both projects although they did not receive applications from both projects for the same job opening. This was also an argument for limiting the amount of applications that each employer had to read.

⁷ This means that if the employer contacts the applicant by mail only, that response is lost to the experiment. Although this probably has happened one or twice, the guess is that it has not happened frequently. In the job ads of the job site that we have been using, it is always stated *how* the employer wants the applicants to apply; by mail, email, telephone or personal visit. We have only responded to job openings where you may apply by email. Since the employers have chosen email as a way for the applicant to contact the employer, it is likely that they prefer to contact the applicant in the same way. Especially since an email is faster than posting a letter, and free of charge. Email is also a well established way of communication in Sweden these days.

⁸ There are only a few senior high schools that have programs for vocational education in the Stockholm area. Consequently, students come from all over the Stockholm area to go to these schools. Therefore it has not been

applicants were randomly assigned.⁹ Once the sex of the job seekers was determined, the names were randomly assigned to the applications. Since every step in the construction of every single application is based on randomization, the risk of a systematic bias is extremely small. The names were also changed regularly to avoid an unintentional name effect, i.e. that some names may be more popular or unpopular with the employers for reasons that have nothing to do with ethnic discrimination, thereby causing an effect that is uncontrolled for.

Summing up, each pair of job applications has been constructed to be similar in all relevant aspects such as sex, educational level, job experience etc. The only thing that differs is the ethnic background signalled with the names of the applicants.

Interpreting the results

The job site used in the experiment, “Platsbanken”, is the largest web based job site in Sweden. 70 percent of all job vacancies that are publicly announced are displayed there. But most employers use informal networks when recruiting new employees. In 2002, only between 34 – 49 percent of all new recruitments were canalized through Platsbanken (Harkman & Sahin 2003b). Hence, it cannot be ruled out that there are systematic differences between the job vacancies announced at Platsbanken and those that are not. This should be kept in mind when considering the representativeness of the results below.

There is an ongoing discussion on the interpretation of the results among researchers within the field experiment tradition. There are usually four possible outcomes; both applicants are invited to an interview, only the majority/native applicant is invited to an interview, only the minority/foreign applicant is invited, and that none of them are invited. One issue has concerned the status of the applications where none is invited to an interview. Some have treated them as cases of equal treatment, and some has treated them as missing cases. This is a very important matter since this is the most frequent outcome. How one chooses to interpret the no call-backs makes a big difference to the discrimination rates. The main argument for regarding the no call-backs as cases of equal treatment is that it is a case of *symmetrical treatment* (Cross et al., 1990:44). But Riach and Rich (2002) argue that no call-backs should

possible to match the high school with the address in these cases. This applies for the job applications for cooks, assistant nurses and carpenters/construction workers.

⁹ The sex of the applicants was not randomized for all of the job openings in some of the very male dominated job categories such as truck driving, construction work, and physically demanding store work since female applicants were judged too unrealistic. To apply with female names for these job openings would increase the risk of being exposed.

be regarded as non-observations, since there are many reasons to why applicants may be rejected before the employer even considers the ethnic background of the applicants. Furthermore, the availability of jobs will impact the number of cases where none of the applicants get a response, so that the more difficult it is for anybody to be invited to an interview, the higher the rate of equal treatment (Riach & Rich 2002:487). So, the somewhat absurd conclusion would be that the lower the call-back rates the lower the discrimination rate. And an experiment with applications of a bad quality would generate a lower discrimination rate than an experiment with application of a high quality. The interpretations of this paper will follow the recommendations of Riach & Rich above, i.e., the no call-back cases will be regarded as non-observations.

The variables

The variables of the analyses can be classified into two categories; variables that describe the employers and variables that describe the applicants. Among the latter, are the variables that were introduced in the experiment design section above: sex, ethnicity and additional merits. Social background and percent immigrants in the occupations will be included in a later version of the paper. Among the former the analyses below include company size, occupation, if the CEO of the company has a Swedish sounding or foreign sounding name, and unemployment rate per trade and month. To evaluate the theory of statistical discrimination, the binary variable *Swedish language skills* indicate whether a fluent Swedish language is important in the occupations. A fluent Swedish language has been coded as less important for the occupational positions of cooks, store men, cashiers, carpenters, drivers and cleaners. A *fluent* language does not seem vital for salesmen, assistant nurses, nurses and engineers either, although more important than for the former occupations. These positions have also been categorized as positions where fluent language is of less importance. The same goes for IT-professionals where English is often the working language. Fluent Swedish language skills seems the most important for senior/high school teachers and pre-school teachers since teaching the Swedish language is generally included in their job tasks. Language skills are also important for receptionists since it is their job to be the link between costumers and the company or the organisation they work within. The economist profession is also likely to include tasks where fluent Swedish is important, particularly written Swedish language.¹⁰

¹⁰ My categorization is of course debatable. It is made on the basis of the background research that I made about the tasks included in the different occupations in order to design the applications realistically.

Results

Is there a difference in call-backs for Swedish sounding and foreign sounding names?

The descriptive statistics in Table 1 below suggest that there is a rather large difference in call-backs between applicants with names that are Swedish sounding and names that are Arabic/African sounding in the Swedish labour market. For the 3552 jobs included in the sample presented in Table 1, the net discrimination rate is 40.3 percent and the relative call-back rate is 1.8. When giving all occupations the same weight, the net discrimination rate increases to 41.3 and the relative call-back rate to 2.1. Expressed in terms of a real job seeking situation, this means that if a person with a Swedish sounding name had to apply for say ten jobs before being contacted by an employer, a person with the same merits but with an Arabic or African sounding name has to apply 21 times to be contacted.

Table 1. Call-back rates, percent and ratios

	1) No call- back	2 Call-back for both	3) Call-back foreign name only	4) Call-back Swedish name only	5) Relative call-back rate ¹¹	6) Net dis- crimination ¹²	7) Number of applications
All applications	59.1	15.8	4.3	20.8	1.8	40.3	3552
Weighted total*	52.1	17.1	4.5	21.4	2.1	41.3	3552

* All occupations given the same weight

Is it possible to generalize the results to the entire Swedish labour market?

The result suggests a higher rate of ethnic discrimination than the recently performed situation test performed by the ILO mentioned above (Taran 2007). But comparisons are problematic when experiment designs differ. The conclusion is similar – there is extensive ethnic discrimination in the Swedish labour market. The total relative discrimination rate of 1.8 is also a much higher rate of discrimination than the equivalent measure of Carlsson & Rooth's (2007) correspondence test. They present a relative call-back rate of 1.5. This study is

¹¹ The Relative call-back rate measures all call-backs for applicants with Swedish sounding names, divided with all call-backs for applicants with foreign sounding names. Relative call-back rate = $(2+4)/(2+3)$.

¹² Net discrimination divides the difference between the call-backs where only the Swedish applicant was preferred and the call-backs where only the applicant with the foreign sounding name was preferred, divided with the sum of all call-backs. Net discrimination = $(4-3)/(2+3+4)$. The net discrimination rate is the most frequently used measure for discrimination. I prefer the relative call-back rate since I find it easier to comprehend in terms of real events.

performed with a very similar research design during an overlapping time span testing discrimination in approximately the same occupations (11 occupational categories in common). A large difference in results would be a reason to be concerned with the reliability of the both experiments. I will however argue below that the results are similar and that Carlsson & Rooth underestimate the level of discrimination in their results.

The statistics in Table 2 below illustrates how the discrimination rates differ between the occupations. While the discrimination is almost non-existent among senior/high school teachers, and not statistically significant among receptionists, the level of discrimination is strikingly high for assistant nurses and cleaners. While an applicant with a Swedish sounding name has to send say 10 applications before s/he receives a call-back, an assistant nurse with a foreign sounding name has to send 36 applications before receiving a call-back.

Table 2 Call-back rates by occupation, percentages

	No call-back	Call-back for both	Call-back foreign name only	Call-back Swedish name only	Relative call-back rate	Net discrimination rate	Number of applications
<i>Qualified Jobs</i>							
Senior/high school teachers	54.5	18.9	10.0	16.7	1.2	14.7	180
IT-professionals	47.3	27.0	3.4	22.3	1.6 [†]	35.9	296
Economists	63.9	13.5	3.4	19.3	1.9 [†]	43.9	238
Nurses	47.7	36.1	2.3	14.0	1.3 [†]	22.3	172
Pre-school teachers	21.6	44.6	5.4	28.4	1.5 [†]	29.3	148
Engineers	50.6	19.6	3.6	26.2	2.0 [†]	45.7	168
<i>Less qualified jobs</i>							
Receptionists	74.6	8.5	5.5	11.5	1.4	23.5	330
Cooks	44.1	20.7	10.8	24.3	1.4 [†]	24.2	222
Salesmen	58.1	18.3	2.7	21.0	1.9 [†]	43.6	372
Store men	70.4	8.0	4.0	17.6	2.1 [†]	45.9	250
Drivers	46.2	15.1	3.8	34.9	2.6 [†]	57.8	212
Cashiers	76.3	4.6	2.3	16.8	3.1 [†]	61.2	262
Carpenters	63.6	10.1	4.0	22.2	2.3 [†]	50.0	198
Assistant nurses	60.3	7.8	2.6	29.3	3.6 [†]	67.3	232
Cleaners	77.2	3.7	2.9	16.2	3.0 [†]	54.8	272

[†] = Significant difference in call-backs at the 95 percent confidence level using the Z-test for proportions.

Hence, what occupations that are chosen to be included in an experiment will affect the total results to a large extent. This has important methodological implications and poses problems for researchers that want to present a general discrimination rate. Since the difference between the occupations is so large it would be problematic to say for instance that “one out of four employers discriminates people with a foreign sounding name” without testing at least all

large occupational groups. For instance, an experiment testing discrimination among senior/high-school teachers and receptionists would not even produce a statistically significant difference in call-backs.

Another methodological problem worth avoiding is that the overall discrimination rate is affected by the proportion of applications that are being sent for each occupation. As mentioned above, most researchers regard no-call backs for both applicants as non-observations. This means that what the researcher is counting is call-backs, not sent applications. So, how many applications one has to send in order to get call-backs enough to achieve reliable results depends on the call-back rates. (This is one of the explanations to why the number of applications ranges from 172 - 372 in Table 2 above.) It is also the case that the larger the proportion of all applications from an occupation that has a high discrimination rate, the higher the overall discrimination rate. And there are good reasons to believe that the discrimination rate is higher in occupations where the call-back rates are low since a low call-back rate is an indicator of a low demand for labour. When the demand for labour is low, the employers can afford a discriminatory behaviour, while when the demand for labour is high, even the people at the back of the line will be employed. The methodological implication of this line of reasoning is that not only what occupations that are chosen to be included in the study will affect the results, but also the proportion of the total amount of applications that are sent for each occupation.

A rather striking example of how different the results can be depending on whether one takes this into account or not is shown in Table 1 above. The “weighted total” row is a measure of discrimination when all occupations have been assigned equal weight.¹³ The “total” row accounts for discrimination for all applications without weights. The “weighted total” produces a higher relative call-back rate, 2.1, and the “total” measure produces a call-back rate of 1.8. The higher discrimination rate for the “weighted total” confirms the pattern that occupations with high discrimination tend to have lower call-back rates.¹⁴ It is also worth noting that the same pattern holds for Carlsson & Rooth’s study. When giving equal weight to the occupations of their study, their relative call-back rate increases from 1.5 to 1.9. When calculating the relative call-backs of *this* paper for the same occupations as the ones included

¹³ The sum of all relative call-back rates for each occupation divided with the number of occupations.

¹⁴ A more accurate weight would be to relate the occupations to the proportions of the population employed in the occupational groups included in the experiment. This alternative will be considered in a later version of this paper.

in Carlsson & Rooth's study, the call-back rate is also 1.9 so the results are more similar which is reassuring for the reliability of both studies.

To conclude, it is not possible to say whether the results are typical for other occupations than the 15 occupations included in the study. The reliability of the results for the occupations chosen is high since the experiment is randomized. The tendency among some researchers to suggest a discrimination rate for the entire labour market from the results of a few occupations is problematic. In my view, it is also a bit unnecessary – it is sufficient to reveal the existence of discrimination, and to highlight the fact that there is more discrimination in some occupations than in others.

Statistical discrimination: Is the discrimination stronger in occupations where fluency in the Swedish language is important?

As mentioned above, strong discrimination in occupational positions where fluency in Swedish is important can be interpreted as support for the idea that the explanatory mechanism for ethnic discrimination is statistical discrimination. But although the results in Table 2 above indicate large differences between the occupations, the discrimination rates are not generally higher in the occupations where one would imagine that fluent Swedish would be the most important. The models in Table 3 below show the linear probability of receiving a call-back. The coefficient for foreign sounding name in model 3 suggests that a person with a foreign sounding name is on average 19 percent less likely to get a call-back compared to a person with a Swedish sounding name. The probability of receiving a call-back is generally lower for the occupations where fluency in Swedish is important. Interestingly, there is an interaction effect between having a foreign sounding name and applying for a job where fluency in Swedish is important. But the probability of receiving a call-back is actually 7 percent *higher* for this group compared to the other groups,¹⁵ a result that contradicts the theory of statistical discrimination.

Statistical discrimination: Is it easier for men than for women to get a call-back?

The results in Table 3 below show furthermore that it is as easy for female applicants to receive a call-back as it is for male applicants. The Female coefficient is extremely low and it is not statistically significant. However, male and female applications have not been sent to

¹⁵ Note that the reference group is all applicants with Swedish sounding names plus applicants with foreign sounding names applying for jobs where fluency in Swedish is less important.

the same jobs. It is still possible that an employer would have chosen a man over a woman, all other things equal. But the results of this particular study indicate no support for discrimination of women in call-backs.¹⁶ The result is intuitively plausible. There is a well documented unexplained *wage gap* between men and women in the Swedish labour market that may very well be the result of wage discrimination, but there is less reason to believe in discrimination in *hiring* decisions since there is no *sex employment gap*.¹⁷ On the contrary, women in Sweden have a slightly higher employment level than do men.

Table 3. Linear probability of receiving a call-back. Unstandardized coefficients

Call-back	Model 1	Model 2	Model 3
Foreign sounding name	-0.17**	-0.17**	-0.19**
Fluent Swedish language ¹⁸		-0.02	-0.04
Interaction effect**			0.07*
Female			0.01
Unemployed per vacancy		-0.02**	-0.02**
Constant	0.37**	0.29**	0.42**
Number of applications	3542	3542	3542

* Significant at the 5 percent level, **Significant at the 1 percent level

** Foreign sounding name*Fluent Swedish language

To conclude, the most widely held beliefs about the mechanisms behind statistical discrimination; that immigrants are discriminated against because of an average lower productivity in terms of relevant language skills and that women are discriminated against because they generally take the main responsibility for the family is not confirmed in this study.

Social distance: Is the discrimination larger in small companies?

As mentioned in the theory section above, stronger discrimination in small companies may indicate that social distance is involved as an explanatory mechanism concerning ethnic discrimination. An employer that interacts with his/her employees on a daily basis may be

¹⁶ The rates have not been weighted. There are very few applications with female names sent to job vacancies for drivers and carpenters. Both occupations have a rather high discrimination rate (see Table 2 above) so the ethnic difference call-backs between the sexes may be smaller when controlling for this.

¹⁷ There is research that suggests that women are subject to hiring discrimination when applying for the most attractive positions in the labour market. But in this study, although jobs have been applied for in occupations that require high qualifications, the vacancies to which the applications have been sent have not been vacancies for the top positions within the firms and organisations.

¹⁸ Senior/high schools teachers, preschool teachers, receptionists and economists are coded as 1, i.e. that fluent Swedish is important. Higher education is coded as 1 for occupations that require a university degree.

more inclined to let “social taste” affect his or her judgement than an employer in a larger company. In a large organisation, the one who makes the hiring decisions rarely interacts with many of the employees and may therefore be more inclined to let objective criteria like merits be decisive in the hiring process. Furthermore, large organisations are to a larger extent governed by bureaucratic or formalized rules and procedures. According to the results in Table 4 below, small companies do seem to discriminate more than the large ones when it comes to call-backs. An applicant with a foreign sounding name has to send twice as many applications to small companies in order to be invited to an interview compared to a person with a Swedish sounding name. But it is the medium size companies that have the lowest discrimination rate, so the idea that the bigger company the lower the discrimination rate does not hold. More data have to be collected; data are missing for most organisations within the public sector so there is a risk that the results presented below are biased.¹⁹

Table 4. Call-backs by company size, percent and ratios

Company size ²⁰	No call-back	Call-back for both	Call-back foreign name only	Call-back Swedish name only	Relative call-back rate	Net discrimination	Number of applications
Small Company	59.6	14.3	3.8	22.4	2.0	45.9	1074
Medium size Company	59.4	16.3	6.8	17.5	1.5	26.4	496
Large Company	58.6	15.2	3.9	20.5	1.9	42.0	494

Pearson chi2(6) = 14.4060 Pr = 0.025

Social distance: Do employers with Swedish sounding names discriminate more than employers with foreign sounding names?

According to the theory of social distance, employers would prefer applicants with a similar ethnic background as themselves. But the results of Table 5 below indicate the opposite – if the CEO of a company has a foreign sounding name, the applicants with a Swedish sounding name have a 2.4 times higher probability to receive a call-back. If the CEO has a Swedish sounding name, the probability is 1.7 times higher. A test of different proportions shows that

¹⁹ Besides controlling for occupational distribution by size, a question that needs to be addressed is the boundaries for when a company is of a small, medium and large size. When it comes to evaluating the theory of social taste, when is a company so large that the employer is not likely to have a close working relationship with his/her employees? And are there other occupation specific characteristics that could be important for the impact of social taste in hiring decisions apart from company size?

²⁰ Small company: 0-15 employed; Medium Size Company: 16 - 50 employed and Large Company: more than 51 people employed.

the difference in call-backs is statistically significant for the CEOs with a foreign sounding name.

Table 5. Call-backs by name of CEO, percent and ratios

	No call-back	Call-back for both	Call-back foreign name only	Call-back Swedish name only	Relative call-back rate	Net discrimination rate	Number of jobs
CEO Swedish sounding name	59.1	16.5	4.7	19.6	1.7	36.5	1716
CEO foreign sounding name	61.4	9.9	4.2	24.5	2.4	52.6	426

Pearson chi2(3) = 14.5404 Pr = 0.002. Two-sample test of proportion for call-back Ho: 0.027

The linear probability models in Table 6 below suggest that CEOs with foreign sounding names prefer not only applicants with Swedish sounding names, but *male applicants with Swedish sounding names*. Being a male with a Swedish sounding name increases the probability of getting a call-back from a CEO with a foreign sounding name with as much as 11 percent.^{21 22}

Table 6. Linear probability of receiving a call-back. Unstandardized coefficients

Call-back	Model 1	Model 2	Model 3	Model 4
Swedish sounding name	0.17**	0.17**	0.16**	0.15**
Male		0.00	-0.02	-0.02
Male with Swedish name			0.02	-0.01
CEO with Foreign sounding name			-0.04	-0.05
Interaction effect**				0.11*
Unemployed per vacancy and occupation				-0.01*
Occupation dummies	Yes	Yes	Yes	Yes
Constant	0.20**	0.20**	0.21**	0.22**
Number of applications	3552	3552	2135	2135

* Significant at the 5 percent level, **Significant at the 1 percent level

** Interaction variable: Male applicant with Swedish sounding name*CEO with Foreign sounding name

It should however be emphasized that the “CEOs with foreign sounding names” is a very heterogeneous group. Some of them have an ethnic origin that seems similar to the Arabic and

²¹ An interaction effect for foreign sounding name and CEO with foreign sounding name was not statistically significant.

²² The result may be biased since the names of the CEOs are missing on many companies and organizations, especially within the public sector. I hope to collect this information shortly.

African sounding applicant names, but most of them have foreign sounding names that are ‘European sounding’. This means that a majority of the CEOs are as “socially distant” from the applicants with foreign sounding names as the CEOs with Swedish sounding names are. In this sense, it is difficult to evaluate the social taste theory with this variable. This does however not make the result any less interesting.

Do additional merits pay off as much for people with foreign sounding names as they do for people with Swedish sounding names?

Bertrand & Mullainathan (2004) suggest that high-quality resumes do not increase the call-back rates for African-Americans as much as they do for White-Americans. The results below confirm a similar pattern in call-backs for applicants with Swedish and foreign sounding names. Additional merits, i.e. that the applications are slightly more qualified than what is required in the job announcement, pay off in terms of a higher call-back rate for the applicants with Swedish sounding names but not for applicants with foreign sounding names. While the difference in call-back rates for normally qualified and extra qualified applicants with a Swedish sounding name is 3.7 percent, additional merits do not seem to impact the call-back rate for the applicants with foreign sounding names at all. This result could be explained with mechanisms of statistical discrimination. If the employers take a Swedish sounding name as a proxy for higher productivity, they may screen out all applications with a foreign name not reading more than the name on top of the application sheet. If this is the case, additional merits have no impact on the probability of getting a call-back for applicants with foreign sounding names. So in times of over-education, ethnic discrimination would increase. This is worth considering, since the normal belief is that excess supply of education dampens inequality. But it could also be interpreted as a support for social taste, if the employers want to hire someone who is socially close to her/him, they may ignore applications with foreign sounding names too. However, a two sample test of proportion testing for a difference in proportions of call-backs for Swedish sounding names is not statistically significant. It suggests that there is an eight percent risk that the difference between a normal and a high quality CV for an applicant with a Swedish sounding name is zero in another sample.

Table 7. Call-back rates by application quality

	No call-back	Call-back for both	Call-back foreign name only	Call-back Swedish-name only	Relative call-back rate	Net discrimination rate	Number of applications
Normally merited	60.7	15.8	4.3	19.2	1.8	37.9	1912
Extra merited	57.0	15.9	4.3	22.9	2.0	43.2	1630

Pearson $\chi^2(3) = 7.7498$ Pr = 0.049. Two-sample test of proportion for call-back Ho: 0.081

Conclusion

This paper has provided evidence for the existence of extensive ethnic discrimination in the Swedish labour market. The applications with Swedish sounding names were preferred over applications with Arabic or African sounding names in all occupations. Only two out of 15 occupations did not reveal discrimination that was statistically significant. The relative call-back rates varied between 1.2 and 3.6, and since there were such large differences between the occupations, it is not meaningful to suggest an overall discrimination rate. There is however no reason to believe that a similar pattern would not be found in the occupations not chosen in this study. The fact that there is discrimination in 15 of the largest occupations makes it evident that a significant part of the unemployment gap between people with foreign sounding and Swedish sounding names is explained by ethnic discrimination.

Although the experiment has provided clear evidence for the existence of ethnic discrimination, it has been more difficult to explain why this discrimination occurs. Statistical discrimination is often put forward as the most rational reason for discriminatory behaviour. After all, applicants with a foreign sounding name do *on average* speak Swedish less fluently than applicants with Swedish sounding names. And women do, on average, take larger responsibility for the family than do men. Relevant language skills and job commitment are productivity relevant characteristics. But men did not get a higher call-back rate than women, and occupations where fluent Swedish is especially important had even lower discrimination rates than other occupations. So the results of this study do not confirm the “rational” explanatory mechanism behind discrimination. It may still be that employers have false beliefs about a lower productivity for people with foreign sounding names. In other words, there may be error discrimination involved in hiring decisions. But it has not been possible to control for erroneous beliefs here.

The support for the theory of social distance has also been weak in the analyses. It was found that small companies discriminate more than the bigger ones, a result that is consistent with the social distance theory. But the correlation was not statistically significant. It was also found that CEOs with foreign sounding names discriminate more than CEOs with Swedish sounding names. But as will be presented in a later version of the paper, the majority of the CEOs have a European or Anglo-Saxon origin and they are therefore not ‘socially closer’ to the African and Arabic names used in this experiment than are ethnic Swedes. This variable is therefore not the most appropriate one for evaluating the social distance theory.

The analyses suggest that CEOs with foreign sounding names prefer male applicants with Swedish sounding names, i.e. they have a prior against women as well as applicants with foreign sounding names. CEOs with Swedish sounding names have priors against applicants with foreign sounding names too (although the rate is higher for the former group), but they do not seem to prefer men over women. A possible explanation may be that CEOs with a foreign background worry more about discrimination on behalf of their customers and are therefore more concerned with having a staff with Swedish sounding names. And since Sweden is a country where women’s labour force attachment is more solid than in most countries, it may be that CEOs that are ethnic Swedes are more positive toward female employees than are CEOs with foreign sounding names.

Is there more discrimination in Sweden than in other countries? Since similar field experiments have been performed in many other countries, it is tempting to make cross country comparisons. But in order to compare, one has to suggest total rates of discrimination for entire labour markets. And as has already been discussed, that is problematic. It is also problematic for a number of other reasons.²³ All field experiments that test for ethnic discrimination in the labour market have confirmed the existence of discrimination. The fact that the experiment has been performed on a booming labour market makes the high rates of discrimination rather alarming.

A final word on discrimination and the results is that the kind of discrimination that has been tested for in this experiment is a rather extreme form of discrimination. It tests for

²³ i) The experiments tests for discrimination against different ethnic minorities that have different immigration histories. ii) Some of the experiments have been performed in a booming labour market and some in times of recession. iii) The research designs are bound to differ, and iv) different occupations are included in the different experiments.

discrimination of applicants who are already established in the labour market and who have experience that perfectly matches the job requirements. A rather unrealistic situation has been constructed with two very similar applications for each vacancy. In real life, it is most likely that the difference in call-back rates is much larger. The applicants with the foreign sounding names are many times immigrants who are slightly less fluent in Swedish and who are rejected with reference to this for performing the job many times irrelevant but nevertheless existing difference between them and native applicants. There are also bound to be silent norms on how applications should be designed in the different occupational groups. When not controlling a language perfectly, one may not be aware of those norms or one may not be aware of that one has deviated from them. To deviate even slightly from such norms may also affect how an application is evaluated. To conclude, the discrimination suggested in the experiment of this paper is just the minimum of the unequal treatment facing ethnic minorities in the Swedish labour market.

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