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## Do reported attitudes towards Immigrants predict ethnic discrimination?

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## *Department of Economics*

Working Paper 2012:6

Long Term Impacts of Compensatory  
Do Reported Attitudes towards Immigrants  
Predict Ethnic Discrimination?

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## DO REPORTED ATTITUDES TOWARDS IMMIGRANTS PREDICT ETHNIC DISCRIMINATION?

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# Do Reported Attitudes towards Immigrants Predict Ethnic Discrimination?\*

by

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21 February, 2012

Reported attitudes towards immigrants are sometimes used as a proxy for ethnic discrimination. However, there is little empirical evidence of a link between attitudes and discrimination. In this paper, we use survey data on people's attitudes towards immigrants combined with data on ethnic discrimination from a field experiment in the Swedish housing market to re-examine this issue. We find clear evidence of a link between reported attitudes towards immigrants and the extent of ethnic discrimination at the municipality level. Thus, in contrast to most prior studies, our results suggest that reported attitudes may be a useful proxy for ethnic discrimination.

**JEL classification:** C93, J15, R39

**Keywords:** Attitudes, Ethnic discrimination, Field experiments, Housing market

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## 1. Introduction

In many countries, there are substantial differences in labor and housing market outcomes between natives and immigrants. Typically, immigrants have lower wages, are less likely to be employed, and live in economically disadvantaged areas. There is a large literature analyzing how important ethnic discrimination is for understanding such differences.<sup>1</sup> However, directly measuring discrimination is often difficult and therefore most studies rely on indirect methods.<sup>2</sup>

An indirect method for measuring discrimination which is sometimes used – especially by non-economists – is to construct proxy variables for discrimination based on attitude surveys. In such surveys, respondents are asked questions about their attitudes towards immigrants. However, this approach can only be justified if the reported attitudes, at least to some extent, can predict actual discrimination. There are a number of reasons why attitude measures may *not* be a good predictor of discriminatory behavior. First, respondents may prefer to give socially appropriate answers to sensitive questions such as what their attitudes are towards immigrants (c.f. Bradburn, 1983). Second, people may have implicit attitudes (i.e. attitudes that they are not aware of), which affect their behavior but not their reported attitudes (c.f. Bertrand et al., 2005).<sup>3</sup> Third, situational factors, such as how easy it is to find workers or tenants, may affect the extent of actual discrimination but not people's attitudes.

In psychology, there is a large literature examining the link between attitudes and behavior, but most of these studies are based on laboratory experiments and it is unclear to what extent the results of such experiments can be extrapolated to real-world situations.

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<sup>1</sup> See e.g. Altonji and Blank (1999) and Dymnski (2006).

<sup>2</sup> The most common indirect method to study ethnic discrimination is econometric analysis of administrative data.

<sup>3</sup> See e.g. Greenwald (1998), Rooth (2010), and Rooth and Agerström (2009).

Outside the laboratory, there are only a few experimental studies which compare attitudes and discrimination in a realistic social setting. Two such studies are LaPiere (1934) and Pager and Quillian (2005).<sup>4</sup> In 1930, LaPiere traveled in the US with a Chinese couple and recorded how the couple was treated in hotels and restaurants. The couple was accepted as guests in 250 of the 251 establishments they visited. Later he sent letters to the establishments asking if they accept Chinese guests. More than 90 percent of the respondents replied that they do not. Pager and Quillian (2005) examine the relationship between employers' attitudes towards hiring ex-offenders and their actual hiring behavior. They find that the employers who indicated a greater likelihood of hiring ex-offenders in the survey were no more likely to hire such applicants in practice. Thus, both of these studies reveal a clear inconsistency between what people say and how they behave. Another relevant study, which uses an approach similar to ours, is Carlsson and Rooth (2011a). They examine the link between attitudes towards immigrants and employers' hiring decisions in the Swedish labor market and find rather weak evidence of such a link.<sup>5</sup> There are also some non-experimental studies which examine the relationship between attitudes and labor market outcomes using administrative data (e.g. Carlsson and Rooth, 2011b, Charles and Guryan, 2008, Waisman and Larsen, 2008,

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<sup>4</sup> Two other examples are Kutner et al. (1952) and Saenger and Gilbert (1950)

<sup>5</sup> Besides the fact that they analyze a different market, there are several other important differences. First, a clear majority of the employers in their study are located in the two major cities in Sweden: Stockholm and Gothenburg. This is problematic since identification relies on regional variation. Second, it is uncertain to what extent the attitudes of professional recruiters and average citizens should coincide. This introduces measurement errors. Third, their analysis relies on only one attitude measure. As will be explained in detail below, we handle all these issues by considering individual landlords all over Sweden who look for tenants to their own private apartments and by using several attitude measures.

and Åslund and Rooth, 2005). The results of these studies vary.<sup>6</sup> However, a problem with using administrative data to study these issues is that it is often difficult to make a causal interpretation of the results. Given the concerns mentioned above and the results of the existing empirical studies, one might question the usefulness of constructing proxy variables for discrimination based on attitude surveys.

The purpose of this study is to re-examine the link between reported attitudes and discriminatory behavior. We analyze the link between people's attitudes towards immigrants and the extent of ethnic discrimination in the Swedish housing market by exploiting regional variation across municipalities in these two variables.

To capture people's attitudes towards immigrants in a municipality, we construct several attitude measures based on surveys. These surveys were conducted by a well-known polling company for a government agency and by an independent research institute, and were designed to give a representative picture of the general public's attitudes about immigration and discrimination.

Our measure of ethnic discrimination is from a nation-wide field experiment conducted in the Swedish housing market in 2010 and 2011. Fictitious applications – with a randomly attached typical Swedish or typical Arabic name – were sent by e-mail to more than 5,800 landlords advertising vacant apartments on the largest Swedish classified advertisement

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<sup>6</sup> Charles and Guryan (2008) study wage discrimination using regional US data, and find that people's attitudes matter for the wage outcome. Carlsson and Rooth (2011b) is a similar study on Swedish data. Waisman and Larsen (2008) study wage discrimination in Sweden. Their starting point is that reported attitudes are a proxy for discrimination, and they use an attitude measure, together with data on individual characteristics, to explain wage differentials. For identification, they rely on an exogenous placement policy for refugees, but their results may still be affected by unobserved factors. Åslund and Rooth (2005) study how the 9/11 terrorist attack in the US affected the Swedish labor market. They do not find any evidence that attitudes affect the ethnic difference in the probability of leaving unemployment for employment.

website. From the landlords' responses (invitations to viewings), we construct a variable measuring the extent of ethnic discrimination in each municipality. A key advantage of using a measure of discrimination from a field experiment is that this measure, by construction, is not affected by problems with unobserved heterogeneity with respect to the applicants' characteristics, or by sorting of applicants based on their beliefs about which landlords will discriminate.

In contrast to most existing studies, we find clear evidence of a link between reported attitudes and ethnic discrimination. Our results show that there is more discrimination in municipalities where a high share of the population reports that they are negative to immigrants and less discrimination in municipalities where a high share of the population reports that they are positive to immigrants. Thus, our results suggest that reported attitudes towards immigrants actually may be a useful proxy for the existence of ethnic discrimination.

The rest of the paper is organized as follows. Section 2 describes the data. Section 3 presents and discusses the estimation strategy and the results. Section 4 concludes.

## **2. Data**

The data we use are from surveys of people's attitudes towards immigrants and from a field experiment on ethnic discrimination conducted in the Swedish housing market. In this section, we describe the attitude measures, the field experiment, and the measure of discrimination.

### **2.1 The attitude measures**

To construct measures of people's attitudes towards immigrants, we use data from two sources. First, we use data from the Swedish Integration Board's Integration Survey (IB), which is a survey intended to capture people's attitudes about immigration and



discrimination. Second, we use data from FSI, which is an independent Swedish research institute that, among other things, measures people's attitudes on various issues.

The IB survey was conducted by a well-known polling company for the Swedish Integration Board – a government agency – on a few occasions until 2007.<sup>7</sup> The respondents represent a random sample of all Swedish inhabitants, and we use data from the surveys in 2003, 2005 and 2007. By merging the data from these three waves, we get a sample of 7,569 observations.<sup>8</sup> The survey includes several questions intended to capture the respondents' attitudes about immigration and discrimination. The question we use is (translated from Swedish) “To what extent do you agree with the statement: We should not allow more immigrants to come to Sweden.”<sup>9</sup> The four possible answers are 1) Strongly agree, 2) Agree, 3) Disagree, and 4) Strongly disagree (see the Appendix for descriptive statistics). For each respondent, we also have information on the municipality where he or she lived at the time of the survey (there are 290 municipalities in Sweden).

The FSI survey is conducted every year on a random sample of all Swedish inhabitants. By merging the data for the years 2000 to 2008, we get a sample consisting of 19,988 respondents.<sup>10</sup> The survey includes several questions intended to capture the respondents' attitudes about immigration. The question we use is (translated from Swedish): “Do you think that Sweden should continue to allow immigration to the same extent as currently?”<sup>11</sup> The

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<sup>7</sup> The Swedish Integration Board handled integration issues between 1998 and 2007.

<sup>8</sup> 8 observations were excluded because information where the respondent lived was missing and 211 observations were excluded because the answer to the question was missing.

<sup>9</sup> We have experimented with using other questions in the survey. However, the question we focus on is one of the few relevant questions which are included in all three waves of the survey.

<sup>10</sup> 53 observations were excluded because the answer to the question was missing.

<sup>11</sup> An alternative question that might be used is “What do you think of the immigrants that we have received as a contribution to the Swedish population?”. The five possible answers are: 1) “Very valuable”, 2) “Quite

four possible answers are: 1) “To a larger extent” 2) “To the same extent” 3) “To a lesser extent” 4) “Unsure, do not know” (see the Appendix for descriptive statistics). Again, we have information on where the respondent lived at the time of the survey.

It is not entirely obvious how to construct a measure of attitudes from these questions since the answers are measured on an ordinal scale. A priori, we do not know the cutoff value which separates individuals who discriminate from individuals who do not (if attitudes matter). To deal with this issue, we construct two alternative measures of attitudes by classifying individuals as having either a positive or a negative attitude towards immigrants (the rest is treated as having a neutral attitude). For the IB question, we classify an individual as having a positive attitude if he or she chose one of the first two alternatives and having a negative attitude if he or she chose one of the last two alternatives. For the FSI question, we classify an individual as having a positive attitude if he or she chose one of the first two alternatives and as having a negative attitude if he or she chose the third alternative. However, we also try several alternatives – i.e. more strict classifications – as a robustness check (see Section 3.2). From the classifications, we calculate the share of the respondents with positive and negative attitudes, respectively, in each municipality and for each survey. Table 1 shows that the average fractions with negative attitudes are 49 (IB) and 56 (FSI) percent, while the average fractions with positive attitudes are 51 (IB) and 32 (FSI) percent. In the Appendix, the distributions of the attitude measures across municipalities are illustrated.

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valuable” 3) “Not very valuable”, 4) “Not valuable at all”, and 5) “Unsure, do not know”. We have tried using this question in the estimation and get similar results. The survey also contained other questions about immigration, but these questions focus on immigration legislation and not on the immigrants themselves.

Table 1. The averages of the attitude measures (290 municipalities).

	IB (%)	FSI (%)
Negative attitude	49	56
Positive attitude	51	32

An important question is whether attitude measures based on these surveys are representative not only of the general public's attitudes, but also of the landlords' attitudes. As we will explain in the next section, the clear majority of the landlords in our sample are individuals looking for tenants to their own private apartments and not public housing companies or large commercial landlords. Therefore, it is likely that the attitudes of the general public and the landlords to a large extent should coincide.<sup>12</sup> However, if our measures of attitudes contain limited information about the landlords' attitudes (i.e. mostly contain noise), we should not find any systematic relationship between attitudes and discrimination (c.f. the discussion in Charles and Guryan, 2008).

## 2.2. The field experiment and the measure of discrimination

A field experiment on discrimination in the housing market – often referred to as a correspondence study – is an experiment where written applications are sent to landlords advertising a vacant apartment, and where ethnicity is signaled by the applicant's name. In the experiment, we focus on applicants with typical Swedish and Arabic male and female

<sup>12</sup> We have compared the characteristics of the respondents to the IB survey (we do not have this information for the FSI survey) and the landlords in the field experiment in the dimensions where this is possible, i.e. where comparable characteristics are available both for the IB survey and the field experiment. In the field experiment, 55 percent of the landlords have a male name and 13 percent have a foreign-sounding name. In the IB survey data, 51 percent of the respondents are men and 12 percent are born outside Sweden (note that some individuals with foreign-sounding names may be born in Sweden).

names.<sup>13</sup> The landlords' responses, such as invitations to viewings, are then collected and analyzed to get a measure of the extent of ethnic discrimination.

For our purposes, there are two main advantages of using data from a field experiment. First, a landlord's choice of which applicant to invite to a viewing is based only on the information in the written application, and there is, by construction, no information which is observed by the landlords but not included in the data. Thus, in sharp contrast to studies based on administrative data, we can identify the extent of discrimination without worrying about the effects of unobserved heterogeneity. Second, sorting of applicants across regions is not an issue since the apartments we applied for were randomly chosen. In reality, it is likely that some apartment seekers will direct their search to areas where they believe that discrimination is less likely to occur. Therefore, studies based on administrative data are likely to find less discrimination and this could result in biased estimates of the link between attitudes and discrimination. This problem is reinforced if the sorting is based on unobserved characteristics.

The field experiment was conducted in a six month period between September 2010 and March 2011. A random sample of the advertisements on the largest Swedish classified advertisement website was selected.<sup>14</sup> This website is widely used by individuals and small private landlords to find tenants for vacant apartments. Often, people look for temporary tenants. However, the site is not used by public housing companies, and large commercial landlords typically use other ways to find tenants.<sup>15</sup> In total, 5,825 applications were sent to

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<sup>13</sup> We include searchers with Arabic names since survey evidence indicates that this group may face widespread ethnic discrimination in Sweden (e.g. Lange, 2000). In Sweden, most people with Arabic names are first-generation immigrants.

<sup>14</sup> The website is called Blocket ([www.blocket.se](http://www.blocket.se)).

<sup>15</sup> Typically, these landlords have their own queuing systems which they use to find tenants.

landlords advertising a vacant apartment. For each advertisement, one application was sent to the landlord. We sent 2,947 applications with a typical Swedish name and 2,878 applications with a typical Arabic name, and the names included both a male and a female name for each group.<sup>16</sup> All applications were sent by email, which is the way a clear majority of the landlords indicated that they preferred.<sup>17</sup> Important for the analysis, which exploits regional variation, is that we applied for apartments all over Sweden. Information on the location of the apartments was retrieved from the advertisements. The landlords' responses (callbacks) were received by e-mail, and all invitations to a viewing were promptly declined to minimize any inconvenience to the landlords.

The design of the field experiment is somewhat different from typical correspondence studies where only the name in the application is varied (c.f. Rich and Riach, 2002). Our experiment uses a more general approach by also randomly varying other attributes.<sup>18</sup> How these other attributes affect the probability of being invited to a viewing is not analyzed in this study (see Carlsson and Eriksson, 2012). Note that excluding these attributes from the

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<sup>16</sup> For men, the typical Swedish name was Erik Johansson and the typical Arabic name was Ali Hassan. For women, the corresponding names were Anna Nilsson and Fatima Ahmed. For each group, these are among the most common names in Sweden according to Statistics Sweden's name register.

<sup>17</sup> Landlords who explicitly stated that they preferred to be contacted only by phone were discarded.

<sup>18</sup> Except for the name of the applicant, five other attributes were randomly assigned to each application: age, employment status, leisure time interests, whether the applicant was a smoker, and whether the applicant had a reference from a previous landlord. The age of the applicant was between 25 and 55; employment status was either unemployed, work as a shop sales assistant, or work as a financial manager; leisure time interests were either enjoying evenings at home, being engaged in sport activities, or enjoying restaurant life and nightclubs; either the applicant was a smoker (who never smoked indoors) or a non-smoker; references is a dichotomous variable that corresponds to either a sentence that expressed that the applicant had a reference from a previous landlord or no information about references.

analysis do not affect our estimates of discrimination. This is because all applicant attributes are randomly assigned to the applications, which makes the name of the applicant independent of the other attributes.

We divided the landlords' responses into three categories: an invitation to a viewing, a positive response, and a negative response. An invitation to a viewing is a reply which contains a phrase that explicitly states that it is possible to arrange a viewing of the apartment. A positive response is a reply which does not contain an explicit invitation to a viewing, but asks for further information about the applicant or otherwise indicates a positive response. A negative response is a reply which indicates that it is not possible to arrange a viewing of the apartment. An example is a reply which states that the apartment already has been rented to someone else.

Table 2 reports descriptive statistics for the responses. In the first row, we see that the around 27 percent of the applicants with a typical Swedish name were invited to a viewing, while the corresponding rate for applicants with a typical Arabic name was much lower, around 16 percent. In the second row, we have the positive responses, which were around 12 and 10 percent, respectively. In the third row, we have the negative responses, which were around 6 and 8 percent, respectively. Finally, we see that around 55 and 66 percent of the applicants in the two groups received no response at all.

Table 2. Response rates.

	Swedish name (%)	Arabic name (%)
Invitation to a viewing	27.1	16.4
Other positive response	11.6	9.7
Negative response	6.2	8.0
No response	55.1	65.9
	100	100
Number of observations	2,947	2,878

In the empirical analysis, we focus on the difference between the two groups in the response rate for the first alternative, i.e. an invitation to a viewing. There are several reasons for this choice. First, in most cases a prerequisite to get an apartment is to be invited to a viewing. Thus, it is natural to focus on this alternative. Second, the other alternatives are sometimes difficult to interpret. A frequent positive response was that the landlord had already invited a number of people to viewings and would contact the applicant again if the apartment was still available after these viewings, but in almost all such cases the landlord did not contact the applicant again. Also, a common negative response was that the apartment had already been rented to someone else. These answers may of course be true, but may also be used as an excuse to hide discrimination. For similar reasons, a non-response is also difficult to interpret. These examples illustrate that the other alternatives may be problematic to use as a measure of discrimination. Third, the descriptive statistics presented above show that the most compelling difference between the two groups is the difference in the share that is invited to a viewing.

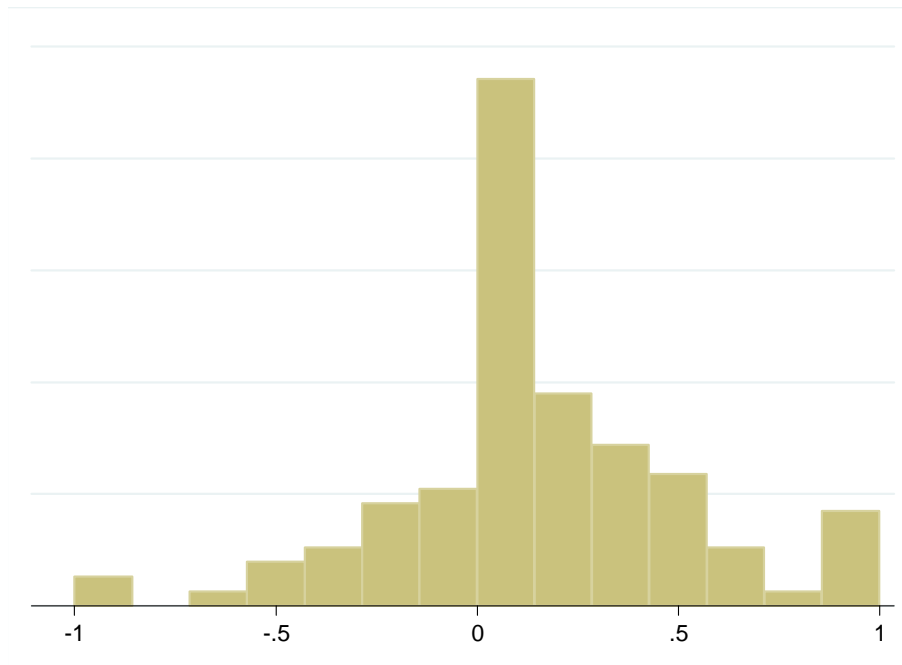
To study the link between reported attitudes and ethnic discrimination at the municipality level, we need to construct a measure of discrimination in each municipality. We do this by calculating the difference in the fraction of applicants with typical Swedish and typical Arabic names that were invited to a viewing in each municipality. This means that we get 214 measures of the extent of ethnic discrimination.<sup>19</sup> When all municipalities are given an equal weight, the average ethnic difference in the fractions of the applicants that are invited to a

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<sup>19</sup> In Sweden, there are 290 municipalities. However, during the period the experiment was conducted there were no landlords advertising vacant apartments in 27 municipalities. Moreover, in 49 municipalities, we cannot calculate the measure of discrimination due to too few observations. Almost all of the excluded municipalities are small and sparsely populated.

viewing is 14 percentage points with a standard deviation of 38 percentage points. Figure 1 presents the distribution of this variable across municipalities.

Figure 1. The distribution of the ethnic difference in the callback rate (214 municipalities).



### 3. Estimation and results

In this section, we study the link between reported attitudes and ethnic discrimination. First the estimation strategy is discussed and then the results of the empirical analysis are presented.

#### 3.1 Estimation strategy

We want to analyze to what extent ethnic discrimination – i.e. the ethnic difference in the callback rate to an apartment viewing – can be explained by attitudes towards immigrants. Thus, in the regression analysis, we use the difference in the callback rate in a municipality as the dependent variable and the share of individuals in a municipality with positive and negative attitudes, respectively, as the explanatory variable. As mentioned before, we do not need to include any other variables in the analysis. This is because all the applicants’



characteristics are randomly assigned to the applications and the landlords are a random sample of the landlords using this particular website to advertise vacant apartments.

To take into account that the number of apartments we have applied for varies between municipalities, we use a weighing procedure where the number of apartments we applied for in each municipality is used as weights. This weighing procedure should make our estimates fairly representative of the market for small private landlords in Sweden since areas with many apartments – e.g. the large cities – get a larger weight.

A concern is that there are few respondents to the attitude surveys in some municipalities. This is likely to introduce measurement errors in the explanatory variable, which may lead to an underestimation of the true relationship between attitudes and ethnic discrimination. To some extent, the weighing procedure should mitigate this problem. However, to further examine whether our results are robust to this concern, we use two approaches. The first approach is to exclude municipalities where there are only a few respondents to the survey. The second approach is based on the idea that, if we have two independent measures of attitudes, we can use one of them as an instrument for the other to mitigate the problem with measurement errors.

### **3.2 Results**

Table 3 presents the results of the empirical analysis of the relationship between reported attitudes towards immigrants and ethnic discrimination.

Table 3. Difference in the callback rate to a viewing

	IB		FSI		
	(1)	(2)	(3)	(4)	(5)
<b>Negative attitudes</b>					
Negative attitude	0.25** [0.11]	0.37*** [0.14]	0.17 [0.14]	0.31** [0.15]	0.45** [0.21]
Constant	-0.01 [0.05]	-0.07 [0.06]	0.01 [0.08]	-0.07 [0.08]	-0.15 [0.12]
Restricted sample	No	Yes	No	Yes	No
IV (IB)	No	No	No	No	Yes
Number of observations	214	91	214	91	214
<b>Positive attitudes</b>					
Positive attitude	-0.25** [0.11]	-0.37*** [0.14]	-0.29** [0.14]	-0.37** [0.17]	-0.47** [0.22]
Constant	0.24*** [0.06]	0.30*** [0.08]	0.20*** [0.05]	0.22*** [0.06]	0.26*** [0.07]
Restricted sample	No	Yes	No	Yes	No
IV (IB)	No	No	No	No	Yes
Number of observations	214	91	214	91	214

*Notes:* The dependent variable is the difference in the callback rate to a viewing for applicants with a typical Swedish name and a typical Arabic name. In Columns (2) and (4), only municipalities where we have applied for at least five apartments in each group and where at least five people have answered the survey are included. In Column (5), the IB attitude measure is used as instrument for the FSI attitude measure. \*, \*\*, and \*\*\* denote significance at the ten, five, and one percent levels, respectively.

The upper part of the table reports the results of the analysis using the negative attitude measures. For the IB measure (Column 1), the ethnic gap in the callback rate to a viewing is larger in municipalities where the reported attitudes are more negative. The interpretation of the estimated coefficient is that a ten percentage point increase in the share of individuals who have a negative attitude is associated with a 2.5 percentage point larger gap in the callback rate to a viewing. In Column 2, we take into account the possibility of measurement errors by restricting the sample to municipalities where we have applied for at least five apartments in each group and at least five people have answered the survey. Then, the

negative effect is reinforced; the effect of a ten percentage point increase in negative attitudes is 3.7 percentage points. For the FSI measure, the relationship between negative attitudes and ethnic discrimination is not statistically significant, although the point estimate is positive (Column 3). However, if we take into account the possibility of measurement errors by restricting the sample (Column 4), or using the IB measure as an instrument for the FSI measure (Column 5), we get a statistically significant effect. The size of the effect of a ten percentage point increase in negative attitudes is in the range of 3 to 5 percentage points. The fact that we get stronger results when we instrument the FSI attitude measure with the IB attitude measure indicates that the predictive power of attitude surveys should increase with the number of respondents (given that the questions are well-formulated so that the measurement errors diminishes).

The lower part of the table reports the corresponding results of the analysis of the association between positive attitudes and ethnic discrimination. For the IB measure, the effects are the exact opposite of the corresponding effects of negative attitudes (there was no neutral alternative in the IB survey), i.e. the gap in the callback rate to a viewing is lower in municipalities where the reported attitudes are more positive. For the FSI measure, the results are similar to the results for the IB measure. The effect of a ten percentage point increase in the share of individuals who have a positive attitude is associated with a 3 to 5 percentage point lower difference in the callback rate to a viewing – depending on whether we correct for potential measurement errors or not and what correction procedure is used (Column 3-5).

To further investigate if our results are robust, we have considered a number of alternative specifications.<sup>20</sup> First, we have experimented with, instead of using the weighting procedure, excluding municipalities where we have applied for very few apartments; e.g. less

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<sup>20</sup> These results are available from the authors upon request.

than five in each group. The results are qualitatively similar to the results in Table 3. Second, we have tried excluding the largest municipalities from the sample to investigate if the results are driven by the municipalities with a large weight in the weighing procedure. The results remain very similar. Moreover, excluding the smallest municipalities and/or other outliers in the distributions does not affect the results. Third, we have tried including other positive responses than viewings in the discrimination measure and get qualitatively similar results. Finally, we have experimented with using alternative criteria to classify respondents as having negative and/or positive attitudes. In particular, we have tried only including respondents who report that they strongly agree with the negative statement in the IB survey as having a negative attitude. With this modification the results get somewhat weaker, but this may be because relatively few people have such strong opinions. Moreover, if we only classify people who in the FSI survey answer that they prefer more immigration as having a positive attitude, the result is strengthened.

To summarize, our results clearly suggest that there is a link between reported attitudes towards immigrants and ethnic discrimination. The results appear stable across different specifications, and are both statistically and economically significant.

#### **4. Concluding remarks**

Data from attitude surveys are sometimes used as a proxy for ethnic discrimination. However, this approach can only be justified if there is a link between reported attitudes and actual discrimination. The few existing empirical studies find weak support for such a link. In this paper, we re-examine this issue by using survey data measuring people's attitudes towards immigrants combined with data on ethnic discrimination from a field experiment in the Swedish housing market.

In contrast to most existing studies, our results show that there is a clear link between attitudes and discrimination. We find that there is more discrimination in municipalities where a high share of the population reports that they are negative to immigrants and less discrimination in municipalities where a high share of the population reports that they are positive to immigrants. This suggests that reported attitudes towards immigrants actually may be a useful proxy for the existence of ethnic discrimination, and thus that it is unreasonable to dismiss all attitude measures as inaccurate predictors of discrimination.

An important question is why we find a stronger link between reported attitudes and discrimination than most existing studies. One possible explanation is that the respondents to the attitude surveys we use – who in the IB case were contacted by a well-known polling company – felt more secure to express their real attitudes than the respondents in the previous studies who in most cases were contacted directly by the researchers.

The results may also shed some light on the nature of discrimination. The existence of a link between reported attitudes and ethnic discrimination suggests that, at least part of, the measured discrimination should be preference-based. If all discrimination reflected uncertainty about the applicants' characteristics (i.e. statistical discrimination), it is difficult to see why the extent of discrimination should be associated with people's reported attitudes towards immigrants. However, separating preference-based and statistical discrimination is very difficult and is left to future research.

In summary, our results suggest that the general public's reported attitudes towards immigrants may be a useful predictor of ethnic discrimination. This implies that such measures, together with other evidence of discrimination, may be useful for policymakers responsible for designing policy initiatives to combat ethnic discrimination.

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## Appendix: The IB and FSI attitude measures

Table A1. The IB attitude measure.

Year	Number of observations	Strongly agree (%)	Agree (%)	Disagree (%)	Strongly disagree (%)
2003	2,744	22	25	30	24
2005	2,512	20	25	31	23
2007	2,313	19	27	31	24
All	7,569	20	26	31	24

Note: The question: “To what extent do you agree with the statement: We should not allow more immigrants to come to Sweden?”

Table A2. The FSI attitude measure.

	Number of observations	More immigration (%)	Same immigration (%)	Less immigration (%)	Don't know (%)
FSI 2000	1,327	9	31	47	14
FSI 2001	2,072	8	29	52	11
FSI 2002	5,104	6	26	57	11
FSI 2003	1,552	7	26	57	10
FSI 2004	1,508	7	25	57	11
FSI 2005	1,957	9	25	56	10
FSI 2006	3,253	7	26	55	12
FSI 2007	1,740	7	28	54	11
FSI 2008	1,475	8	28	55	10
All	19,988	7	27	55	11

Note: The question: “Do you think that Sweden should continue to allow immigration to the same extent as currently?”



Figure A1. The distribution of the share of the population with negative attitudes in the IB survey (290 municipalities).

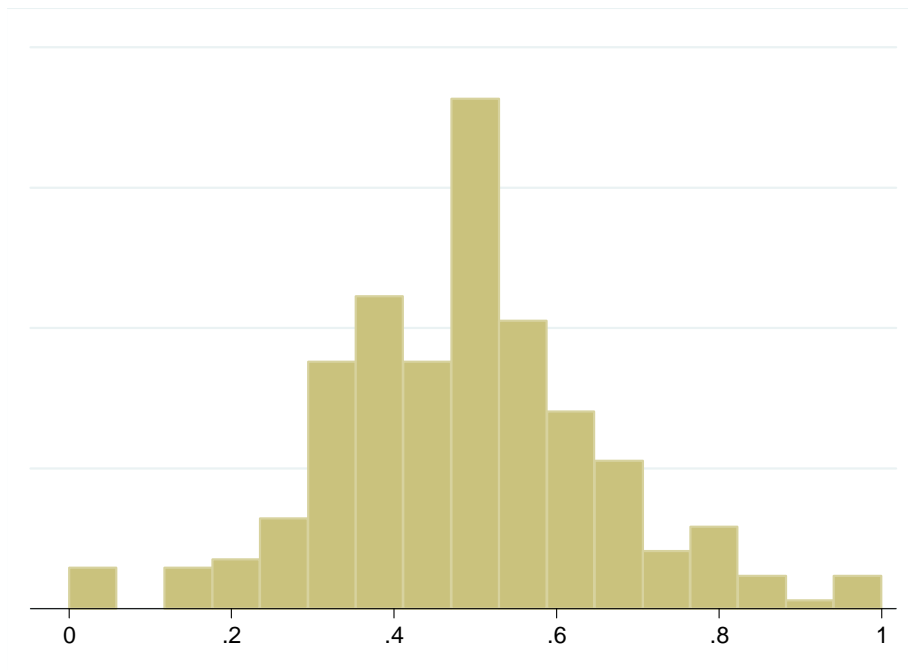


Figure A2. The distribution of the share of the population with positive attitudes in the IB survey (290 municipalities).

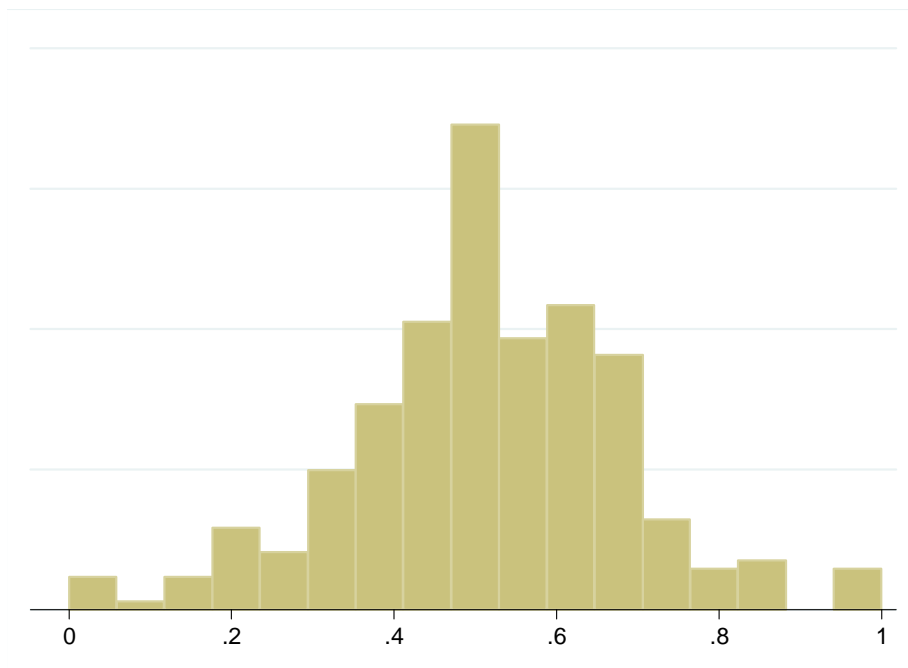


Figure A3. The distribution of the share of the population with negative attitudes in the FSI survey (290 municipalities).

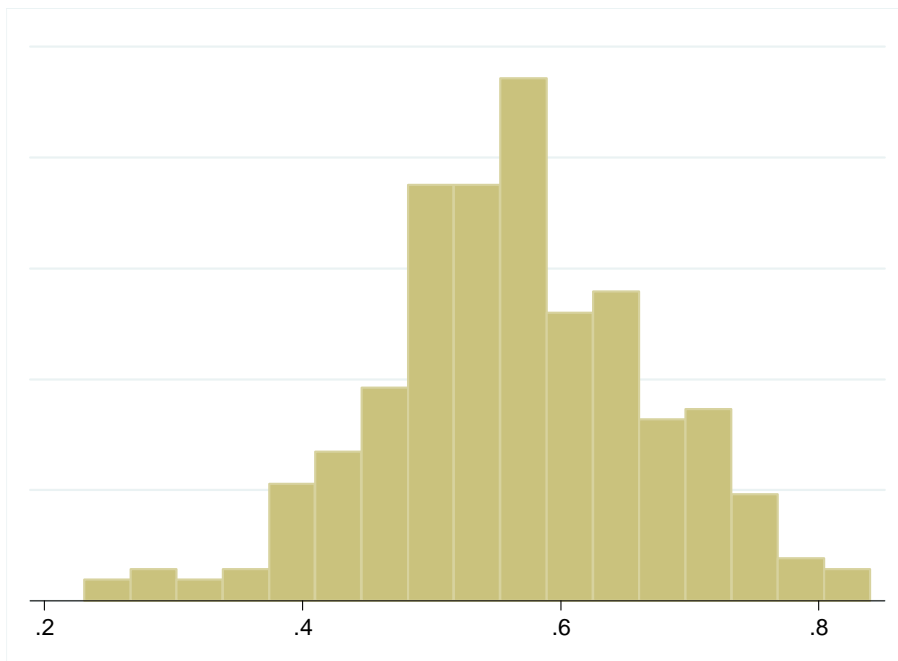
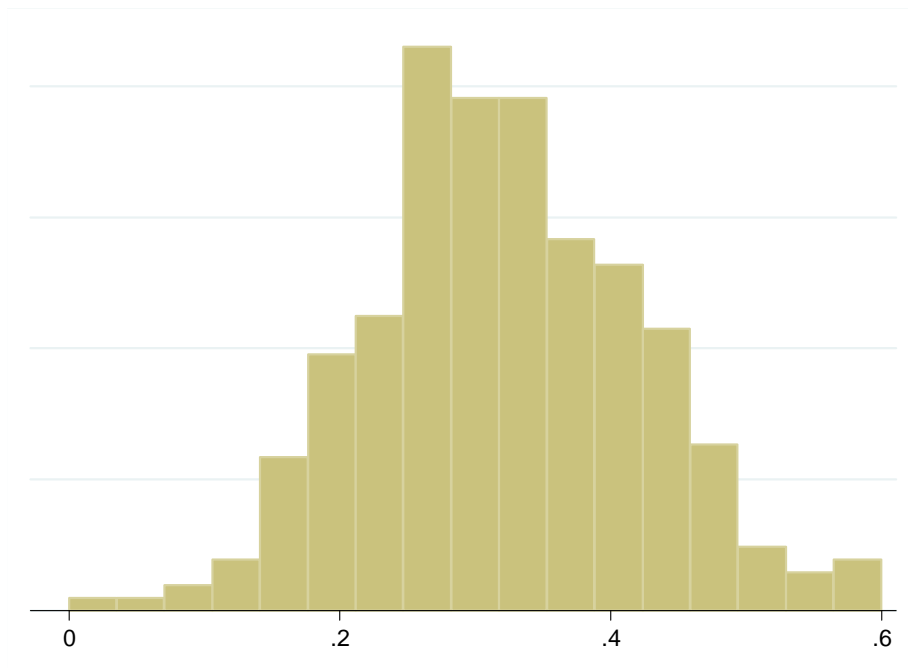


Figure A4. The distribution of the share of the population with positive attitudes in the FSI survey (290 municipalities).



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