Discrimination based on Gender and Ethnicity in English and Polish Housing Markets

Jan Antfolk[1], Anna Szala[1], & AnnaMaria Öblom[1]

[1] Department of Psychology, Åbo Akademi University, Turku, Finland

Corresponding Author:

Jan Antfolk

Department of Psychology

Åbo Akademi University

20500 Turku, Finland

jantfolk@abo.fi

Abstract

Several studies have documented ethnic and gender discrimination in a variety markets, including the housing market. Discrimination in the housing market is associated with decreased social integration and is costly both at social and individual levels. In the current pre-registered field experiment, we sent inquires to advertisements for rentals in England and Poland. Inquires were signed with Arabic, English, or Polish sounding male and female names. Contrary to our expectation, we found no evidence of discrimination in the English housing market. We, however, found evidence of discrimination of Arabic males in the Polish housing market. The probability of receiving a response was generally lower in England compared to Poland. The results are discussed against current social and political situations in both countries.

Keywords: Discrimination, Housing market, England, Poland, Field experiment

Discrimination based on Gender and Ethnicity in English and Polish Housing Markets

During the last three decades, research on discrimination has been on the increase. Discrimination is defined as the result of unequal treatment of groups or individuals, depending on some of their characteristics, such as gender or ethnicity (Thompson, 2016). Discrimination can be the result of a number of different behaviors (e.g., Rogaliński & Rogalińska, 2011) and an individual may behave in discriminatory fashion even without intending to do so. Intentional or unintentional forms of discrimination are widespread and appears in a wide range of contexts and cultures. Discrimination has both direct consequences (e.g., decreasing the probability of getting a job; Neumark, 2016; Gaddis, 2015) and indirect consequences (e.g., such as increasing the risk of depression; Hodge, Zidan, & Husain, 2015; Kim, 2014) at the individual, and it also impacts society negatively (e.g., Fernandez-Ballesteros, Olmos, Santacreu, Bustillos, & Molina, 2017; Thorat & Newman, 2007).

Although a decrease in open forms of discrimination has been reported, discrimination against several social groups seems to remain common (Pascoe & Smart Richman, 2009). For example, discrimination based on ethnicity is commonplace in various US markets, including the credit, consumer, employment, and housing markets (Pager & Shepherd, 2008). Among US residents with Latin-American background, 30% report having experienced some form of discrimination (Pérez, Fortuna, & Alegría, 2008). Another example is discrimination of women and “non-whites” in labor markets, which has been documented in many countries (Riach & Rich, 2002). Discrimination based on ethnicity and gender is also common throughout Europe (European Commission, 2012). Taken together, these findings suggest that discrimination against several different social groups is prevalent in a variety of countries.

Ethnicity and Gender Discrimination in Various Housing Markets

Discrimination in the housing market can, for example, occur when the access to housing is unequally distributed among individuals of similar economic characteristics due to some other characteristic, such as gender or ethnicity (MacDonald, Nelson, Galster, Paradies, Dunn, & Dufty-Jones, 2016). An example of such discrimination is the increased difficulty immigrants experience in gaining access to apartments that suit their needs (e.g., Aaltonen, Joronen, & Villa, 2009). Research conducted in, for example, the US, Australia, Italy, India, Germany, France, Britain, Spain, Sweden, and Finland provides evidence for housing market discrimination being wide-spread (e.g., Ahmed & Hammerstedt, 2008; Bosch, Carnero, & Farré, 2010; Datta & Pathania, 2016; Dion, 2001; MacDonald, Nelson, Galster, Paradies, Dunn, & Dufty-Jones, 2016; Pager & Shepherd, 2008; Riach & Rich; 2002; Öblom & Antfolk, 2017). In Finland, approximately 30% of interviewed immigrants reported having experienced discrimination when seeking an apartment (Aaltonen, Joronen, & Villa, 2009) and immigrants in Nordic countries also tend to get different housing opportunities compared to the majority populations (Andersen, Magnusson Turner, & Soholt, 2013). Also in France, field experiments have revealed that individuals with names that are not typically French are less likely to receive responses to housing-related inquiries compared to individuals with more typical French names (Acolin & Bostic, 2016). A study from the Belgian housing market also reports similar findings (Heylen & Van den Broeck, 2016). In the US, inquires signed by Arabic-sounding and African-American sounding names received fewer positive responses compared to names typical for the white population (Carpusor & Loges, 2006). These results suggest that discrimination based on ethnicity is prevalent in housing market across several countries, and that such discrimination can be based on as little as an individual's name.

Concerning discrimination based on gender, Ahmed and Hammerstedt (2008) found that Swedish females received more responses to inquiries and invitations to view apartments than Swedish males. Whereas this finding suggests discrimination of males, discrimination based on ethnicity and discrimination based on gender are also frequently associated (Bengtsson, Iverman, & Tyrefors Hinnerich, 2012). A Norwegian study revealed that discrimination in the housing market was particularly directed at males with Arabic-sounding names, whereas females with Arabic-sounding names suffered discrimination to a lesser extent (Andersson, Jakobsson, & Kotsadam, 2012). A Swedish study (Ahmed & Hammerstedt, 2008) produced very similar results. In Sweden, it has additionally been shown that females with Swedish names are more likely to receive responses to inquires about rentals compared to females with Arabic names (Bengtsson, Iverman, & Tyrefors Hinnerich, 2012). Similarly, a recent field experiment conducted in Finland showed discrimination against Arabic-sounding male names in particular (Öblom & Antfolk, 2017). In sum, these studies suggest that males with foreign names are more likely to experience discrimination compared to females with foreign names.

Housing Markets and Housing Legislation in England and Poland

In England, over 4.5 million (20%) of dwellings were privately rented in 2014 (Dwelling Stock Estimates, 2014). The median monthly rent was £650 in 2015-2016, although it varied greatly depending of the location (£1452 in London, £845 in South East, and £475 in North East; Dwelling Stock Estimates, 2014). Rents are also rising. According to Index of private housing rental prices in Great Britain (IPHRP, 2017), rents increased by 14.6% between January 2011 and April 2017.

With respect to regulations of the housing market, in 2010, the Parliament of the United Kingdom introduced the Equality Act 2010. The main purpose of the Act was to combine and

simplify the existing anti-discriminative laws and protections, promote a more equal and fair society, and simplify the process of granting protection of individuals from unfair treatment, based on, for example race or gender. The rules are applied in the housing market as well (Equality Act 2010, 2010).

In Poland, a relatively small proportion of the population (4.6%) lives in rented apartments (Ilu Polaków wynajmuje mieszkania, 2016), although this proportion is higher (24%) among students (Urbańska, 2007). Also in Poland, the median rent differs greatly depending on location. In March 2017, the rent for a medium size apartment was about 2143 PLN (Polish currency; in March 2017, £1 was equal to approx. 4.8 PLN) in Warsaw, 1952 PLN in Cracow, and 1581 PLN in Łódź (Ceny ofertowe wynajmu mieszkań – kwiecień, 2017).

In Poland, the Article 32 of The Constitution of Polish Republic of 1997 prohibits all forms of discrimination based on, for example, sex or ethnic origin (The Constitution of The Republic of Poland, 1997).

Immigration and Attitudes in England and Poland

In 2016, Approximately 9.5 out of 65.1 million inhabitants in Great Britain's inhabitants were born elsewhere (Office for National Statistics, 2016). In 2015, the Polish were among the three largest immigrant populations in the United Kingdom (Trends in International Migrant Stock, 2015). In 2004, Poland entered the European Union, after which a rapid growth of Polish emigration was seen. The Polish population in England also grew considerably, from approximately 58,000 inhabitants in 2001 to 579,000 in 2011 (Office for National Statistics, 2013), and 831,000 in 2015 (Office for National Statistics, 2016). This rapid increase has been suggested to have resulted in native English having more negative attitudes towards Polish immigrants (e.g., Alexander, 2014; Micklethwaite, 2016), although research validating this

assumption is currently lacking. Ethnic- and gender-based discrimination in universities or labor markets is also observed towards Arabic people (e.g., Booth, Leigh, & Varganova, 2011; Collier & Burke, 1986; Riach & Rich, 2002). Anti-Arabic discrimination was also found in the shared housing market (Carlsson & Eriksson, 2015). Due to historical reasons, especially after the 9/11 attack, anti-Arab and anti-Asian attitudes transitioned to anti-Muslim (Poynting & Mason, 2007), and due to a number of recent terror incidents carried out by Islam extremists, concerns about Muslims are rising (Poushter, 2015). Because of these increase in negative attitudes towards Polish and Arabic immigrants, we expect discrimination against Polish and Arabic individuals to be present in the English housing market.

Compared to England, Poland is a culturally homogenous country (Koss-Goryszewska, 2010). The immigrant population is low. In 2011, approximately 674,900 (1.8%) of Polish inhabitants were not born in Poland (Chmielewski, 2013). The biggest populations of minorities are immigrants from nearby European countries, such as Ukraine (0.6%), Germany (0.2%), and Belarus (0.2%). A study on attitudes towards other ethnicities suggest that Poles express the most positive attitudes towards Italian, English, Spanish, Czech, and American people. Poles express the most negative attitudes towards Arabic, Romanian, Serbian, Romani, and Turkish people (Strzeszewski, 2005). Polish xenophobic attitudes, especially towards Arabic people, has lately begun to deepen—likely because of the increase of the stream of Syrian and Iraqi refugees across Europe (Brodziak, Różyk-Myrta, & Wolińska, 2016; Poushter, 2015), and due to a mix of cultural, social, economical, political, and security-related fears (Bachman, 2016). Because both the English and American people are among the most preferred immigrant ethnicities in Poland, we expect no discrimination against them in the Polish housing marked. Because of the relatively negative attitudes towards immigrants from the Arabic and Muslim world, we expect

discrimination against Arabic individuals to be present in the Polish housing market. Discrimination based on ethnicity is, however, poorly understood in Poland, due to the relatively low immigration rate and a lack of research (Wencel, 2011).

The Current Study

In the current study, we aimed to extend the current understanding of discrimination based on gender and ethnicity. More specifically, we were interested in investigating housing discrimination in England and Poland expressed towards males and females with Arabic-, English-, and Polish-sounding names. In a field experiment, we sent standardized e-mail inquiries to 960 advertisers offering rooms or apartments at public websites in England or Poland (gumtree.com for England and gumtree.pl for Poland). In both countries, we focused on ten of the most densely populated urban areas: Bradford, Birmingham, Bristol, Coventry, Leeds, Leicester, Liverpool, London, Manchester, and Sheffield for England; Bydgoszcz, Cracow, Gdańsk, Katowice, Łódź, Lublin, Poznań, Szczecin, Warsaw, and Wrocław for Poland. This was done in order to sample from a large population of rentals and to, at the same time, consider the possible variation between different urban areas. E-mail inquiries were signed by either Arabic-, English-, or Polish sounding names, and the rate of responses to these inquiries were recorded. The use of this type of correspondence test (as in e.g., Ahmed & Hammerstedt, 2008; Öblom & Antfolk, 2017), allows the standardization of inquires across names that represent both genders and various ethnicities.

Based on the previous literature, we formulated the following hypotheses:

(1) We expected there to be discrimination based on ethnicity. More specifically, we expected that, in the English housing market, inquires signed with Arabic- or Polish-sounding names would receive fewer responses than inquires signed with English-sounding names.

Conversely, In the Polish housing market, inquires signed with Arabic-sounding names would receive fewer responses than inquires signed with English- or Polish-sounding names.

(2) We also expected discrimination based on gender. For both English and Polish housing markets, we expected that inquires signed with male names would receive fewer responses than inquires signed with female names.

(3) We also expected an interaction. Gender discrimination was expected to be larger for Arabic- and Polish-sounding names (vs. English-sounding names) in the English housing market, and larger for Arabic- and English-sounding names (vs. Polish-sounding names) in the Polish market.

As shown, several studies have been conducted in Europe and elsewhere to investigate discrimination based on gender and ethnicity using different types of methodologies. Even so-called correspondence tests (e.g., sending out inquiries regarding a job or an apartment while posing as members of different social groups), a method that belongs to the most robust methods of investigating discrimination in the housing market, is not impervious to coding, reporting, and interpretation bias. To our best knowledge, none of the studies conducted in this field have been preregistered. This leads the field to suffer from potential over- or underestimates of discrimination—perhaps even motivated by the researcher's own political views. Because of this potential problem, the current study was preregistered. In the pre-registration, the rational, the method for data collection, the statistical analyses were evaluated, discussed and accepted before data collection commenced.

193 ## Materials and Methods

194 ### Pre-Registration and Open Science Statement

195 The current study was pre-registered on the Open Science Framework in April, 2018.
196 Documents including an introduction, methods, and *R* scripts for the planned analyses were also
197 separately uploaded and time stamped before commencing data collection (osf.io/tr28w).

198 ### Ethics statement

199 The study received permission from the Ethical Review Board the Åbo Akademi
200 University during summer, 2017. The permission was based on an amendment to a previously
201 obtained permission for a similar study conducted in Finland by the first and last author.

202 ### Procedure

203 To investigate discrimination in the English and Polish housing market, we used the
204 largest private housing search engine for England (gumtree.com) and Poland (gumtree.pl). We
205 included advertisements concerning rentals in the ten most populated cities in both countries.
206 Only advertisements including an e-mail address to the advertiser were included. We sent a
207 standardized e-mail to each included e-mail address. The standardized e-mail asked for more
208 information regarding the apartment and was signed by either an Arabic-, Polish- or English
209 sounding male or female name. Each e-mail was signed by one of 12 names. Two different
210 female and two different male names for the three ethnicities were generated. Names were
211 chosen out of lists of the most popular names found on the Internet. In this step, we also
212 attempted to avoid names that are common across two or more of the different ethnic groups
213 (e.g. Anna, Daniel). The names were also run by natives from England, Poland, and Iraq in an
214 attempt to further verify that they were natural and common (See Table 1).

215

Table 1

English-, Polish-, and Arabic-sounding Male and Female Names used in the Current Study

	English	Polish	Arabic
Male	Charlie Evans	Grzegorz Wiśniewski	Mohammed Wakim
	James Roberts	Tomasz Wrzesiński	Ahmed Sadiq
Female	Emily Williams	Urszula Lewandowska	Maryam Abdelrahman
	Jessica Wright	Katarzyna Kozłowska	Aishah Bashir

For each name, an e-mail account was created, and the address was generated using the first two letters of the first name, a dot, the full last name, and "ega7" at the end. For example, the e-mail address for Charlie Evans was "ch.evans.ega7@gmail.com". For each e-mail account a draft was created. This draft included the standardized e-mail text and a signature using the name corresponding to the e-mail address.

A total of 480 e-mails was sent to English advertisers and a total of 480 e-mails was sent to Polish advertisers. For each city in the two countries, 48 adds were chosen. Each day during the data collection, the 24 most recent ads from 2 different cities in Poland and 2 different cities in England were selected, with a total number of 96 ads a day evenly divided between 4 cities. The order of cities within country were randomized a priori. Of the 24 e-mails, 8 were signed by Arabic-, 8 by Polish, and 8 by English-sounding names. Of these 8 e-mails, 4 were signed by female names and 4 by male names. Hence, each particular name was repeated twice. The order of e-mails sent per day and city was fully randomized.

Each sent e-mail was documented in a data file containing information that allows for

matching sent e-mails with their response. This data file was encrypted, and stored at a hard drive not connected to the Internet. Only the second author had access to the file at this stage. To not compromise the advertisers' confidentiality, any information that could be linked to a specific individual or a specific room or apartment was removed before the data file was made available to the entire research team and uploaded to the OSF project page.

Data Coding

For each e-mail we coded the following information: Gender (male or female) and Ethnicity (Arabic, Polish, or English) of the "sender"; country (England or Poland), location of apartment (Bradford, Birmingham, Bristol, Coventry, Leeds, Leicester, Liverpool, London, Manchester, and Sheffield in England; Bydgoszcz, Cracow, Gdańsk, Katowice, Łódź, Lublin, Poznań, Szczecin, Warsaw, and Wrocław in Poland) of the advertised apartment, and whether or not the e-mail received a non-automated response or not (automatic responses were coded as no-response). For descriptive purposes, we also coded the size and price (monthly rent) and the type of the apartments when this information was available. The process was terminated when receiving a reply, that is, we discontinued contact with advertisers after this.

Statistical Analyses

Data were analyzed using the *R* platform for statistical procedures (R Core Team, 2008). To consider the within location clustering, we used a mixed model (*glmer*) procedure in the package *lme4* (Bates, Maechler, Bolker, & Walker, 2015). The model was specified as a binomial logistic regression, with response (yes or no) as the outcome variable, and gender and ethnicity, and their interaction term, as predictors:

$$\text{Response} \sim \text{Gender*Ethnicity} + (1|\text{Location})$$

To obtain mixed models Anova tables, we used the *afex*-package (Singmann, Bolker,

Westfall, & Aust, 2017), and for post-hoc comparisons between levels, we used the *multcomp*-package (Hothorn, Bretz, & Westfall, 2008).

First, two different sets of analyses were run, one for England and one for Poland. To also test whether the observed patterns are different between England and Poland, a model including Country as a predictor was also made:

$$\text{Response} \sim \text{Country}*\text{Gender}*\text{Ethnicity} + (1|\text{Location})$$

To calculate probabilities and confidence intervals from the mixed model, we added "-1" to the set of predictor terms to produces point estimates for each included condition. These estimates (log odds ratios) were then turned into probabilities following the expit-function, exp(x)/(1+exp(x)). The 95% confidence intervals were obtained in the same way, but after multiplying the *SE* (obtained from the square root of the diagonal in the variance-covariance matrix) by 1.96 and then added to (for upper bound confidence intervals) or subtracted from (for lower bound confidence intervals) the point estimate.

Power Analyses

Power was calculated for analyses within each of the two included countries. We conducted power analyses using the *power.sim.binomial* function in the *clusterPower*-package (Reich, Myers, Obeng, Milstone, & Perl, 2012). We based our estimates on a study using approximately the same methodology (Öblom & Antfolk, 2017). We assumed an on average response probability of 30%, and that the proportion of responses in the most discriminated group would be 60% of that in the group receiving the most responses. The number of clusters were set at 10 and the cluster size at 48. The between-cluster variance was set at .20. A simulation with 200 iteration yielded an average power ($1 - \beta$) of .85 at an alpha level of $a = .05$ for the expected treatment effect.

Graphical Presentations

Figures was generated using the *SjPlot*-package (Decke, 2016), presenting the mean predicted probability of receiving a response (and the 95%CI) by gender and ethnicity groups. One figure was made for England and one was made for Poland.

Results

We first investigated whether the counterbalancing had been successful, by counting inquires sent by type of name and country. The number of inquires were evenly distributed across Arabic, English, and Polish sounding male and female names (See Table 2). Within the two countries, each of the ten locations had also been sent 46 individual inquires, yielding a total of 960 inquires. After this we counted, the number of responses and number of response types by type of name and country (See Table 2). We received a response for 549 (57.2%) out of the 960 inquires sent. Of the 549 responses, 543 (97.1%) were positive. For the 480 inquires sent for English housing ads, we received 356 (74.2%) responses. Of the these, 346 (97.2%) were positive. For the 480 inquires sent for Polish housing ads, we received only 193 (40.2%) responses. Of the these, 187 (96.9%) were positive.

Table 2

Number of Sent Inquires, Received Responses, and Response Type by Type of Name and Country

	England						Poland					
	Inquires Sent		Responses Received		Positive Responses		Inquires Sent		Responses Received		Positive Responses	
Names	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Arabic	80	80	59	59	55	55	80	80	13	32	11	31
English	80	80	55	65	55	63	80	80	33	37	31	37
Polish	80	80	56	62	56	62	80	80	39	39	39	38

Note: Positive Responses defined as the number of Responses Received that were neutral or positive, allowing for continued contact between landlord and tenant.

Table 3

Probabilities for Received Responses and Response Type by Type of Name and Country

	England				Poland			
	Response		Positive Response		Response		Positive Response	
	Prob.	95%CI	Prob.	95%CI	Prob.	95%CI	Prob.	95%CI
Arabic Female	.74	.63, .82	.69	.57, .78	.40	.28, .53	.38	.27, .51
English Female	.81	.71, .89	.79	.68, .86	.46	.34, .59	.46	.33, .59
Polish Female	.78	.67, .86	.78	.67, .85	.49	.36, .61	.47	.35, .60
Arabic Male	.74	.63, .82	.69	.57, .78	.15	.09, .26	.13	.07, .23
English Male	.69	.58, .78	.69	.58, .78	.41	.29, .54	.38	.27, .51
Polish Male	.70	.59, .79	.70	.59, .79	.49	.36, .61	.49	.36, .62

Note: Prob. = Probability, CI = Confidence intervals; Positive Responses defined as the number of Responses Received that were neutral or positive, allowing for continued contact between landlord and tenant.

Discrimination in the English Housing Market

We then investigated the pattern of responses to inquires sent for housing ads in England to test our hypotheses. The multi-level binomial logistic regression did not reveal any statistically significant differences between inquires sent with Arabic, English, or Polish sounding names, χ^2 (2) = 0.16, p = .92. Neither did the analysis reveal any statistically significant differences between inquires sent with male of female names, χ^2 (1) = 2.88, p = .09. The interaction term for ethnicity and gender was also not statistically significant, χ^2 (2) = 1.74, p = .45. Neither of our three hypotheses were supported by data from England.

The same was true when using response type as the dependent variable. We found no effect of tenant ethnicity, χ^2 (2) = 1.44, p = .49, tenant gender, χ^2 (1) = 2.20, p = .14, or their interaction term, χ^2 (2) = 1.21, p = .55. (See Figure 1).

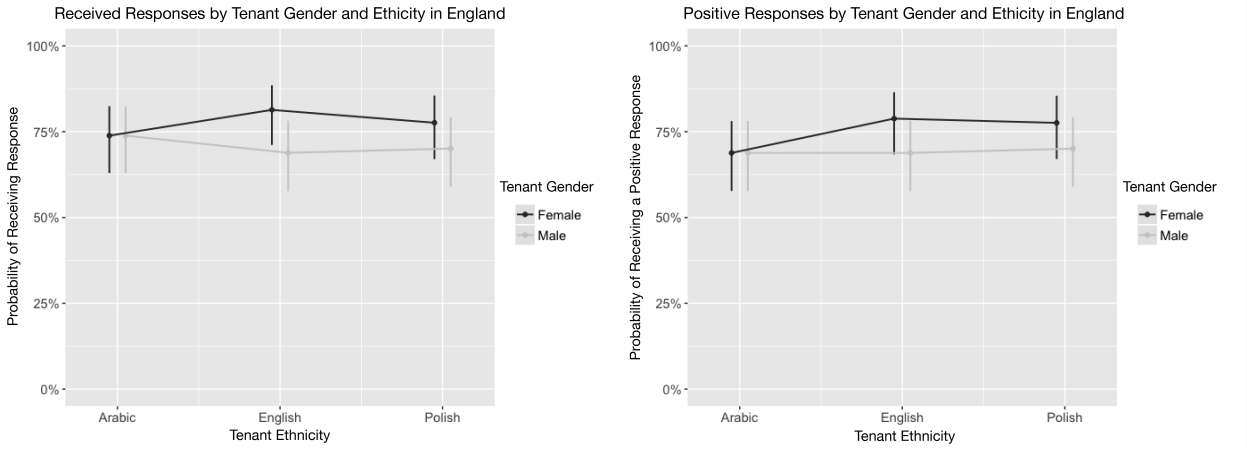

Figure 1. Received responses (Left panel) and positive responses (Right panel) by tenant gender and ethnicity in England. Jittered error bars represent the 95% confidence intervals.

Discrimination in the Polish Housing Market

After this, we investigated the pattern of responses to inquires sent for housing ads in Poland. To do this, we again used a multi-level binomial logistic regression. We found a

statistically significant effect of tenant ethnicity, χ^2 (2) = 18.31, p < .001. Inquires signed with Arabic names received less responses than inquires signed with English or Polish names. We also found a statistically significant effect of tenant gender, χ^2 (1) = 6.27, p = .01. Inquires signed with male names received less responses than inquires signed with female names. The interaction between tenant ethnicity and tenant gender was also statistically significant, χ^2 (2) = 7.31, p = .03. The effect of gender was stronger for Arabic names compared to what it was for English and Polish names.

The pattern of response types was similar. Again, the analysis revealed statistically significant differences between inquires sent with Arabic, English, or Polish sounding names, χ^2 (2) = 21.29, p < .001, and for differences between inquires sent with male and female names, χ^2 (1) = 7.89, p < .01, and their interaction term, χ^2 (2) = 8.86, p = .01. (See Figure 2).

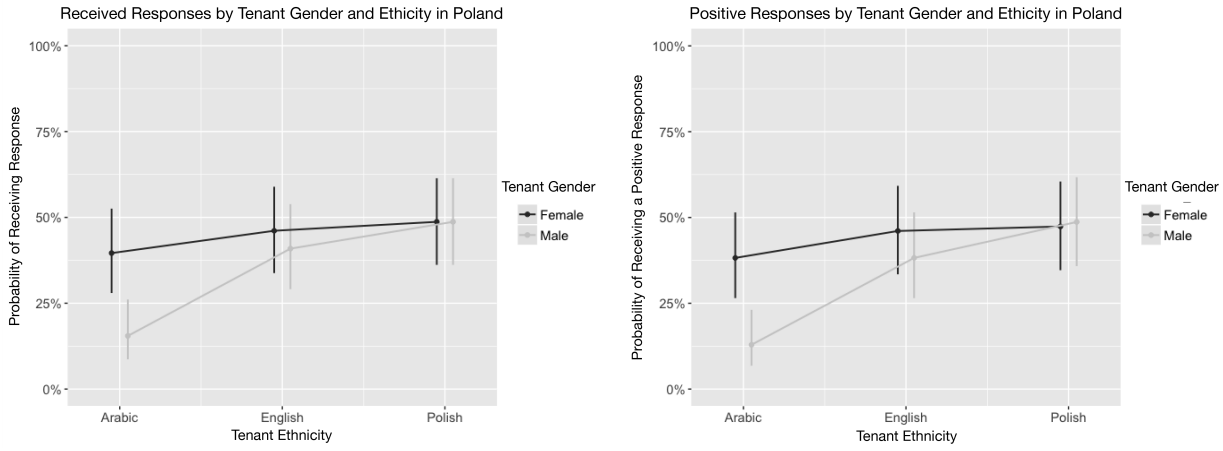

Figure 2. Received responses (Left panel) and positive responses (Right panel) by tenant gender and ethnicity in Poland. Jittered error bars represent the 95% confidence intervals.

Comparisons between England and Poland

To finally compare the probabilities of receiving a response and receiving a response between England and Poland, we conducted an exploratory multi-level binary logistic regression.

This model was similar to previous models, but we also included country as a fixed factor in the full factorial model. In reporting, we focus on the main effect of country and its potential interactions with other factors.

For the probability of receiving a response, we, as could be expected from the descriptive results, found a main effect of country, χ^2 (1) = 27.66, $p < .001$. The interaction between country and tenant ethnicity was also statistically significant, χ^2 (1) = 8.03, $p = .02$. Finally, the three-way interaction between country, tenant gender, and tenant ethnicity was statistically significant, χ^2 (2) = 7.36, $p = .03$. For the probability of receiving a positive response, the pattern was similar. The main effect of country was statistically significant, χ^2 (1) = 26.21, $p < .001$. The three-way interaction between country, tenant gender, and tenant ethnicity was again statistically significant, χ^2 (2) = 7.90, $p = .02$. The two-way interaction between country and tenant ethnicity was not statistically significant, χ^2 (2) = 5.85, $p = .05$.

Discussion

In the present field experiment, we investigated discrimination based on ethnicity and gender in the English and Polish housing markets. We sent inquires to advertisements for rental apartments. These inquires were signed by either Arabic, English, or Polish sounding male and female names. We found no evidence of ethnic or gender discrimination in England. In Poland, we, however, found evidence of discrimination of Arabic men. Our explorative comparison between the two countries revealed that it was more likely for inquires to be met with a response in England compared to Poland. Ethnic discrimination in general, and discrimination of Arabic males in particular, wer also larger in Poland compared to England.

Discrimination in the English Housing Market

The results of the current study provided no evidence of discrimination based on ethnicity and gender in the English housing market. Inquires signed by Arabic, English, and Polish sounding names were almost equally probable to be met with a (positive) response allowing for further contact between the landlord and the potential tenant. Inquires signed with female names were slightly more probable to receive a (positive) response, but the observed difference might be due to sampling error. It is encouraging that English landlords did not display any discriminatory behavior against the included groups at this stage of the process. This indicates that individuals of both genders and individuals belonging to these different ethnic groups have equal opportunity to pass the initial threshold of establishing contact with landlords. This opportunity was also relatively high, as approximately 3 out of 4 inquires were met with a response from the landlord. The current study did not, however, investigate whether or not discrimination occur in subsequent stages during the process.

In apparent contrast to many other countries in Europe, the absence of evidence for discrimination based on ethnicity and gender in the English housing market requires an explanation. A relatively large proportion of inhabitants in England are born abroad, or are second- or third generation immigrants (Office for National Statistics, 2016). These immigrant groups include also individuals of Polish and Arabic descent. It is possible that a number of the contacted landlords were immigrants themselves, which could have affected the results. It seems, however, unlikely that this would fully explain the absence of discrimination. Because previous studies have provided evidence of discrimination based on ethnicity and gender in other markets, such as job markets e.g., Booth, Leigh, & Varganova, 2011; Collier & Burke, 1986; Riach & Rich, 2002), it might be that the current housing market is an exception. Interestingly, a previous study on discrimination in the shared housing market suggests that discrimination also occurs in

England (Carlsson & Eriksson, 2015).

Discrimination in the Polish Housing Market

We found evidence of discrimination in the Polish housing market. There was no evidence of inquires signed with Arabic sounding female names or English sounding male or female names receiving less responses than inquires signed with Polish sounding names. Importantly, inquires signed with Arabic sounding male names were less likely than others to be met with a (positive) response from landlords. Compared to inquires signed with Polish sounding male names, which were met with a positive response in 49% of the cases, inquires signed with Arabic sounding male names were met with a positive response only in 13% of the cases. This means that, on average, the success rate of individuals with Arabic sounding male names in establishing contact with a landlord may be less than 1/3rd of the success rate of individuals with Polish sounding male names. Considering that only approximately 1 in 9 inquires were met with a response, it is clear that men of Arabic heritage struggle to access the private rental market in Poland. For female names, there was no evidence of discrimination based on ethnicity.

Poland is a culturally homogenous country with relatively few immigrants. Previous studies have shown that attitudes towards Arabic immigrants in Poland are relatively negative (Strzeszewski, 2005). In the current study, these negative attitudes seem to primarily affect Arabic males. These findings are in line with previous studies on discrimination in the housing market that have been conducted in Europe. Studies that have investigated both discrimination based on gender and ethnicity and have included a focus on Arabic male individuals have shown that this group suffers particular discrimination in, for example, the US (Carpusor & Loges, 2006), Sweden (Ahmed & Hammerstedt, 2008), Norway (Andersson, Jakobsson, & Kotsadam, 2012), and Finland (Öblom & Antfolk, 2017).

Consequences of Discrimination in the Housing Market

Access to housing is vital for well-being and functioning in many areas of life, including both personal and professional opportunities, such as establishing useful social networks, and being able to use public services (Mazziotta, Zerr, & Rohmann, 2015). Previous studies of the consequences of discrimination in the housing market show various undesirable economic and social consequences of discrimination, including worsening residential segregation, poor educational access, and poor employment opportunities and a decreased overall welfare access for discriminated groups (e.g., Bengtsson & Iverman, 2012, Datta & Pathania, 2016). Hence, advancing equal access to the housing market, irrespectively of ethnicity and gender, might have many desirable consequences for individuals, but also extend to include desirable social, economic, and public health consequences at a societal level.

The implications of our results are that Arabic males in Poland are at a disadvantage when trying to acquire rental housing. This discrimination might further negatively affect their access to the job market, to public welfare, and limit their social network. As discrimination of this form is illegal in Poland, these findings are informative for future policy making.

Limitations

A number of limitations need to be considered. We only included Arabic-, English- and Polish-sounding names. We did not include names of other ethnic origins in the current study. Because of this, the results can not be generalized to encompass other ethnic groups. We used two typical names for each included category of gender and ethnicity. According to Zschirnt & Ruden (2015), less typical names are often misattributed to other ethnic groups, which means that the observed discrimination may be smaller for individuals who have less typical names ethnic names.

To use response rates as a measure of discrimination is not unproblematic, in that there can exist several different reasons for not replying an inquiry. Although this might increase noise in the data, it is unlikely that it introduces systematic bias that confounds the results of the current experimental study. Moreover, the use of a correspondence test did not allow us to measure attitudes that might motivate the observed discriminatory behavior.

Conclusions

In sum, the results partly corroborate findings from existing studies on discrimination based on ethnicity and gender in housing markets across European nations. We found clear evidence of discrimination based on ethnicity and gender in the Polish housing market. Males with Arabic-sounding names are at a disadvantage. In Poland, only 13% of inquires signed with Arabic-sounding male name were met with a positive response. Contrary to expectations, we found no evidence of discrimination based on ethnicity or gender in the English housing market. In England, inquires were met with similar amounts of responses, irrespective of whether inquires were signed with Arabic, English, or Polish sounding male or female names. This current study contributes important information to the field of discrimination research in Europe.

References

Aaltonen, M., Joronen, M., & Villa, S. (2009). *Syrjintä Suomessa 2008*. Ihmisoikeusliitto ry, 6–157. Retrieved from https://yhdenvertaisuus-fi-bin.directo.fi/@Bin/b62bb65c64b9e5f81c24f8adda5bc413/1499458068/application/pdf/117259/Syrjint%c3%a4%20Suomessa%202008.pdf

Acolin, A. & Bostic, R. (2016). A field study of rental market discrimination across origins in France. *Journal of Urban Economics, 95*, 49–63. doi: 10.1080/14616718.2013.764659

458 Alexander, S. (2014). *Seven attacks in 10 days as racist gang targets Polish community in east*
459 *Belfast*. Belfast Telegraph. Retrieved from http://www.belfasttelegraph.co.uk/news/northern-
460 ireland/seven-attacks-in-10-days-as-racist-gang-targets-polish-community-in-east-belfast-
461 29924518.html
462 Andersen, H., Magnusson Turner, L., & Soholt, S. (2013). The special importance of housing
463 policy for ethnic minorities: evidence from a comparison of four Nordic countries.
464 *International Journal of Housing Policy, 13*, 20–44. doi: 10.1080/14616718.2013.764659
465 Andersson, L., Jakobsson, N., & Kotsadam, A. (2012). A field Experiment of Discrimination in
466 the Norwegian Housing Market: Gender, Class and Ethnicity. *Land Economics, 88*(2), 233–
467 240. doi: 10.3368/le.88.2.233
468 Ahmed, A. M. & Hammerstedt, M. (2008). Discrimination in the rental housing market: A field
469 experiment on the Internet. *Journal of Urban Economics, 64*, 362–372. doi:
470 10.1016/j.jue.2008.02.004
471 Bachman, B. (2016). *Diminishing Solidarity: Polish Attitudes toward the European Migration*
472 *and Refugee Crisis*. Migration Policy Institute. Retrieved from:
473 http://www.migrationpolicy.org/article/diminishing-solidarity-polish-attitudes-toward-
474 european-migration-and-refugee-crisis
475 Bates, D., Maechler, M., Bolker, B., & Walker, S. (2015). Fitting Linear Mixed-Effects Models
476 using lme4. *Journal of Statistic Software, 67*, 1–48. doi: 10.18637/jss.v067.i01
477 Bengtsson, R., Iverman, E., & Tyrefors Hinnerich, B. (2012). THB. Gender and ethnic
478 discrimination in the rental housing market. *Applied Economic Letters, 19*, 1–5.
479 doi:10.1080/13504851.2011.564125
480 Booth, A. L., Leigh, A., & Varganova, E. (2011). Does Ethnic Discrimination Vary Across

Minority Groups? Evidence from a Field Experiment. *Oxford Bulletin of Economics and Statistics, 74*(4), 547–573. doi: 10.1111/j.1468-0084.2011.00664.x

Bosch, M., Carnero, M. A., & Farré, L. (2010). Information and discrimination in the rental housing market: Evidence from a field experiment. *Regional Science and Urban Economics, 40*, 11–19. doi: 10.1016/j.regsciurbeco.2009.11.001

Brodziak, A., Różyk-Myrta, A., & Wolińska, A. (2016). Does the recent intensification of nationalistic and xenophobic attitudes in Eastern European countries adversely affect public mental health? *BMC Public Health, 16*(1), 1–7. doi: 10.1186/s12889-016-3785-3

Carlsson, M. & Eriksson, S. (2015). Ethnic Discrimination in the London Market for Shared Housing. *Journal of Ethnic and Migration Studies, 41*(8), 1276–1301. doi: 10.1080/1369183X.2014.965670

Carpusor, A. G. & Loges, W. E. (2006). Rental Discrimination and Ethnicity in Names. *Journal of Applied Social Psychology, 36*, 934–952. doi: 10.1111/j.0021-9029.2006.00050.x

Ceny ofertowe wynajmu mieszkań – kwiecień 2017. (2017). Retrieved from http://www.bankier.pl/wiadomosc/Ceny-ofertowe-wynajmu-mieszkan-kwiecien-2017-Raport-Bankier-pl-7513530.html

Chmielewski, M. (Ed.). (2013). *Ludność. Stan i struktura demograficzno-społeczna.* Narodowy Spis Powszechny Ludności i Mieszkań 2011. Warszawa: Główny Urząd Statystyczny. Retrieved from: http://stat.gov.pl/cps/rde/xbcr/gus/LUD_ludnosc_stan_str_dem_spo_NSP2011.pdf

Collier, J. & Burke, A. (1986). Racial and sexual discrimination in the selection of students for London medical schools. *Medical Education, 20*, 86–90. doi: 10.1111/j.1365-2923.1986.tb01052.x

Datta, S. & Pathania, V. (2016). For whom does the phone (not) ring? Discrimination in the rental housing market in Delhi, India. *UNU-WIDER Working Paper, 55*, 2–30. Retrieved from http://hdl.handle.net/10419/146246

Decke, D. (2016). *sjPlot: Data Visualization for Statistics in Social Science*. R package version 2.1.0. Retrieved from https://CRAN.R-project.org/package=sjPlot

Dion, K. L. (2001). Immigrants' perceptions of housing discrimination in Toronto: the housing new Canadians project. *Journal of Social Issues, 57*(3), 523–539. doi: 10.1111/0022-4537.00227

Dwelling Stock Estimates: 2014, England (2015). Housing Statistical Release. 1–19. Retrieved from https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/423249/Dwelling_Stock_Estimates_2014_England.pdf

European Commission. (2012). *Special Eurobarometer 393. Discrimination in the EU in 2012*. 3–83. Retrieved from https://www.google.fi/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0ahUKEwjZu4PQ5O_RAhWNa5oKHWBoDr8QFggkMAA&url=http%3A%2F%2Fec.europa.eu%2Fpublic_opinion%2Farchives%2Febs%2Febs_393_en.pdf&usg=AFQjCNGMQYerprCeLQbOQeOHUPOnCfGySQ&cad=rja

Equality Act 2010 (2010). Retrieved from http://www.legislation.gov.uk/ukpga/2010/15/pdfs/ukpga_20100015_en.pdf

Fernandez-Ballesteros, R., Olmos, R., Santacreu, M., Bustillos, A., & Molina, M. A. (2017). The role of perceived discrimination on active aging. *Archives of Gerontology and Geriatrics, 71*, 14–20. doi: 10.1016/j.archger.2017.02.004

Gaddis, S. M. (2015). Discrimination in the Credential Society: An Audit Study of Race and College Selectivity in the Labor Market. Social Forces 93(4), 1451–1479. doi: 10.1093/sf/sou111

Heylen, K. & Van den Broeck, K. (2015). Discrimination and selection in the Belgian private rental market. *Housing Studies, 31*, 223–236. doi: 10.1080/02673037.2015.1070798

Hodge, D. R., Zidan, T., & Husain, A. (2015). Modeling the relationships between discrimination, depression, substance use, and spirituality with Muslims in the United States. *Social Work Research, 39*(4), 223–233. doi: 10.1093/swr/svv025

Hothorn, T., Bretz, F., & P. Westfall (2008). Simultaneous Inference in General Parametric Models. *Biometrical Journal, 50*(3), 346–363. doi: 10.1002/bimj.200810425

Ilu Polaków wynajmuje mieszkania (2016). Retrieved from http://www.natechwile.pl/ilu-polakow-wynajmuje-mieszkania/

Index of private housing rental prices (IPHRP) in Great Britain: Apr 2017. (2017*). Statistical Bulletin,* 1–11. Retrieved from: https://www.ons.gov.uk/economy/inflationandpriceindices/bulletins/indexofprivatehousingrentalprices/apr2017

Kim, I. (2014). The role of critical ethnic awareness and social support in the discrimination–depression relationship among Asian Americans: Path analysis. *Cultural Diversity and Ethnic Minority Psychology, 20*(1), 52–60. doi: 10.1037/a0034529

Koss-Goryszewska, M. (2010). *Polska polityka antydyskryminacyjna wobec mniejszości narodowych, etnicznych i rasowych w świetle prawa Unii Europejskiej*. Warsaw: Instytut Spraw Publicznych. Retrieved from http://www.isp.org.pl/uploads/pdf/1740718487.pdf

MacDonald, H., Nelson, J., Galster, G., Paradies, Y., Dunn, K., & Dufty-Jones, R. (2016). Rental

Discrimination in the Multi-ethnic Metropolis: Evidence from Sydney. *Urban Policy and Research, 34*, 1–12. doi: 10.1080/08111146.2015.1118376

Mazziotta, A., Zerr, M., & Rohmann, A. (2105). The effects of multiple stigmas on discrimination in the German housing market. *Social Psychology*, *46*, 325-334. doi:10.1027/1864-9335/a0000249

Micklethwaite, J. (2016). *Police probe racist graffiti smeared on Polish centre after Brexit vote*. Evening Standard. Retrieved from http://www.standard.co.uk/news/london/police-probe-racist-graffiti-smeared-on-polish-centre-after-brexit-vote-a3281081.html

Neumark, D. (2016). Experimental Research on Labor Market Discrimination. NBER Working Papers 22022, National Bureau of Economic Research, Inc. Retrieved from http://faculty.smu.edu/millimet/classes/eco7321/papers/neumark%202016.pdf

Office for National Statistics (2016). *Overseas-born population in the United Kingdom, excluding some residents in communal establishments, by sex, by country of birth, January 2015 to December 2015*. Retrieved from https://www.ons.gov.uk/file?uri=/peoplepopulationandcommunity/populationandmigration/internationalmigration/datasets/populationoftheunitedkingdombycountryofbirthandnationality/2015/populationbycountryofbirthandnationalityjan15todec15.xls

Office for National Statistics (2013). *2011 Census analysis: Immigration Patterns of Non-UK Born Populations in England and Wales in 2011*. Retrieved from https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/internationalmigration/articles/immigrationpatternsofnonukbornpopulationsinenglandandwalesin2011/2013-12-17/pdf

Pager, D. & Shepherd, H. (2008). The Sociology of Discrimination: Racial Discrimination in

573 Employment, Housing, Credit and Consumer Markets. *Annual Review of Sociology, 34*, 181–
574 209. doi: 10.1146/annurev.soc.33.040406.131740
575 Pascoe, A. E. & Smart Richman, L. (2009). Perceived discrimination and health: A meta-analytic
576 review. *Psychological Bulletin, 135*, 531–554. doi: 10.1037/a0016059
577 Poushter, J. (2015). *Extremism Concerns Growing in West and Predominantly Muslim*
578 *Countries*. Spring 2015 Global Attitudes survey, Pew Research Center. Retrieved from
579 http://www.pewglobal.org/2015/07/16/extremism-concerns-growing-in-west-and-
580 predominantly-muslim-countries/
581 Poynting, S. & Mason, V. (2007). The resistible rise of Islamophobia. *Journal of Sociology,*
582 *43*(1), 61–86. doi: 10.1177/1440783307073935
583 Pérez, J., Fortuna, L., & Alegría, M. (2008). Prevalence and correlates of everyday
584 discrimination among U.S Latinos. *Journal of Community Psychology, 36*, 421–433. doi:
585 10.1002/jcop.20221
586 R Core Team (2008). R: A Language and Environment for Statistical Computing. *Vienna: R*
587 *Foundation for Statistical Computing*. Retrieved from https://www.r-project.org/
588 Reich, N. G., Myers, J. A., Obeng, D., Milstone, A. M., & Perl, T. M. (2012). Empirical Power
589 and Sample Size Calculations for Cluster-Randomized and Cluster-Randomized Crossover
590 Studies. *PLoS ONE, 7*(4), e35564. doi: 10.1371/journal.pone.0035564
591 Riach, P. & Rich, J. (2002). Field Experiments of Discrimination in the Market Place. *Economic*
592 *Journal, 112*, 450–518. doi: 10.1111/1468-0297.00080
593 Rogaliński, P. & Rogalińska, M. (2011). *Dyskryminacja w Polsce*. Przegląd Dziennikarski.
594 Retrieved from http://przegladdziennikarski.pl/dyskryminacja-w-polsce/
595 Singmann, S., Bolker, B., Westfall, J. & Aust, F. (2017). *afex: Analysis of Factorial*

Experiments. R package version 0.18-0. Retrieved from https://CRAN.R-project.org/package=afex

Strzeszewski, M. (2005). Sympatia i niechęć do innych narodów. *Centrum Badania Opinii Społecznej, BS/196*, 1–8. Retrieved from http://www.cbos.pl/SPISKOM.POL/2007/K_144_07.PDF

The Constitution of The Republic of Poland (1997). Retrieved from http://www.sejm.gov.pl/prawo/konst/angielski/konse.htm

Thompson, N. (2016). *Anti-Discriminatory Practice: Equality, Diversity and Social Justice (Practical Social Work Series)*. London: Palgrave Macmillan.

Thorat, S., & Newman, K. S. (2007). Caste and Economic Discrimination: Causes, Consequences and Remedies. *Economic and Political Weekly, 42*(41), 4121–4124.

Trends in International Migrant Stock: Migrants by Destination and Origin. (2015) United Nations, Department of Economic and Social Affairs. Retrieved from: http://www.un.org/en/development/desa/population/migration/data/estimates2/data/UN_MigrantStockByOriginAndDestination_2015.xlsx

Urbańska, W. (2007). Studenci a rynek mieszkaniowy. Wyniki badań ankietowych. *Problemy Rozwoju Miast, 3*, 104–112. Retrieved from http://cejsh.icm.edu.pl/cejsh/element/bwmeta1.element.desklight-22611239-04c3-4f91-a529-4f8832f50c10/c/PRM_2007-3_10_Urbanska.pdf

Wencel, K. (2011). *Dyskryminacja cudzoziemców w dostępie do usług mieszkaniowych w Polsce. Między teorią a praktyką*. Stowarzyszenie Interwencji Prawnej. Retrieved from: http://interwencjaprawna.pl/docs/ARE-511-dyskryminacja-mieszkaniowa.pdf

Öblom, A. & Antfolk, J. (2017). Ethnic and gender discrimination in the private rental housing

619 market in Finland: A field experiment. *PLoS ONE*, *12*(8). Retrieved from
620 https://doi.org/10.1371/journal.pone.0183344