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Discrimination in the Housing Market as an Impediment to European Labour Force Integration: The Case of Iceland

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Abstract

Labour market integration, and free movement of people, has been one of the key features behind the European Economic Area (EEA). In fact, the EEA states that the free movement of people is "perhaps the most important right for individuals, as it gives citizens of the 31 EEA countries the opportunity to live, work, establish business and study in any of these countries." However, unless citizens within in the EEA are granted equal possibilities, the free movement will be of less value. This paper sets out to study the role of the rental housing market, in particular from the perspective of equal possibilities between majority (domestic) and minority (foreign) groups in Iceland. With the largest minority group of the Icelandic workforce being Polish, it is important from an integration perspective to study potential differences between native and Polish workers in possibilities to enter the rental housing market. By conducting an internet field experiment, we show that Polish men in fact face a more difficult situation on the rental housing market than others, which serves as an impediment to the free flow of labour for this group of immigrants.

Keywords: Discrimination; labour migration; housing market; field experiment; Iceland

JEL-classifications: J15; J61; R31

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1. Introduction

Access to the housing market serves several purposes, both to the individual and to greater society. A transparent, accessible rental housing market with low transaction costs facilitates both immigration (domestic and non-domestic) and naturalization of immigrants. When people can move freely, with low friction, they have greater possibilities to move to where they may find employment or education from which society benefits. The free mobility of people and of the labour force is also one of the major benefits of the European Economic Area (EEA). The EEA states that the free movement of people is "perhaps the most important right for individuals, as it gives citizens of the 31 EEA countries the opportunity to live, work, establish business and study in any of these countries."[3]

There are a few aspects of the housing market may result in a less mobile labour force between countries, such as between member states of the EEA, which is sub-optimal. This is usually referred to as spatial mismatch. For instance, Liu and Painter (2012) find that immigrants in the US are more spatially mismatched than the white population. That is to say, immigrants live further from job opportunities than do US citizens. In another study, using Swedish data, Åslund et al. (2009) find that refugees who were placed (through the Swedish refugee dispersal policy) at locations with poor job opportunities in 1990-1991 have found it more difficult to enter the labour market since 1999. This is evidence of some market distortion. For example, strict building codes and/or strict zoning laws may lead to an under supply of housing, price controls (such as rent control) lead to excess demand and cues, which prevents the individual from moving freely. Discrimination is one other such aspect that decreases, the individual's possibility to move to where job opportunities are greater. Therefore, discrimination in the housing market can be viewed as a disturbance in the labour market, whatever the cause of the discrimination. If the housing market is less accessible to immigrants than to non-immigrants, segregation becomes more likely[4], and as a result, the job market may become less accessible to immigrants who, because of discrimination, are forced to accept housing accommodation far from where the job opportunities are located.

The aim of this paper is study the occurrence of discrimination in the Icelandic rental market for housing. We should state at the outset that the discrimination can be either rational, in the statistical sense, or based on tastes. When discrimination is ration, it makes sense for owners of flats to discriminate between well-defined groups of tenants because some may on

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[3] http://www.efta.int/eea/policy-areas/persons
[4] Discrimination can, however, result in less segregation. If landlords prefer mixed apartment buildings they would discriminate against the majority group, without ethnic preferences.

average be more reliable and there is asymmetric information about the future behavior of a tenant. Thus rational simply implies that either gender or a nationality makes better tenants on average. We are interested in the occurrence of discrimination based on ethnicity, with the primary focus being ethnic groups that have immigrated because of job opportunities. Following the literature on measuring the occurrence of discrimination in housing markets, we do this by conducting an internet field experiment.

The remainder of the paper is structured as follows: Section 2 provides a brief overview of the literature on field experiments of discrimination in the housing market. Section 3 provides a foundation for the institutional background of Iceland; with an insight into the Icelandic labour market from the immigration perspective and the Icelandic rental market for housing. In Section 4 we present the experimental design. Results are presented in Section 5 and Section 6 concludes.

2.   Field experiments on housing markets

A large number of field experiments of the occurrence of discrimination on rental housing markets have been conducted. Field experiments are a powerful tool to study the occurrence of discrimination in housing markets. With increasing use of the internet for the advertisement of vacancies, this literature has increased. Prior to that discrimination was studied using matched pair field experiments.[5] Matched pair field observations are costly. They are conducted by using two persons that only differ in some physical appearance, for example gender or ethnicity. This is however difficult to accomplish, and with matched pair field experiments the researcher can never completely rule out that the observed outcome is in fact due to some other, unmeasured difference between the two subjects, such as behavior. In order to minimize potential errors, the subjects have to undergo extensive training, which often can be time consuming. An elegant solution to this problem that has been developed is to conduct internet field experiments, which eliminates the need for test subjects and training. Rather than signaling group belonging (ethnic, sexual preference or gender) by appearance, this can be signaled either by name, or by information given in an email.

The first internet field experiment of discrimination in the housing market was conducted by Carpusor and Loges (2006). They used three names to signal *white-American*, *African-American*, and *Arab* ethnicities. The three names were randomly assigned to advertised vacancies and an email, expressing interest in the apartment, was sent out. The experiment was

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[5] Riach and Rich (2002) provides an overview of this body of research

conducted both before, and after the Iraqi conflict. Their results suggest that African-American males are the greatest victim of discrimination in the Los Angeles area housing market. The methodology presented by Carpusor and Loges (2006) was further developed by Ahmed and Hammarstedt (2008). Rather than randomly assigning names to each advertised vacancy, Ahmed and Hammarstedt sent out three email in response to each advertisement, two with Swedish names (male and female) and one signaling Arab ethnicity (male). Their aim was to both study the occurrence of discrimination based on ethnicity, as in Carpusor and Loges (2006), and discrimination based on gender. Ahmed and Hammarstedt also analyze the responses using a probit-approach, compared to Carpusor and Loges, who only present raw response rates. The results indicate that having a name signaling Arab ethnicity decreases the probability of a successful application for housing (measured as a positive response) with 26 percent compared to having a name that signals a Swedish male. In addition, the results indicate that having a name that signals a Swedish female, increases the probability of success in applying for housing.

Following both these early studies of discrimination in rental housing markets, a large number of studies have been conducted on discrimination of different groups on housing markets in a large number of countries. For example, studies have looked at; homosexuals and same-sex couples (Ahmed et al. 2008; Ahmed and Hammarstedt, 2009; Lauster and Easterbrook, 2011); and gender (Andersson et al. 2012; Bengtsson et al., 2012). The largest part of the literature is however aimed at analyzing and studying the occurrence of discrimination towards ethnic minorities as was the primary focus of the two earlier papers. For instance, Hanson and Hawley (2011) study racial discrimination in US cities. As with Carpusor and Loges (2006) they find that landlords discriminate against African-American names. In addition they find that discrimination is more severe in neighborhoods that are closer to racial "tipping points". While studies conducted in the US primarily focus on discrimination of African-Americans (e.g. Carpusor and Loges, 2006; Hanson and Hawley, 2011; Hanson et al., 2011), European studies often focus on discrimination against immigrants from the Middle East or Africa (e.g. Ahmed and Hammarstedt, 2008; Baldini and Federici, 2011; Andersson et al., 2012; Bosch et al., 2010).

To the best of our knowledge this is the first paper to directly and explicitly address discrimination against the largest minority group of labour-immigrants. Immigration due to labour market participation differs quite a bit from other immigration, e.g. refugees. The latter is commonly the responsibility of government, when it comes to solving housing arrangements, while the former is normally left to solve their own housing on the existing market. While

failure to arrange sufficient housing for refugees may result in more long-term effects on integration, failure for labour market immigrants may rather result in less labour immigration and a more difficult situation for domestic firms to find workers that match the demanded skills.

3. The institutional setting: Icelandic immigration and the rental housing market

In this section we want to provide a broad picture of the institutional setting of Iceland. Two things are of importance, a) immigration in Iceland, and b) the Icelandic rental market for housing.

Immigration in Iceland

In terms of immigration, Iceland differs from almost all other European countries. According to *Eurostat* (statistics presented in figure 1), the main portion of immigration to Iceland in 2015 were either returning citizens or immigrants from member states of the European Union, where the latter is the largest portion. Immigration falling outside of these two categories (among others, refugees from the ongoing Syria crisis) only accounted for roughly 13 percent. Compared to the other Nordic countries, this statistic stands out, Norway (43 percent), Denmark (41 percent), Finland (46 percent) and Sweden (58 percent) all had a vastly larger share of immigration from non-EU countries. The result is a different immigrant population in Iceland, compared to other European countries, and specifically compared to other Nordic countries. Two other countries, Lithuania and Romania, share this relatively low level of non-EU immigration, but these two countries have a lower level of immigration of EU citizens too.
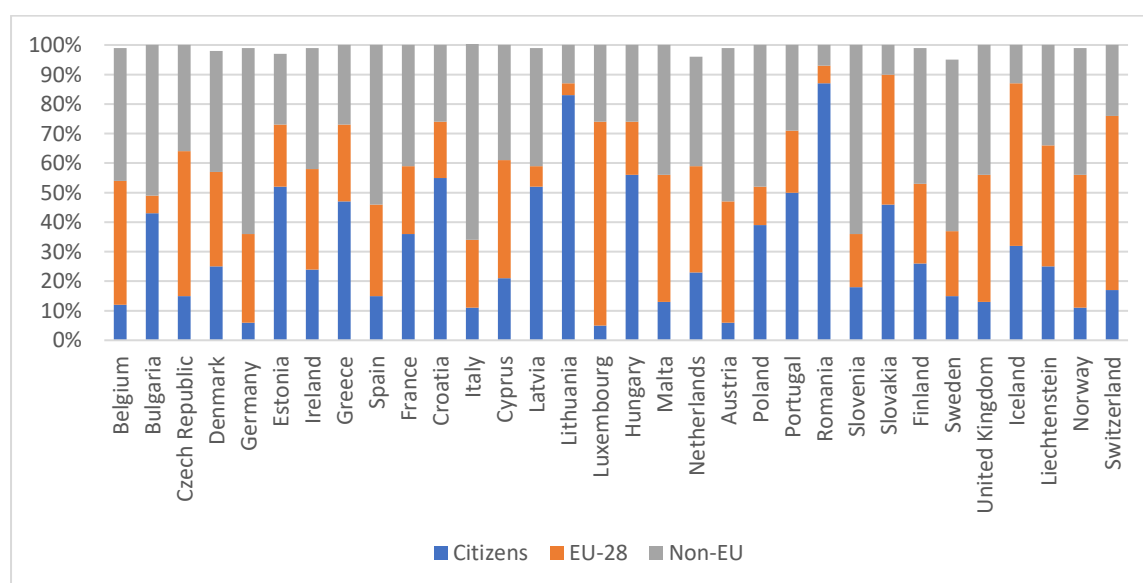

Figure 1. The different types of immigration, European countries, 2015. Source: *Eurostat.*

We can also break down the immigrant groups in the category EU-28. In Iceland, the largest group of immigrants originate from Poland. Polish immigrants made up 37.5 percent of total immigration in 2015, followed by Lithuanians (5.1 percent), and Filipinos (5 percent). Furthermore, Polish people make up the largest immigrant group of both genders with Polish males being 41.2% of all male immigrants while Polish women were 34% of all female immigrants in 2015.[6]

The immigration of Polish workers into the booming construction sector as well as Polish workers and workers from other European countries into the tourism sector is the main reason why Iceland has been able to enjoy high growth and low unemployment for a number of years without rising inflation. The rate of growth of GDP was 4.1% in 1015, 7.2% in 2016 and is expected to be 5.3% in 2017. At the same time unemployment has fallen from 4% in 2015 to 2.7% in 2017. The inflation rate has hovered below 2% for the past four years. The net migration rates for foreign and Icelandic national is given in the table below. Note that in 2016 the net inflow was around 2% of the population aged 20-59.

Table 1. Net migration to Iceland (% of population)

	Net migration	Foreign nationals	Icelandic nationals
'05	2.01	2.05	-0.05
'06	2.88	3.05	-0.17
'07	2.44	2.59	-0.15
'08	0.15	0.43	-0.28
'09	-2.41	-1.39	-1.02
'10	-0.99	-0.29	-0.70
'11	-0.69	-0.15	-0.55
'12	-0.23	0.24	-0.47
'13	0.61	0.74	-0.13
'14	0.49	0.87	-0.38
'15	0.83	1.34	-0.51
'16	1.85	2.03	-0.18
Q2/16	1.20	1.22	-0.03
Q2/17	2.29	2.14	0.14

Net migration of persons aged 20-59 relative to total population of the same age at the beginning of the year.
Annual figures for 1995-2016 and cumulative figures for Q2/2016 and Q2/2017. Source: Monetary Bulletin of the Central Bank of Iceland 2017/3.

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[6] Source: *Statistics Iceland*.

The Icelandic rental market for housing

Rental markets for housing differ significantly between countries. Kemeny (1995) defines two types of rental markets, *Dualist* and *Unitary*. A dualist rental market is defined as a market where there are different types of landlords. Commonly, there will be a private rental market open to everyone, and there will be a public rental market, subsidized by the government and exclusively aimed towards low income households. In the unitary rental market there may still be non-profit landlords, but in this case they receive the same subsidies as all other landlords.

The Icelandic rental market, using Kemeny's definition, is a dualist rental market. There is a relatively small number of government subsidized rental units aimed toward low income households and there is an ordinary private market. The ordinary market is dominated by small private landlords, i.e. private individuals who may own one, or more, apartments that they sublet long-term. Advertisement of vacant apartments can of course be done in a number of ways, but the two most common venues on the internet are *Bland*[7] and *Mbl*[8]. Bland is the largest online market place in Iceland, where it is possible to buy and sell virtually anything. In order to participate in the marketplace, users have to set up an account and afterwards they can interact through Bland's messaging system. Mbl on the other hand is centered on advertisement of apartments and land, both for sale and for rent. Interested renters can send the seller a message through the website where they have to fill out their email address and their phone number accompanied by a short message to the landlord. The landlord can only respond to their enquiry by email. Landlords have to set up an account with Mbl in order to advertise their property. Companies and individuals can put up advertisements on both websites free of charge.[9]

4. The field experiment

In conducting the field experiment there are several aspects to consider. In this section we will present the details of the experimental design. One key issue that should be acknowledged beforehand is that the aim of the experiment is to study the occurrence of discrimination. This discrimination is most interesting in the phase of actually signing a contract for an apartment. However, by the use of a field experiment, we are only able to study the phase of first contact

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[7] *https://bland.is*

[8] *http://www.mbl.is/fasteignir/*

[9] There are other websites and platforms that advertise apartments for rent (*Leigulistinn* and *Leiga.is* to name a few) but they all either require payments for market access (*Leigulistinn* and *Leiga.is* are such examples) or do not have email as the primary method of communication between market participants (this would include various Facebook groups). We decided not to include those websites for those two reasons.

between the landlord and the prospective tenant. It is possible that discrimination would differ in the following phases from initial contact to the actual signing of a rental agreement.

Choosing the names of the fictitious applicants

As previously described, the largest portion of immigrants in Iceland originates in Poland. Therefore we will use Polish names for our experiment, one male and one female. In order to compare, and be able to measure the occurrence of discrimination on the rental market for housing, we also need two Icelandic names. According to *Statistics Iceland*, on the 1st of January 2015 the most common male double name was Jón Þór and the most common female double name was Anna María. Furthermore, Gunnar is a very common name in Iceland and was the third most popular in 2015. The choice of Icelandic names reflected these facts since we chose *Jón Þór Gunnarsson* to be the name of our Icelandic male fictitious applicant and *Anna María Guðmundsdóttir* to be the name of our Icelandic female applicant.[10] For the fictitious Polish applicants, we used statistics from the *Ministry of Interior and Administration*, which published statistics on the most popular first names and surnames in 2015 in Poland. To increase the likelihood that the names would be perceived by landlords as Polish we chose names that were popular in Poland and that are almost exclusively used in Poland.[11] For the first names, we chose the male name *Franciszek* and the female name *Zuzanna*.[12] For the surnames, we chose the male surname *Zieliński* and the female surname *Wiśniewska*.[13]

Creating the application messages and email accounts

The next step in our experimental design was to create templates to be used to apply in messages sent to the owners of available apartments. In order to minimize similarity and the risk of the research being exposed, we created different email accounts at different email providers. The resulting email accounts were anna_maria_gudmundsdottir@yahoo.com, franciszek.zielinski@gmail.com, zuzanna.wisniewska@yandex.com and jon.thor.gunnarsson@outlook.com. Furthermore, we created four different versions of an application message. All four versions were composed of four parts: a greeting, an introduction,

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[10] Data on the most popular female and male names on the 1st of January 2015 were available on the official website of Statistics Iceland in 2016 but are no longer available. But Statistics Iceland will send the 2015 data by email upon request.

[11] We used the website Behind the Name (*https://www.behindthename.com*) to gain information about the geographical usage of the names.

[12] *Franciszek* was the 8th most common male first name in Poland in 2015 while Zuzanna was the most common female name.

[13] Zielinski was the 9th most common male surname in 2015 and Wisniewska the 2rd most common female surname in that same year.

a short statement of interest, and an ending. An example of an application message for Franciszek is as follows[14]:

> *Hello,*
> *My name is Franciszek Zieliński and I am interested in renting*
> *the apartment that you have advertised as available for rent.*
> *Best regards,*
> *Franciszek*

This is a short and concise message and the other messages are virtually identical in terms of information given for each *fictitious* applicant. The only factor that differs between application messages is the name given, and thereby, their gender and ethnicity.

Application procedure

The experiment was conducted from November 7th, 2016 to March 18th, 2017. During this time, our applicants applied to all apartment advertisements on Mbl.is and Bland.is without restrictions to specific locations, cost or size. To avoid running the risk of the research being discovered, we let thirty minutes to one hour pass between sending applications for the same apartments. Since there was a possibility that the typeface of a particular letter might influence the outcome, the design of the letters alternated between our applicants. We used a random number generator to randomize the order in which the messages were sent and the design of messages that were sent (although it was not possible to alter the typeface of the messages on Bland). Although this does not eliminate order effects it ensures that this type of bias is spread randomly.[15] We discarded any advertised vacancies offering only short-term rental (less than 12 months), those who requested a response from a specific gender or contact by phone, ordinary mail or to appear in person. We do not expect that any of these exclusions will steer our results in any direction. Of course, landlords requesting their tenants to belong to a specific gender will certainly discriminate. It is possible that landlords requesting possible tenants to show up in person differ from other landlords, with respect to degree of discrimination, but there is no clear reason to assume this to be the case. We recorded the time and date of the application, the email or Bland username of the landlord, if communication with the landlord was done through email or Bland's messaging system, the type of apartment in the advertisement, whether the advertisement was written in English or Icelandic, whether there

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[14] All of the four templates - in Icelandic and translated into English - are available from the corresponding author upon request.
[15] The statistical software STATA was used for random number generation.

was a picture of the property in the advertisement, the address of the apartment, whether the apartment was located in the capital region of Iceland or not, whether the landlord was a private person or a company, the name and gender of the landlord (when available), whether the landlord's name was foreign-sounding, the number of rooms in the apartment, whether the price was given, and the rental cost per month.

Classifying the responses from the landlords

To begin with, we noted whether the landlords replied to the messages sent enquiring about their rental properties. If they emailed back, we noted whether they invited the applicant for further contact and asked for more information about the applicant. Additionally, we noted whether the landlord invited the applicant to a showing without requesting any further information about the applicant. We recorded the time and date of the response message and any other information that was not present in the advertisement, such as the name of the landlord from which we deduced his or her gender and ethnicity – and the rent for the apartment. In order to minimize the inconvenience to the landlords, we swiftly and politely declined any further invitations for further contact or to a showing.

Ethical considerations of the experiment

Conducting an experiment of this sort requires that we observe the behavior of landlords without their consent. This poses an ethical dilemma. If we had, in advance, asked for the landlord's permission the experiment would have been impossible, as there is no way to control for the changes in behavior to be expected when knowing you are part of an experiment. We have done our best to avoid or minimize the potential costs occurred by landlords in the experiment by promptly replying to all landlords when they have contacted us.

5.   Results from the experiment

Descriptive analysis

Our *fictitious* characters Franciszek, Zuzanna, Jón and Anna each applied to 127 apartments. In Table 2 we show the call back rates and share of applications that resulted in invitations to further contacts with the landlords or to showings. The results presented in Table 2 suggest that there is ethnic discrimination present in the Icelandic housing market. Anna had the highest call back rate of the four applicants. She received replies from the landlords to about 51 percent of her applications. The Icelandic male, Jón, got a similar rate of response or to 50 percent of his applications. The Polish female, Zuzanna, fared only marginally worse as she had a call

back rate of 47 percent. The Polish male, Franciszek, however did have a significantly lower rate of response to his applications as he had a call back rate of only 39 percent.

The call backs that we received were either negative – where the applicant was informed that the apartment was no longer available – or positive. In Table 2 the positive call backs are divided into two categories. The category *Invited to further contacts or to a showing* includes responses where the applicant was invited either for further contacts – where most commonly he was asked to provide the landlord with additional information about himself – or to a showing of an apartment. We additionally included a subset of those responses in the category *Invited to a showing* where the applicant was directly invited to a showing.

With regards to Anna, we found that about 39 percent of her applications led to positive call backs in the sense that she was invited by landlords to either further contacts or to showings of apartments. About 12 percent of Anna's applications resulted in invitations to showings. For Jón, 40 percent of the applications generated invitations from landlords to further contacts or to showings. About 11 percent of Jón's applications led to his being invited to showings. Zuzanna's applications led to positive call backs in roughly 39 percent of cases and invitations to showings in 8 percent of cases. Lastly, Franciszek received positive call backs in nearly 28 percent of cases and invitations to showings in 6 percent of cases.

Comparing responses from landlords in metropolitan and non-metropolitan areas in Table 3, makes it abundantly clear that the probability of being invited to further contacts or to showings was higher in metropolitan areas. Around 41 percent of Anna's applications in metropolitan areas led to invitations to further contacts or to showings, compared to only 22 percent in non-metropolitan areas. This was also true for Jón, Zuzanna and Francizek. The corresponding figures for Jón were 41 and 33 percent, 40 and 22 percent for Zuzanna and 29 and 11 percent for Franciszek.

Lastly, Table 2 illustrates that, for all applicants, the probability of being invited to further contacts or to a showing was somewhat higher when the landlords were male than when they were female. Male landlords invited Anna, Jón and Zuzanna to further contacts or to showings in response to 68 percent of their applications but in only 40 percent of Franciszek's applications. Female landlords on the other hand invited Anna to further contacts in 61 percent of cases, Jón 67 percent, Zuzanna 56 percent and Franciszek 39 percent.

Table 2
Mean call back rates, share of applications that led to invitations to further contacts or to showings and share of applications that led to invitation showings

	Jón		Anna		Franciszek		Zuzanna	
Call back rate (percent) N = 127	50,4		51,2		38,6		47,2	
	Invited to further contacts or to showings	Invited to showings	Invited to further contacts or to showings	Invited to showings	Invited to further contacts or to showings	Invited to showings	Invited to further contacts or to showings	Invited to showings
Total (percent) N = 127	40,2	11,02	39,4	11,8	27,6	6,3	38,6	7,9
Metropolitan area[a] (percent) N = 118	40,7	11,02	40,7	11,9	28,8	6,8	39,8	7,6
Non-metropolitan area (percent) N = 9	33,3	11,1	22,2	11,1	11,1	0	22,2	11,1
Landlord is a company (percent) N = 12	50	16,7	25	0	25	16,7	50	16,7
Landlord is a private person (percent) N = 115	39,1	10,43	40,9	13	27,8	5,2	37,4	7
Landlord is a male (percent) N = 25	68	12	68	20	40	8	68	12
Landlord is a female (percent) N = 18	66,7	22,2	61,1	11,1	38,9	5,6	55,6	11,1
Landlord is an immigrant (percent) N = 3	100	0	66,7	0	33,3	0	100	0
Landlord is a native (percent) N = 40	65	17,5	65	17,5	40	7,5	60	12,5

[a] Metropolitan area includes Reykjavík, Kópavogur, Hafnarfjörður, Garðabær, Mosfellsbær, Seltjarnarnes, Kjósarhreppur and Bessastaðahreppur.

Estimations of the probability of being invited to further contacts and to showings

We estimate the effects of various independent variables on the probability of being invited to further contacts and to showings using two different regression models.[16] Both the independent and dependent variables that were included in the model are presented in Table 3.

Table 3
Explanatory variables used in the estimation of the probability of being invited to further contacts and being invited to showings

Variable	Explanation
Dependent variables:	
Invited to further contacts or to showings	1 if the individual was invited to further contacts or showings 0 otherwise
Invited to showings	1 if the individual was invited to a showing 0 otherwise
Independent variables:	
Rooms	Number of rooms in the apartment
Area	The apartments area in square metres
Rent	The apartments monthly rent in ISK
Company	1 if the landlord is a company 0 otherwise
Metropolitan area	1 if the apartment is located in Reykjavík, Kópavogur, Hafnarfjörður, Garðabær, Mosfellsbær, Seltjarnarnes, Kjósarhreppur, Bessastaðahreppur 0 otherwise
Female	1 if the landlord is a female 0 if the landlord is a male
Female*	1 if the landlord is a female 0 otherwise (including not specified)
Immigrant	1 if the landlord has a foreign sounding name 0 otherwise
Franciszek	1 if Franciszek is the applicant 0 otherwise
Anna	1 if Anna is the applicant 0 otherwise
Zuzanna	1 if Zuzanna is the applicant 0 otherwise

Marginal effects of the independent variables are presented in Table 4. In Models (1) and (3) we do not include instances where the gender of the landlord was unknown but in Models (2) and (4) we do. In neither of these models have we included interaction terms, as explained above.

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[16] The binary variable Immigrant was excluded from all the regression models since there were only three recorded cases in the sample of landlords being immigrants. Including the variable would thus provide limited information on the difference in the probability of being invited for further contacts or to a showing or only to a showing between native and immigrant landlords.

Model (1) shows that the probability of Franciszek being invited to further contacts or to showings is almost 27 percent lower than for Jón but the independent variables of the model are not jointly significant. In Model (2) we use a different definition of the female variable –so that we do not exclude observations where the gender of the landlord is unknown in contrast to Model (1) – which leads to a greater number of observations being included. The probability of Franciszek being invited to further contacts or to showings is around 13 percent lower than for Jón. If the landlord is female that increases the likelihood of being invited to further contacts or to showings by about 17 percent. Lastly, a greater number of rooms has a significant and negative effect on the probability of being invited for further contacts or to a showing while the effect of higher rent is positive. The independent variables are jointly significant at the 1% level.

In Model (3) the independent variable Metropolitan area is not included since it correlates perfectly with the Female variable (the tetrachoric coefficient is 1 in this case). Estimates of the marginal effects of the remaining variables show that the probability of being invited to a showing is around 12 percent lower if the landlord is a female compared to a male. A greater number of rooms has a significant and positive effect on the probability of being invited to a showing. The variables are jointly significant at the 10% level. In Model (4) we replace the Female variable with the Female* variable which leads to a greater number of observations being included. The result is that none of the independent variables are independently or jointly significant.

Estimates of the marginal effects via OLS

In Table 5 we present the results of the linear regression estimated via OLS using robust standard errors where the Female variable is used. Model (5) shows that the probability of Francizek being invited for further contacts or to a showing is 27 percent lower than for Jón but the independent variables in the model are not jointly significant. Model (6) adds interaction terms but the result is that only the constant term of the regression is significant and the variables are jointly significant at the 10% level. In Model (7) we see that the probability of being invited to a showing is almost 40 percent higher in the metropolitan area of Iceland than outside it and around 12 percent lower when the landlord is female compared to male. The number of rooms has a positive and significant effect on the probability of being invited for further contacts or to a showing. Model (8) adds interaction terms, of which none are significant. The probability of being invited to a showing is around 14 percent lower when the

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landlord is a female but 40 percent higher when the apartment is located in the metropolitan area of Iceland. The independent variables of the model are jointly insignificant.

Table 4. Probit estimates (marginal effects) of the probability of being invited for further contacts and being invited to showings

Variable	Invited to further contacts or to showings		Invited to showings	
	(1)	(2)	(3)	(4)
Rooms	-0.025	-0.120***	0.139**	0.006
	(0.084)	(0.036)	(0.060)	(0.023)
Area	-0.002	-0.001	-0.001	-0.000
	(0.004)	(0.001)	(0.003)	(0.001)
Rent / 10000	0.010	0.030***	-0.009	0.004
	(0.013)	(0.006)	(0.008)	(0.004)
Company	-0.031	-0.041	0.046	0.051
	(0.112)	(0.070)	(0.075)	(0.056)
Metropolitan area	-0.032	-0.212**		-0.036
	(0.235)	(0.102)		(0.073)
Franciszek	-0.269**	-0.126**	-0.066	-0.026
	(0.110)	(0.055)	(0.064)	(0.034)
Anna	-0.027	-0.017	0.030	0.011
	(0.112)	(0.058)	(0.074)	(0.038)
Zuzanna	-0.026	-0.025	-0.039	-0.027
	(0.111)	(0.058)	(0.068)	(0.034)
Female	-0.092		-0.118**	
	(0.091)		(0.056)	
Female*		0.170**		-0.025
		(0.067)		(0.036)
–2 log likelihood	9.974	56.18	14.65	7.55
Observations	148	436	140	436

Standard errors in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$

Table 5. OLS estimates (marginal effects) of the probability of being invited to further contacts and being invited to showings

Variable	Invited to further contacts or to showings		Invited to showings	
	(5)	(6)	(7)	(8)
Constant	0.716***	0.651**	-0.251**	-0.239
	(0.254)	(0.287)	(0.124)	(0.145)
Rooms	-0.027	-0.065	0.122**	0.130*
	(0.090)	(0.107)	(0.056)	(0.070)
Area	-0.002	0.000	-0.000	-0.001
	(0.004)	(0.004)	(0.003)	(0.003)
Rent / 10000	0.010	0.003	-0.011	-0.008
	(0.013)	(0.014)	(0.010)	(0.013)
Company	-0.029	-0.052	0.054	0.008
	(0.122)	(0.140)	(0.084)	(0.099)
Metropolitan area	-0.027	0.113	0.392***	0.402**
	(0.241)	(0.269)	(0.148)	(0.181)
Franciszek	-0.270**	-0.010	-0.054	-0.100
	(0.116)	(0.590)	(0.070)	(0.257)
Anna	-0.027	-0.027	0.027	0.027
	(0.114)	(0.116)	(0.085)	(0.086)
Zuzanna	-0.027	-0.027	-0.027	-0.027
	(0.115)	(0.117)	(0.073)	(0.076)
Female	-0.092	-0.122	-0.122*	-0.144*
	(0.091)	(0.105)	(0.063)	(0.080)
Franciszek × Rooms		0.152		-0.030
		(0.198)		(0.113)
Franciszek × Area		-0.009		0.004
		(0.008)		(0.005)
Franciszek × Rent / 10000		0.027		-0.009
		(0.030)		(0.020)
Franciszek × Company		0.093		0.184
		(0.304)		(0.192)
Franciszek × Metropolitan area		-0.560		-0.043
		(0.580)		(0.308)
Franciszek × Female		0.121		0.088
		(0.222)		(0.115)
F - statistic	1.15	1.03	1.63	1.28
Adjusted R^2	0.0057	-0.0174	0.0423	0.0154
Observations	148	148	148	148

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1 In this estimation we only include observations where gender was indicated and omit observations when it was not. See Table 6 for results when these observations were also included.

Table 6 presents the results of the OLS regression with robust standard errors where the Female* variable is used. Model (9) shows that the probability of Francizek being invited for further contacts is 13 percent lower than for Jón and 21 percent lower when the apartment is located in the metropolitan area. When the landlord is female the probability of being invited for further contacts or to a showing increases by 17 percent. A greater number of rooms has a negative and significant effect on the probability of being invited for further contacts or to a showing while an increase in the rent has a positive and significant effect. The independent variables of the model are jointly significant at the 1 percent level. In Model (10) we add interaction terms that are all insignificant. The model shows the probability of being invited for further contacts is 25 percent lower when the apartment is located in the metropolitan area. When the landlord is female the probability of being invited for further contacts or to a showing increases by 19 percent but by less for Francizek. A greater number of rooms has a negative and significant effect on the probability of being invited for further contacts or to a showing while an increase in the rent has a positive and significant effect. The independent variables of the model are jointly significant at the 1 percent level. Models (11) and (12) have invited to a showing as a dependent variable but none of the independent variables are jointly or independently significant.

Table 6. OLS estimates (marginal effects) of the probability of being invited to further contacts and being invited to showings for a larger sample

Variable	Invited to further contacts or to showings		Invited to showings	
	(9)	(10)	(11)	(12)
Constant	0.368***	0.407***	0.050	0.078
	(0.114)	(0.132)	(0.089)	(0.112)
Rooms	-0.125***	-0.145***	0.007	-0.000
	(0.035)	(0.041)	(0.017)	(0.020)
Area	-0.001	-0.001	-0.000	0.000
	(0.001)	(0.002)	(0.001)	(0.001)
Rent / 10000	0.030***	0.031***	0.003	0.004
	(0.006)	(0.007)	(0.004)	(0.005)
Company	-0.040	-0.044	0.051	0.023
	(0.086)	(0.101)	(0.059)	(0.066)
Metropolitan area	-0.208**	-0.247**	-0.017	-0.054
	(0.100)	(0.121)	(0.080)	(0.104)
Franciszek	-0.128**	-0.282	-0.028	-0.140
	(0.059)	(0.232)	(0.038)	(0.135)
Anna	-0.018	-0.018	0.009	0.009
	(0.062)	(0.062)	(0.042)	(0.042)
Zuzanna	-0.028	-0.028	-0.028	-0.028
	(0.061)	(0.062)	(0.038)	(0.038)
Female*	0.172***	0.187**	-0.021	-0.016
	(0.066)	(0.077)	(0.036)	(0.044)
Franciszek $\times$ Rooms		0.080		0.026
		(0.082)		(0.041)
Franciszek $\times$ Area		-0.001		-0.001
		(0.003)		(0.002)
Franciszek $\times$ Rent / 10000		-0.007		-0.003
		(0.012)		(0.007)
Franciszek $\times$ Company		0.018		0.113
		(0.194)		(0.143)
Franciszek $\times$ Metropolitan area		0.155		0.149
		(0.201)		(0.119)
Franciszek $\times$ Female*		-0.058		-0.022
		(0.151)		(0.072)
F - statistic	8.88	5.49	1.24	1.40
Adjusted R^2	0.1042	0.0943	-0.0041	-0.0123
Observations	436	436	436	436

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. This estimation differs from that in Table 5 in including also observations when the gender of the landlord was not knows. Thus the dummy variable for females takes the value 1 if that gender was indicated but zero otherwise.

6. Concluding discussion

The aim of this paper has been to study the occurrence of discrimination in the Icelandic rental market for housing as an impediment to the free flow of labour in the European Single Market. In the literature, there are several studies looking into discrimination in the housing market, focusing on different groups, and different countries. The primary aim of this paper has been to focus on discrimination of the largest group of worker immigrants in Iceland, namely those of Polish origin, who have the right to work in the country due to Iceland's membership of the Single Market.

The immigration of Polish workers, as well as those of other European nations, has been important for the economy of Iceland in recent years and helped keep a lid on inflation in the current economic boom. This immigration has helped to sustain a non-inflationary boom during which unemployment has been very low without triggering inflation. Moreover, the immigration has helped economic policy by reducing the need for an active monetary or fiscal policy to curb the economic boom. It is therefore important that the housing market not act as a friction for this migration of workers to the country.

We conduct an internet field experiment of having four fictitious individuals apply for advertised vacancies. The findings suggest that there is in fact discrimination in the Icelandic rental housing market. Out of the four fictitious individuals that we have included in this study, the one who is discriminated against is the Polish male, our fictitious Franciszek, who happens to be the one most important for the Icelandic economy. The estimates vary, but the results of the full sample probit model show that the Polish male has between 13 to 27 percent (depending on the sample) lower probability of a positive response when sending an application to an advertised vacant apartment. This discrimination that we find evidence of implies that labour mobility may be reduced to some extent, although it does not imply that Polish males are completely excluded from the housing market. The Polish workers will have to wait longer for finding a place to live, share accommodation and hence have lower utility, or commute longer distances.

It remains to be studied to what extent the discrimination is rational or based on prejudices.[17] Perhaps it is rational to prefer an Icelandic woman called Anna to a Polish male as a tenant if the former is more likely to uphold higher standards of cleanliness and less likely to damage the property. Thus nationality and gender can be used as a proxy for the data relevant to the landlord. The alternative hypothesis is that the discrimination is based on the taste, landlords

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[17] See Phelps (1972), amongst others, on the theory of statistical discrimination.

preferring someone who speaks Icelandic or is a woman without there being any rational reason for it.[18] But we know of no data that can be used to test this hypothesis.

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[18] See Becker (1959) on discrimination based on taste.

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Appendix

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