

Discrimination in Access to Housing: A Test on Urban Areas in Metropolitan France

Julie Le Gallo*, Yannick L'Horty**, Loïc du Parquet***
and Pascale Petit**

Abstract – We measure the extent of discrimination in access to rental housing in the private sector using a test in the 50 largest urban areas in Metropolitan France, covering several grounds of discrimination: age, origin, place of residence and combinations thereof. The protocol consisted of sending, between June and December 2016, five fictitious applications in response to a selection of 5,000 advertisements for private rental housing spread throughout Metropolitan France. We check whether discrimination in access to housing depends on the characteristics of the applicants, those of the advertiser and those of the local context. We do not highlight any discrimination based on the applicant's age. We do find a positive effect of reporting living in low-rent housing or in a housing estate. We also find significant discrimination according to origin, which penalises applicants whose surnames and first names indicate a North African or African origin.

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Reminder: The opinions and analyses in this article are those of the author(s) and do not necessarily reflect their institution's or Insee's views.

* CESAER UMR1041, AgroSup Dijon, INRAE, Université de Bourgogne Franche-Comté (julie.le-gallo@agrosupdijon.fr); ** ERUDITE, Université Gustave Eiffel, UPEC, TEPP-CNRS (yannick.lhorty@u-pem.fr; pascale.petit@u-pem.fr); *** Université du Mans, GAINS et TEPP-CNRS (loic.duparquet@univ-lemans.fr)

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A landlord cannot reject a tenant on the basis of ethnic origin, age, gender, sexual orientation or any of the other criteria prohibited by law. It is contrary to the principle of equality and constitutes an affront to human dignity. That is why discrimination is punishable by law and exposes the perpetrator to three years' imprisonment and a fine of €45,000 under article 225-2 of the French Penal Code. Despite this punitive legal framework, housing is seen by nearly one French person in two as one of the main areas likely to produce discrimination, behind employment and police checks (Défenseur des Droits, 2017). Discrimination in access to housing also generates an economic cost for the community. People who face discrimination incur higher costs in finding a home and are limited in their choice of location, which reduces their residential mobility. This can fuel processes of urban segregation and result in misallocation of space, which in turn hinders access to employment and training. Indeed, while urban segregation can be seen in the absence of discrimination in the housing market, it can be even more critical in the presence of such discrimination. Highlighting such situations is therefore useful not only for analysing the factors of the spatial divisions that create the territorial separation of social groups, but also for defining the most relevant public policies. Conventional measures to combat urban segregation, which aim to organise the social mix of neighbourhoods or to open them up through urban renewal operations, do not explicitly target the issue of discrimination in access to housing. Therefore, this question covers both challenges relating to knowledge for research and essential challenges relating to the very design of public policies.

In order to objectively measure discrimination in access to housing, employment or other markets, the most widely used method is that of "testing", which consists of comparing the answers obtained in response to an advertisement (here, a property advertisement) by two applicants who are similar in all respects except for the characteristic the effect of which is to be tested. This method has been applied in the United States since the 1980s and has provided a wealth of experimental evidence of discrimination in access to housing, particularly for ethno-racial discrimination, which is the most studied form of discrimination (Yinger, 1986; Page, 1995; Choi *et al.*, 2005; Hanson & Hawley, 2011). It has also been applied in numerous

European countries.¹ With the proliferation of the internet and property advertising sites, the correspondence test, which consists of sending fictional application emails, has become the most efficient way to carry out tests on the housing market. In a recent overview, Flage (2018) identifies 29 scientific studies that have applied this method in 15 different countries. He concludes that applicants who appear to have a non-French origin due to the sound of their surname are two times less likely to be invited to view rental housing than other applicants.

Tests have been used frequently in France in other areas, mainly in the labour market, and to study various forms of discrimination: gender (Duguet & Petit, 2005; Petit, 2007), apparent origin (Berson, 2011), reputation of the place of residence (Bunel *et al.*, 2016), religion (Adida *et al.*, 2010; Pierné, 2013), and the combined effects of multiple forms of discrimination (Duguet *et al.*, 2010; L'Horty *et al.*, 2011; Petit *et al.*, 2014). However, it has still not been widely used for the housing market, with the exception of a small number of studies performed on restricted samples and/or targeted at specific territories (Bonnet *et al.*, 2015; Acolin *et al.*, 2016; Bunel *et al.*, 2017).

Our objective is to measure and interpret discrimination in access to rental housing in the private sector using a test covering large urban areas to measure three forms of discrimination: age (discrimination against young people), origin (distinguishing between Maghribi and West African) and the type of residence of the applicant (low-cost housing or social housing) at the time of making contact. Our protocol consisted of sending five fictitious applications in response to a selection of 5,000 advertisements for private rental housing spread throughout the 50 largest urban areas in Metropolitan France. This results in an experimental database of 25,000 observations, which we are exploiting statistically.

The article is structured in the following manner. First, we provide a brief overview of the literature on discrimination in access to housing. In a second section, we present the test collection protocol. The findings are presented for each type of discrimination in a third section. We conclude with a summary of the main findings and their implications in terms of public policy.

1. For Sweden: Ahmed *et al.*, 2008, 2010; Bengtsson *et al.*, 2012; Carlsson & Eriksson, 2014. For Spain: Bosch *et al.*, 2010. For Italy: Baldini & Federici, 2011. For Belgium: Heylen *et al.*, 2015. For Greece: Drydakis, 2011.

1. Discrimination in Access to Housing: an Overview of the Literature

The few studies that have measured discrimination in access to housing in France are based on small samples and/or cover particular territories. Thus, Bonnet *et al.* (2015) exploit a campaign conducted in spring 2009 in response to 250 advertisements for property available to rent in Île-de-France, during which those involved telephoned the landlords, revealing personal information in accordance with a pre-established protocol. Acolin *et al.* (2016) sent emails for six applicants, five of whom had a surname suggesting a non-French origin, in response to 300 advertisements published online over a two-month period between April and May 2014, making a total of 1,800 responses all throughout France. These two studies conclude that there is strong discrimination according to ethnic origin in access to housing without being able to really pinpoint it geographically or interpret its causes.

Bunel *et al.* (2017) studied the extent of discrimination in access to housing faced by applicants of Maghribi origin in Paris through a testing campaign conducted between the beginning of April and the end of May 2016. The researchers sent four messages requesting to view housing in response to 504 property advertisements from private individuals or estate agents, making a total of 2016 responses. They conclude that there is strong discrimination against individuals of Maghribi origin in access to housing in Paris and that it has little to do with the supposed financial insecurity of such individuals. The reference individual of French origin has a response rate of 18.7% to his requests to view housing. For the individual of Maghribi origin, that rate is 12.9%, meaning that he is a third less likely to receive a favourable outcome to his viewing request. If the Maghribi applicant states that he is a civil servant, his response rate is 15.5%, which remains below that of the applicant of French origin not stating his working situation. When the applicant of French origin sends the same stability signal, his response rate rises to 42.9%. A signal of professional and financial stability strongly increases the chances of access to housing only for applicants of French origin, which suggests strong preference-based discrimination (as theorised by Becker) against Maghribi applicants. This result is verified whether the advertisement is from a private individual or an estate agent.

This is in sharp contrast to the literature that has been developed in other countries, particularly in the United States, where tests have been applied to access to housing since the 1970s and where there is a wealth of experimental evidence of discrimination, although ethno-racial discrimination is the most studied (Yinger, 1986; Page, 1995; Ondrich *et al.*, 2000, 2003; Zhao, 2005; Zhao *et al.*, 2006; Ahmed & Hammarstedt, 2008; Ahmed *et al.*, 2010; Bosch *et al.*, 2010; Hanson & Hawley, 2011). All these studies show that minorities are victims of differential treatment in the property market. Overall, such applicants are contacted less frequently and the number and quality of goods presented to them are lower. Flage (2018), on the basis of a survey of almost 30 studies using the correspondence test method, concludes that there is a difference up to double between majority and minority ethnic applicants.

In general, the studies show that discrimination in the housing market can vary according to the characteristics of the landlord, the type of property rented, the environment in which the property is located and signals of integration and/or economic stability sent by the applicant. In the United States, the first studies to consider the ethnic environment at a disaggregated level are those by Yinger (1986), Page (1995) and Roychoudhury & Goodman (1996). Since then, Ondrich *et al.* (2003) and then Hanson & Santas (2014), using larger samples, have clarified the relationship between the proportion of white people in a neighbourhood and the extent of discrimination. Their findings indicate the existence of a critical tipping point (neighbourhood tipping) in the distribution of discrimination. Thus, Ondrich *et al.* (2003) demonstrate that discrimination is lower in neighbourhoods in which minorities are over-represented and Hanson & Santas (2014) demonstrate that discrimination is highest in relatively mixed neighbourhoods.

In order to identify the role played by statistical discrimination (as theorised by Arrow), several authors have combined the ethnic or religious signal with a signal suggesting either a high social class (command of formal language), a level of integration (command of the language) or greater professional stability (good professional situation). Overall, whatever form it takes, a good signal reduces the extent of discrimination, though does not make it disappear completely (Massey & Lundy, 2001; Ahmed *et al.* 2010; Bosch *et al.*, 2010; Baldini & Federici, 2011; Drydakis, 2011).

The role played by estate agents is more ambiguous. In their overview of the literature, Oh & Yinger (2015) point out that estate agents play a central role in the process of directing applicants (Racial and Ethnic Steering) towards neighbourhoods where their ethnicity is most represented. According to a test in Belgium, carried out by Heylen *et al.* (2015) to measure the proportion of estate agents agreeing to screen out rental applicants of non-French origin, estate agents seem to constitute a mass means of clients transmitting discrimination. The earlier findings of Ahmed & Hammarstedt (2008) confirm this conclusion for Sweden. However, the findings of Carpusor & Lodge (2006) for the city of Los Angeles indicate that estate agents do not discriminate more than private owners, while those of Bosch *et al.* (2010) for various Spanish towns even find that estate agents play a moderating role.

2. The Data Collection Protocol

The protocol consists of performing 100 tests in each of the 50 largest French urban areas, giving a total of 5,000 tests. In each territory and for each private rental advertisement, a test consists of sending short messages from five fictitious individuals in response to housing advertisements to request further information from the landlords in preparation for a viewing and of noting how the landlords respond. The 50 largest urban areas have a total of 36.6 million inhabitants, amounting to 57.1% of the French population.

2.1. Profiles of the Applicants

Of the five fictitious applicants, two will be included in all responses. The three others are

drawn at random for each advertisement tested, in a pool of six. Details are provided in Table 1 on the profiles of the fictitious individuals, whose other characteristics are otherwise similar.

Matched-pair comparisons of the answers given to these different applicants make it possible to measure discrimination according to several criteria (origin, place of residence and age of the rental applicant) and how they are combined. When we measure the effect of origin, for which we have to neutralise the effect of nationality: indeed, a non-French nationality may be perceived negatively by a landlord in the housing market because it signals a risk of geographical mobility and, therefore, of leaving the housing. So in order to capture the effect of the origin, all messages from applicants whose names do not sound “French” explicitly mention their French nationality either directly or indirectly as in the case of one applicant (Mounir Mehdaoui) whose French nationality is signalled by stating that he is a civil servant (see Box).

All of our applicants are men. We have decided not to explore the effect of the gender of the applicants, which is a whole separate issue. The extensive overview of the literature by Flage (2018) indicates that men are penalised in the housing market and that such penalties are more pronounced for people of non-French origin. On average, in the 14 studies that have explored this phenomenon, a female applicant has a 30% greater chance of being invited to view an apartment than a male and 50% between male and female applicants who are not of French origin.

Any differences in the treatment of applicants may result from statistical or preference-based discrimination. In order to identify these two

Table 1 – Profiles of the eight fictitious applicants

	Individual Forename SURNAME	Age	Sound of forename and surname	Other characteristics
For all advertisements	Sébastien PETIT	41	French	Neutral
	Mohamed CHETTOUH	41	Maghribi	Neutral
Alternately, for every second advertisement	Mounir MEHDAOUI	41	Maghribi	Civil servant
	Kévin DURAND	22	French	Neutral
	Frédéric ROUSSEAU	41	French	Living in social or low-cost housing
	Désiré SAMBOU	41	West African	Forename does not sound Muslim
	Nordine M'BAREK	22	Maghribi	Neutral
	Karim BENCHARGUI	41	Maghribi	Living in social or low-cost housing

Sources: *Testing* DALTON – TEPP CNRS.

sources of discrimination, following the examples of Massey *et al.* (2001), Ahmed *et al.* (2010), Bosch *et al.* (2010), Baldini *et al.* (2011), and Drydakis (2011), we add a signal of the quality of the applicant. We chose to refer to public servant status in the contact message, as did Bunel *et al.* (2017). This reference, which indicates a candidate's financial stability, will make it possible to distinguish the effect of the two forms of discrimination mentioned above. Matched-pair comparisons of these profiles enable us to identify the respective effects of each characteristic on access to housing.

2.2. Selection of Advertisement

Our experiment is focused on private housing rentals, excluding seasonal holiday lets. The advertisements tested are published either by private owners or by estate agents. By testing advertisements from both private individuals and estate agents, we are able to determine whether any discrimination is linked to the personal preferences of the estate agents, the landlords and/or the characteristics of the neighbourhoods, or whether estate agents play an active role in steering applicants, assumptions that are widely discussed in the literature (Choi *et al.*, 2005; Oh & Yinger, 2015).

We have chosen to focus on an intermediate type of property, properties with two main rooms (known as "F2" on the French market), as this type of property is the most in demand and the most available. Restricting our test to F2 properties does not prevent us from considering a wide variety of property quality, surface area, location and rental cost. We respond to recent advertisements, published less than three days previously, checking the most used property rental websites in France: 'Le Bon Coin', 'seloger.com', 'logic-immobilier', etc. The advertisements are selected at random each day from those that meet our search criteria: advertisements published less than three days previously, for a F2-type apartment, in one of the communes of the urban area, excluding seasonal lets. We selected only advertisements for which we could identify both the nature of the advertiser (estate agent or private individual) and the location of the property (name of the neighbourhood within the commune). We never tested the same advertiser twice.

The characteristics of the advertisements to which we responded are the following. The median and average rental cost of these F2 apartments

is around €500. A fifth of the advertisements are for furnished apartments. More than 70% of these advertisements are from the website 'Le Bon Coin', which is, according to data from Médiamétrie, the most viewed and most used website in France. Both the response process and the content of messages sent in response to rental advertisements are described in the Box.

In total, in the 50 largest urban areas of Metropolitan France, 5,008 advertisements were tested, which corresponds to sending 25,040 personalised messages requesting information for a viewing. Of these advertisements, almost two thirds are from private individuals (3,235) and almost a third are from estate agents (1,773). We have enhanced this base by taking into account additional variables that describe the characteristics of the advertisement: its publication date, the amount of rent and charges, the duration of the lease, the surface area of the housing, the floor and the location of the property.

2.3. The Selectiveness of the Housing Market

Overall, of the 5,008 advertisements tested (5 messages sent to each one), 1,228 provided at least one response, a response rate of 24.5%. Therefore, three quarters of the advertisements to which we responded were unanswered. The response rate is particularly low for advertisements published on the website 'Le Bon Coin', with a response rate of 11.6%. Thus, 'Le Bon Coin' provides the majority of the advertisements to which we responded (70.5%), but the minority of the advertisements that received a response (33%). The frequency of non-responses varies greatly from one urban area to another. The maximum number of advertisements that received at least one response is 45, in Perpignan, while the minimum is 13, in Annecy.

We focus on the non-negative responses received by candidates. Of all advertisements tested, 20.9% (1,140 advertisements) received at least one non-negative response and 79% (3,868 advertisements) received no non-negative response (Table 2). Of the advertisements that resulted in at least one non-negative response, advertisers gave no negative responses to all five candidates only 17% of the time. In other words, for almost 83% of the 1,140 non-negative responses in the sample, advertisers were selective and did not respond to all candidates. Differences in treatment between

candidates – whether or not they are sent a response – are therefore evident in the data from this test.

These figures differ depending on whether the advertisements are published by private owners or by estate agents. On the one hand, the chances of receiving a response are higher when the advertiser is a professional: of all the advertisements tested, at least one non-negative

response was received for 14.1% of the 3,235 advertisements published by private individuals, compared with 38.5% of the 1,773 advertisements published by estate agents. On the other hand, professionals are less selective than private owners: for those advertisements for which at least one non-negative response was received, 23.3% of professionals gave a non-negative response to the five candidates against only 7.7% of individual offerers.

Box – Messages sent by applicants in response to the rental advertisements

The order in which the applications of the five individuals were sent to the same advertisement was determined by drawing lots, so that across the entire sample, each individual's message was sent first the same number of times. At the same time, we swapped the messages between the applicants during the test campaign, so that unequal treatment could not be attributed to the different quality of the messages (we alternate two sets of messages, referred to as J1 and J2, throughout the test period).

The five fictitious individuals send short email messages on the same day, a few hours apart, in response

Hello,
This advertisement fits what I'm looking for in this area right now quite well. How can I view this apartment? What documents are required to rent it?
Many thanks,
Sébastien PETIT

Dear Sir/Madam,
The apartment listed in this advertisement is what I'm looking for. Would it be possible to view it? I would like to prepare the rental documents, can you please tell me which documents are required?
Thank you in advance,
Mohamed Chettouh
Telephone: XXX
Email: XXX
Date of birth: 13/03/1975
French Nationality

Hello,
I've been a civil servant for 15 years and I've just been transferred. I'm looking for an apartment in this neighbourhood and I'm interested in your advertisement. Can I please view it? Can you also please tell me which documents you will need?
Kind regards,
Mounir MEHDAOUI

Hello, I'm interested in this apartment for rent. Could you please tell me how to arrange a viewing and what formalities must be completed? I'm of French nationality and I'm about to turn 41.
Thank you in advance.
Désiré SAMBOU

to the selected advertisements. Their distinctive characteristics were explicitly stated in the mandatory fields to be completed to send the message (surname/forename) or in the body of the message (age/current place of residence/professional status).

Below, we reproduce the messages from the fictitious individuals corresponding to message set J1. Note that the identity, telephone number and email address of the individual are included in the mandatory fields to be completed for all applications:

Hello, is it still possible to view this apartment because I'm interested in it? As I'm currently living in low-cost housing, I don't know which documents you want me to provide.
Thanks in advance,
Frédéric Rousseau

Dear Sir/Madam,
I'm looking for a place like the one you're renting. When could we meet to arrange a viewing and what papers do I have to prepare (I can confirm that I am of French nationality). However, I'm not free tomorrow afternoon because I'm taking my driving test.
Thank you for your response.
Nordine M'BAREK

Hi, I'm 22 years old and I'm looking for an apartment to move into. I'm interested in the one in this ad, could I view it, can we make an appointment? What documents should I bring?
Thanks,
Kévin Durand

Hello,
I'm currently living in social housing and I want to move to this neighbourhood. Can I view this apartment? I'm going to prepare the rental documents, can you please tell me which administrative documents I need?
Kind regards,
Karim Benchargui – born 17/02/1976 in Paris

Table 2 – Breakdown of the number of non-negative responses per advertisement tested

Number of non-negative responses per advertisement	All advertisements N = 5 008		Advertisements published by estate agents N = 1 773		Advertisements published by private owners N = 3 235	
	Number	%	Number	%	Number	%
None	3,868	79.1	1,090	61.8	2,778	85.9
1 or more	1,140	20.9	683	38.5	457	14.1
1	367	32.2	148	21.7	219	47.9
2	245	21.5	136	19.9	109	23.8
3	172	15.1	110	16.1	62	13.6
4	162	14.2	130	19.0	32	7.0
5	194	17.0	159	23.3	35	7.7

Reading note: Among advertisements published by real estate agencies tested, 683 advertisers gave at least one non-negative response – 148 to only one candidate (or 21.7%) and 159 to all five (or 23.3%).

Sources: *Testing* DALTON –TEPP CNRS.

3. Results

3.1. Strong Discrimination based on the Origin of the Applicants from both Estate Agents and Private Owners

The first test results are shown in Table 3. The success rate of our reference applicant, Sébastien Petit, is 13.9% (he received a total of 698 non-negative responses following his 5008 contacts with advertisers). In contrast, the success rate of the applicant whose surname indicates a Maghribi origin, Mohamed Chettouh, is 10.1% (507 non-negative responses following his 5,008 contacts). Therefore, the difference is 3.8 percentage points or, in relative terms, 27.4% less chance for the applicant of Maghribi origin. This difference is statistically significant with the 1% threshold. The success rate of Désiré Sambou, whose surname indicates an African origin, is 9.4%. It is comparable with that of Sébastien Petit, the “reference” candidate, only for responses to the same advertisements; in this area, Petit has a success rate of 13.6% (not shown in Table 3), i.e. 4.2 percentage points more than Sambou.

Statistical inference is carried out through a block bootstrap-type procedure in which re-sampling is performed within each urban area, making it possible to take the “urban area” dimension into account. We correct for the multiple comparison problem linked to the fact that we perform multiple tests using the same data sample. Failure to make this correction may result in false positives. Following Carlsson & Eriksson (2014), in their study on ethnic discrimination on the

Swedish rental market, we apply the correction procedure proposed by Benjamini & Hochberg (1995). In contrast to the Bonferroni correction, this procedure is not too conservative and is suitable for cases where the overall conclusions do not depend on a single test.² Indeed, in this case, it is reasonable to tolerate some type I errors (false positives) to increase the statistical strength of the tests. Table 3 shows the critical probability obtained both with and without adjustment. Regardless of the indicator considered and even with adjustment, the tests conclude that there is discrimination between the two applicants, with a risk of error of 1%.

We have also checked that these differences in success rates were not due to differences in the order in which applications were sent. To that end, we have recalculated the rate of non-negative responses obtained by the applicants, depending on whether their application was made first, second, third, fourth or fifth in the order in which the five similar requests were made to the advertiser. This is also a way of checking that the random permutations in the orders in which requests were sent have been properly carried out. Indeed, success rates are higher when the request is sent first, before the other applicants, and the overall pattern of success rates decreases along with the order in which they are sent. We

2. The Benjamini & Hochberg procedure is implemented by defining $k = \max\{i : p_i \leq (i/m)q\}$, where i the test i , m is the number of tests performed, q is the significance threshold. We reject the null hypotheses H_{0j} for $j = 1 \dots k$. This procedure, which was initially developed for independent test statistics, is also valid when the test statistics are positively correlated, as in multiple treatment comparisons for a variable, as is the case here. q must then be replaced by $q/\sum(1/\lambda)$ in the previous formula. See also Bender & Lange (2001) for a non-technical presentation of the different correction procedures.

Table 3 – Tests for discrimination based on origin

	Number of requests sent	Number of non-negative responses	Success rate (%)	Difference (in percentage points) and test
Reference (PETIT)	5,008	698	13.9	
French applicant of Maghribi origin (CHETTOUH)	5,008	507	10.1	-3.8*** (<0.001) [<0.001]
French applicant of Sub-Saharan African origin (SAMBOU)	2,776	262	9.4	-4.2*** (<0.001) [<0.001]

Notes: Significant at a threshold of 1% ***, 5% **, 10% *; unadjusted critical probability between brackets; critical probability adjusted using the Benjamini & Hochberg method (1995) between square brackets; block bootstrap statistical inference (10,000 replications).
Sources: *Testing DALTON* – TEPP CNRS.

also note that Sébastien Petit more frequently receives non-negative responses to these requests than Mohamed Chettouh or than Désiré Sambou, by fixing the order in which they are sent. The data therefore indicate that there is discrimination in access to housing, based on the origin of the rental applicants.

We also investigate whether the nature and strength of the discrimination differ depending on whether the advertisement is from a private individual or an estate agent. Multiple studies have already demonstrated the existence of differences in behaviour between private individuals and estate agents: Choi *et al.* (2005), Ahmed *et al.* (2008), Bosch *et al.* (2010), and Heylen *et al.* (2015) find that, overall, professionals discriminate less than private individuals, while Carpusor *et al.* (2006) found the opposite to be true. It is a case of determining whether estate agents who are part of the process of discrimination in access to housing are acting in accordance with their own preferences or whether they are responding to requests made more or less explicitly by their landlord clients.

We first checked that the results were similar according to different definitions of the success indicator under consideration. We take three indicators into account: (i) The rate of non-negative responses, that is, the number of non-negative responses received (by telephone or email) by the applicant divided by the number of requests sent, (ii) the rate of “Appointment in Principle” indicates the number of times the applicant has been proposed the principle of a visit, or even a date, divided by the number of demands sent; and (iii) the number of contacts, i.e. the number of times that the offerer contacted the applicant

(by telephone with or without message, or by email).

Then, by breaking down the results according to whether the advertisements were published by private individuals or estate agents, we show that the hierarchy of success rates is globally the same, depending on the origin of the applicant.³ The levels of the success rates are clearly higher when the advertisements come from estate agents, but the categorisation of the applicants is similar. For the applicant of Maghribi origin, in comparison with the reference applicant, the differences in success rate based on origin are statistically different from zero. The conclusion is therefore the same if only estate agents or private individuals are considered, with the exception of the rate of “appointment in principle” in the case of estate agents, which is significant at 10% without the correction and is no longer significant with the correction (Table 4-A). Therefore, estate agents barely seem to play any role in mitigating discrimination when considering the results of this test.

In the case of the French applicant of African origin, the difference in the rate of non-negative responses is no longer significant with the correction and the difference in the frequency of appointments in principle is significant at 10% (Table 4-B). Without correction, two tests in three therefore conclude that estate agents discriminate against applicants of African origin, as do private individuals. With the correction, only the difference in the number of contacts remains significantly different from zero, with the mitigating role of estate agents appearing more clearly here.

3. The detailed results are available from the authors on request.

The third test compares the two applicants whose surnames evoke a non-European origin (Table 4-C). It is limited to the 2,776 advertisements for which Désiré Sambou sent an email. The results depend on the status of the advertiser and on the indicators considered. Only private individuals discriminate between these two profiles, giving preference to the applicant of

Maghribi origin over the applicant of African origin, when looking at the differences in non-negative responses or the number of contacts, while the difference between the number of appointments in principle is not significant. In contrast, no difference is found in the way these two applicants are treated by property professionals (they are both equally discriminated against

Table 4 – Tests for discrimination based on origin with three indicators of success

A – PETIT / CHETTOUH

	Difference in the rate of non-negative responses (in percentage points)	Difference in the rate of appointments in principle (in percentage points)	Difference in the number of contacts (%)
All advertisements	+3.8*** (<0.001) [<0.001]	+2.2*** (<0.001) [<0.001]	+0.06*** (<0.001) [<0.001]
Estate agents	+4.5*** (<0.001) [0.005]	+1.9* (0.071) [0.149]	+0.07*** (<0.001) [0.001]
Private individuals	+3.4*** (<0.001) [<0.001]	+2.4*** (<0.001) [<0.001]	+0.05*** (<0.001) [<0.001]

B – PETIT / SAMBOU

	Difference in the rate of non-negative responses (in percentage points)	Difference in the rate of appointments in principle (in percentage points)	Difference in the number of contacts (%)
All advertisements	+4.2*** (< 0.001) [<0.001]	+2.3*** (< 0.001) [<0.001]	+0.06*** (< 0.001) [<0.001]
Estate agents	+3.7** (0.047) [0.116]	+0.771 (0.603) [0.698]	+0.05** (0.035) [0.081]
Private individuals	+4.6*** (< 0.001) [<0.001]	+3.2*** (< 0.001) [<0.001]	+0.07*** (< 0.001) [<0.001]

C – CHETTOUH / SAMBOU

	Difference in the rate of non-negative responses (in percentage points)	Difference in the rate of appointments in principle (in percentage points)	Difference in the number of contacts (%)
All advertisements	+1.1 (0.145) [0.269]	+0.4 (0.480) [0.588]	+0.01 (0.240) [0.387]
Estate agents	+0.7 (0.692) [0.775]	-0.2 (0.846) [0.883]	+0.001 (0.982) [0.984]
Private individuals	+1.3** (0.020) [0.056]	0.7 (0.126) [0.230]	+0.02** (0.011) [0.037]

Notes: *Significant at a threshold of 1% ***, 5% **, 10% *; unadjusted critical probability between brackets; critical probability adjusted using the Benjamini & Hochberg method (1995) between square brackets; block bootstrap statistical inference (10,000 replications).
Sources: *Testing* DALTON – TEPP CNRS.

in comparison with the applicant whose surname indicates a French origin).⁴

3.2. No Discrimination based on Address and Age

We now test the influence of the applicant's age by comparing the results obtained by Sébastien Petit, who states in his message that he is 41 years old, and those obtained by Kevin Durand, who indicates that he is 22 years old. We limit ourselves here to the 2,465 advertisements for which Kevin Durand sent a reply, 919 of which are advertisements published by an estate agent with 1,546 being published by a private individual. Table 5 shows that there are no significant differences between the two applicants of French origin when the rate of non-negative responses is used as the indicator. This is also the case for the other two indicators, except for "appointments in principle" in the case of advertisements published by private individuals and without correction. The applicant in his forties then has an advantage over the younger applicant, who is discriminated against in respect of obtaining a viewing for a rental property. However, this result is no longer significant when multiple comparisons are corrected. After correction, age therefore never appears as a discriminating factor for French surnames, regardless of the indicator used.

The test on the effects of age can also be carried out for applicants of Maghribi origin (Table 5).

We limit ourselves here to the 2,439 advertisements for which the applicant Mbarek sent an email. These tests are not significant, except for the advertisements published by private individuals for the three indicators. The effect is the reverse of the previous one: the older applicant is at a disadvantage relative to the younger one. Discrimination based on age differs in accordance with origin: in response to an advertisement published by a private individual, the young applicant is sometimes penalised if he is of French origin but is always at an advantage if he indicates that he is of Maghribi origin by his surname.

We also test the effect of the applicant's place of residence, by explicitly stating an address in social housing or in low-cost housing when contacting the advertiser. We limit ourselves here to the 2,462 advertisements for which the applicant Rousseau sent a request. This type of effect is only found in the case of private individuals for the difference in response rate and the number of contacts. The effect is then negative, meaning that Frédéric Rousseau, the applicant who indicates that he lives in low-cost housing or social housing in his contact message, has an advantage over the reference applicant. One interpretation is that claiming to be leaving low-cost housing or social housing to move into a privately rented apartment in a neutral or favoured neighbourhood

4. In the rest of the article, we carry out these tests for each urban area and show that discrimination based on origin is significant only in a small number of urban areas.

Table 5 – Tests for discrimination based on address and age

Applicant	Number of requests sent	Number of non-negative responses	Success rate (%)	Difference (in percentage points) and test
French origin, young (DURAND)	2,462	365	14.8 %	+0.89 (0.361) [0.495]
French origin, living in low-cost housing (ROUSSEAU)	2,465	366	14.8 %	-1.3 (0.184) [0.322]
Maghribi origin, young (MBAREK)	2,439	262	10.7 %	-0.6 (0.290) [0.418]
Maghribi origin, living in low-cost housing (BENCHARGUI)	2,424	271	11.0 %	-0.9 (0.302) [0.418]

Notes: Significant at a threshold of 1% ***, 5% **, 10% *; unadjusted critical probability between brackets; critical probability adjusted using the Benjamini & Hochberg method (1995) between square brackets; block bootstrap statistical inference (10,000 replications).
Sources: *Testing* DALTON – TEPP CNRS.

is an indicator of upward social mobility and of an improved living standard, which sends a positive financial signal to landlords regarding the future tenant's ability to pay his rent.

There is a similar test for applicants who indicate that they are of Maghribi origin by their surname. We limit ourselves to the 2,464 advertisements for which the applicant Benchargui sent a response. Again, we find that address has no effect, except in the case of private individuals for the number of contacts when not adjusted. The effect is negative, meaning that Benchargui, the applicant who indicates that he lives in low-cost housing or social housing in his contact message, also has an advantage over the reference applicant. However, when correction is made for multiple comparisons, this difference is no longer significant.

3.3. A Signal of Financial Stability Reduces Discrimination Based on Origin

According to the results of these various tests, the only form of discrimination that appears to be clearly and soundly confirmed is discrimination based on origin. To go further, it is useful to identify the nature of the discrimination at work. Here, we refer to the two main approaches to discrimination in the economic literature. Firstly, in accordance with Becker's model (1957), discrimination may result from exogenous preferences or individual aversions to a particular demographic characteristic of applicants. Secondly, in accordance with Arrow's model (1973), it may be statistical discrimination that brings into play the advertisers' assumptions about the

characteristics of the applicant's demographic group in relation to their quality as a tenant, in particular the risk of non-payment of rent. To distinguish between these two forms of discrimination, the researchers add a signal of quality to the rental applicant, following the example of Massey & Lundy (2001), Ahmed *et al.* (2010), Bosch *et al.* (2010), Baldini & Federici (2011), Drydakis (2011) and Bunel *et al.* (2017). In these studies, this type of signal strongly reduces the extent of discrimination without making it disappear completely, suggesting the coexistence of information-based discrimination and preference-based discrimination.

The signal that we have used is mentioning the applicant's status as a civil servant in the message sent by the applicant Mehdaoui. We limit ourselves to the 2,424 advertisements for which this applicant sent an email, published by an estate agent (818 advertisements) or a private individual (1,606 advertisements). The results provided in Table 6 indicate that the signal of stability is looked upon well by advertisers. This suggests that some of the discrimination is linked to information. To more precisely determine the weighting of this type of discrimination, it would have been necessary to perform a comparison with a French applicant with civil servant status, which was not provided for in our data collection protocol, in order to limit the number of applicant profiles. However, we have performed this comparison for Paris in a pre-test that was the subject of a separate study (Bunel *et al.*, 2017). That test indicates that the signal of stability is looked upon much better by advertisers when it comes from an applicant demonstrating their French origins with their surname.

Table 6 – Effect of a signal of stability

CHETTOUH / MEHDAOUI (civil servant)	Difference in the rate of non-negative responses (in percentage points)	Difference in the rate of appointments in principle (in percentage points)	Difference in the number of contacts (%)
All advertisements	-1.2** (0.031) [0.068]	-2.1*** (0.001) [0.004]	-0.03*** (0.005) [0.012]
Estate agents	-3.3* (0.083) [0.186]	-3.7*** (0.009) [0.032]	-0.04* (0.093) [0.196]
Private individuals	-1.1 (0.118) [0.230]	-1.3** (0.022) [0.063]	-0.03*** (0.006) [0.017]

Notes: Significant at a threshold of 1% ***, 5% **, 10% *; unadjusted critical probability between brackets; critical probability adjusted using the Benjamini & Hochberg method (1995) between square brackets; block bootstrap statistical inference (10,000 replications).
Sources: *Testing DALTON* – TEPP CNRS.

4. Econometric Confirmation

In this section, we perform an analysis seeking to estimate the probability of receiving a non-negative response or an appointment in principle for each email sent. The sample is composed of all 25,040 emails sent. The explained variables are binary: 1) receiving a non-negative response and 2) receiving a proposed appointment in principle. The explanatory variables are the following:

- Landlord type: binary variable with two options: “Estate Agent” (reference) or “Private Owner”;
- Advertisement source: binary variable with two options: “Le Bon Coin” or “Other site” (reference);
- The rent expressed as a logarithm;
- A binary variable indicating whether the property is furnished or not (reference);
- Origin of surname: a binary variable indicating whether the family name evokes a French or non-French (reference) origin;
- The age of the applicant: a binary variable indicating whether the applicant is 22 (reference) or 41 years old;
- Civil servant status: a binary variable indicating whether the applicant is a civil servant or not (reference);
- Location: a binary variable indicating whether the applicant indicates that he lives in low-cost or social housing or not (reference);
- The position in the sending order: a qualitative variable with five options, indicating the position in the sending order, with the reference being position 1.

For each explained variable, we have estimated a probit model including, in addition to the foregoing explanatory variables, fixed effects for each urban area and fixed effects for each month of application. The former reflect the unobservable heterogeneity of the urban areas that is invariable over time. The latter reflect the effects of the context applying to all advertisements. In addition, insofar as our unit of observation is the email sent, the variables relating to the housing (landlord type, ad source, rent, furnished) are replicated for each of the five emails sent in response to the same advertisement. As the advertisements are distributed across 50 urban areas, this particular sample structure may generate intra-urban area and intra-advertisement correlations. We therefore conduct robust statistical inference for each cluster, with double clustering of standard deviations, for each urban area and

each advertisement. The estimation results are shown in Table 7.

For each explained variable, the first column shows the estimation results when the variables characterising the property are included, the second column shows the results when the variables characterising the applicants are introduced and the third column includes interactions between the origin variable and the landlord type and source of advertisement binary variables.

The results indicate that certain advertisement characteristics have a significant effect on the five fictitious individuals’ chances of receiving a non-negative response or appointment in principle from the advertiser, all other things being equal. Thus, whatever the profile, using the ‘Le Bon Coin’ website greatly reduces the chances of success, relative to the other sites, undoubtedly due to the fact that competition between applicants is strong on this very popular website. It also appears that applicants for rentals receive a non-negative response less often from private individual advertisers. In contrast, there is no difference between private individuals and estate agents for an appointment in principle. The other characteristics of the property (amount of rent, property furnished or not) have no significant effect on the likelihood of receiving a non-negative response or appointment in principle.

As regards the characteristics of applicants for rentals, discrimination based on the assumed origin of the surname clearly appears with a positive effect by the origin variable for the rate of non-negative responses and the rate of receipt of appointments in principle (Columns 3 and 6). Discrimination by private owners is more frequent, as shown by the positive interaction between “French Origin” and “Private Owner”. Civil servant status also has a facilitating effect in both cases, whereas age does not seem to have an impact. Living in low-cost housing increases the chances of receiving a non-negative response. Lastly, the order in which the applications are sent is not neutral: compared to an application received first, those received in second, third, fourth and fifth place are less likely to be successful. The econometric results therefore broadly confirm the results obtained by the bilateral tests.

In order to summarise these various results, we have calculated the likelihood of receiving a non-negative response (resp. an appointment in principle) for a 41-year-old male non-civil servant

Table 7 – Rate of non-negative responses, Probit model

	Non-negative response			Appointment in principle		
	(1)	(2)	(3)	(4)	(5)	(6)
Private individuals	-0.143*** (0.055)	-0.150*** (0.055)	-0.284*** (0.060)	0.024 (0.062)	0.021 (0.062)	-0.122* (0.062)
Le Bon Coin	-1.324*** (0.068)	-1.330*** (0.069)	-1.269*** (0.074)	-1.125*** (0.086)	-1.126*** (0.087)	-1.056*** (0.089)
Log (Rent)	0.094 (0.123)	0.100 (0.124)	0.100 (0.125)	0.117 (0.140)	0.121 (0.141)	0.119 (0.141)
Furnished	0.047 (0.040)	0.048 (0.040)	0.049 (0.040)	0.055 (0.043)	0.054 (0.042)	0.054 (0.043)
Set B	0.149*** (0.045)	0.158*** (0.046)	0.157*** (0.046)	0.086 (0.058)	0.093 (0.058)	0.091 (0.059)
French origin		0.261*** (0.021)	0.188*** (0.035)		0.186*** (0.027)	0.103*** (0.034)
Aged 41		-0.056 (0.051)	-0.056 (0.051)		-0.046 (0.053)	-0.046 (0.053)
Civil servant		0.064* (0.034)	0.069** (0.034)		0.114*** (0.036)	0.121*** (0.037)
Social or low-cost housing		0.114* (0.062)	0.113* (0.063)		0.049 (0.058)	0.049 (0.059)
Sending order position 2		-0.062* (0.033)	-0.060* (0.033)		-0.057* (0.033)	-0.056* (0.033)
Sending order position 3		-0.073*** (0.027)	-0.070** (0.028)		-0.096*** (0.040)	-0.090** (0.040)
Sending order position 4		-0.104*** (0.027)	-0.099*** (0.028)		-0.128*** (0.042)	-0.123*** (0.041)
Sending order position 5		-0.076*** (0.029)	-0.075*** (0.029)		-0.130*** (0.032)	-0.126*** (0.032)
French origin*Private individual			0.304*** (0.052)			0.328*** (0.058)
French origin*Le Bon Coin			-0.146*** (0.053)			-0.164*** (0.066)
Observations	24 885	24 885	24 885	24 885	24 885	24 885
Log-likelihood	-6698	-6631	-6618	-4509	-4483	-4473

Notes: Significant at a threshold of 1% ***, 5% **, 10% *; standard errors in parentheses.
Sources: *Testing* DALTON – TEPP CNRS.

living in Paris in a neutral area in July, for an advertisement from ‘Le Bon Coin’ with a median rent, with the position in the sending order set at 1. We confirm the result stating that discrimination is less significant for advertisements from estate agents, though it is not completely neutralised.

4.1. Taking into Account Non-Responses through a Second Type of Discrimination Test

Our results are established based on sending emails in response to property advertisements

for which we obtained a significant proportion of non-responses. We had found that almost 80% of the emails we sent received no response (cf. Table 2). This high proportion leads us to consider a second type of discrimination index. In a correspondence test, discrimination is measured by the difference in success rates between the reference applicant and the applicant potentially discriminated against. There are two possible ways of calculating the success rate (callback rate): the rate calculated for all emails sent and the rate calculated for all advertisements for which there has been at least one response. The two calculations differ only in their denominator.

They are both discussed in the Neumark's (2018) overview of the literature on discrimination in the labour market. The calculation based on the number of emails sent is the most common in the international literature (see, for example, Bertrand & Mullainathan, 2004, Table 1, p. 997). The viewpoint is that of an applicant who is concerned by the amount of effort required to obtain an appointment for an apartment rental. The second ratio does not take into account the advertisements for which no response has been received. This approach is used by Riach & Rich (2002) and is recommended by the International Labour Office (Bovenkerk, 1992). The measurement of discrimination, which is provided by the difference in success rates, is then called the "net discrimination rate".

The distinction between the two calculation methods is relevant in the context of this test because the response rates are low. Therefore, the treatment applied to advertisements for which no response was received is an important point. Though the two calculations are equal in absence of any non-responses, they differ noticeably when there are many non-responses. As the success rates are higher in the ILO calculation, it will be statistically easier to detect discrimination. The calculation of the response rate for all emails sent is more conservative. In his overview, Neumark (2018) indicates that the standard practice is to estimate marginal effects from linear probability or probit models based on all observations, which is equivalent to favouring the first approach.

The difference between the two approaches lies in the interpretation that is adopted for advertisements without any response. For the calculation of the discrimination indices for all emails sent, non-responses are equated to negative responses. For the calculation performed on all of the responses given, non-responses are equated to non-sending of emails. In our opinion, both hypotheses are extreme and that is why we use both calculation methods. It is likely that some of the email requests were not received by the recipient, but only some of them. Since it is impossible to determine the exact proportion, we frame the measurement of discrimination by combining both measurements.

This new approach does not alter our results, which remain qualitatively unchanged.⁵ We note a significant difference in the chances of success of the approaches made by the applicant of French origin, on the one hand, and by the French applicants of Maghribi (Chettouh) or African

(Sambou) origin. This significant difference is confirmed for our three indicators (non-negative response rate, appointment in principle rate and number of contacts), for both private individuals and professionals. Likewise, we are not able to identify strong discrimination based on the applicant's age or location in a disadvantaged neighbourhood.

Our results appear robust when a wide variety of indicators and discrimination index calculation methods are taken into account. However, several limitations of these tests are worth noting. First, in all the calculations of our different discrimination indices, non-respondents are not considered to be displaying specific discriminatory behaviour. It is implicitly assumed that the sub-sample of respondents is representative of all housing advertisers, which is debatable. In addition, aside from the messages we have sent, we are not able to observe the other applications made in response to the property advertisements. We do not know the nature or volume of these other applications, which we assume to be uniformly distributed across all advertisements. However, with regard to discrimination in access to housing, the number and quality of applicants has a decisive influence on the responses from advertisers. In addition, advertisers may favour other search channels beyond responses to offers by email, which may limit our ability to detect effective discrimination in the market as a whole. Indeed, these limitations exist for all discrimination tests, but they fully apply here and are worth noting.

4.2. Fairly Large Local Differences between Urban Areas

To study local differences in exposure to discrimination, we focus on the criterion of origin, which is the only form of discrimination to produce significant results, and we consider the relative difference in non-negative response rates between Sébastien Petit, our reference applicant, and Mohamed Chettouh. This difference is calculated in two ways, firstly on all advertisements and secondly only on the advertisements for which we have obtained at least one response. The result is shown in Table 8. We note that the two indicators are widely dispersed between urban areas, which suggests a strong local component in the determining factors of discrimination.

5. The detailed tables of results are available from the authors on request.

Table 8 – Proportion of times PETIT received a non-negative response and not CHETTOUH

Urban area	Difference in the rates of non-negative responses (in percentage points) based on the total number of adverts	Rank (from least to most discriminating)	Difference in rate of non-negative responses (in percentage points) based on the adverts with at least one response	Rank (from least to most discriminating)
Amiens	11.8**	45	30.8***	39
Angers	1.0	16	5.9	21
Angoulême	1.0	15	7.7	17
Annecy	2.9	24	27.3	33
Annemasse	2.9	23	14.3	23.5
Avignon	12.0*	47	31.6***	50
Bayonne	2.9	24	12.5	14
Besançon	2.0	19	13.3	16
Béthune	11.7**	44	33.3***	40
Bordeaux	0.0	7	0.0	18
Brest	3.0	26	15.8	31.5
Caen	6.9	41	20.0*	41
Chambéry	3.0	26	18.8	22
Clermont-Ferrand	6.0	39	25.0*	44
Dijon	2.0	20	13.3	15
Douai - Lens	3.0	29	14.3	46
Dunkerque	1.0	13	4.8	5
Grenoble	1.9	17	7.7	11
La Rochelle	1.0	11	5.9	5
Le Havre	11.0*	43	27.5***	37
Le Mans	3.0	28	15.8	31.5
Lille	2.0	18	11.8	35
Limoges	12.0*	48	29.3***	43
Lorient	0.0	7	0.0	5
Lyon	3.9	33	19.1	23.5
Marseille - Aix-en-Provence	5.8	37	27.3*	47
Metz	4.9	36	13.9	36
Montpellier	0.9	10	7.1	9
Mulhouse	4.0	34	17.4	20
Nancy	11.9**	46	30.8***	34
Nantes	1.0	13	5.0	12
Nice	-4.8	1	-17.2	2
Nîmes	0.0	7	6.3	8
Orléans	7.8	42	24.2**	38
Paris	-2.9	2	-17.7	1
Pau	0.0	7	0.0	13
Perpignan	14.8***	50	34.9***	45
Poitiers	-2.0	3	-13.3	3
Reims	0.0	7	0.0	26
Rennes	4.0	35	28.6	42
Rouen	-1.1	4	-5.9	7
Saint-Étienne	2.0	21	10.0	27
Saint-Nazaire	3.1	31	17.7	28.5
Strasbourg	1.0	12	4.8	30
Toulon	6.4	40	26.1*	48
Toulouse	3.9	32	15.4	25
Tours	5.9	38	17.1	19
Troyes	3.0	30	21.4	10
Valence	2.0	22	11.8	28.5
Valenciennes	12.0**	48	30.8***	49

Notes: Significant at a threshold of 1% ***, 5% **, 10% *.
Sources: *Testing* DALTON – TEPP CNRS.

Of the 50 urban areas, eight show statistically significant differences in success rates at urban area level using the first indicator and 11 using the second. Discrimination appears to be highly concentrated in a small number of territories. Avignon, Valenciennes and Perpignan appear to be the urban areas where discrimination in access to housing is the strongest. Nancy, Limoges, Le Havre, Amiens and Béthune are also urban areas characterised by significant discrimination for both indicators.

It appears that none of the urban areas where there is most discrimination is a large regional capital. In addition, these urban areas where there is most discrimination are not the largest ones. The largest of these urban areas is Avignon, which ranks 16th in the list of urban areas by size. The areas where there is most discrimination are not the smallest ones either. None of the 15 smallest urban areas, in the list of the 50 largest areas, are included in the list of the areas with the most discrimination. The smallest of these areas is Limoges. The ten urban areas with the most discrimination are prefectures or sub-prefectures. Their average size is close to the median size. It has 365,000 inhabitants in the urban area, 266,000 inhabitants in the urban centre and nearly 100,000 inhabitants in the urban belt.

* *
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In this study, our objective was to measure discrimination in access to rental housing in the private sector using a test covering all of Metropolitan France and several forms of discrimination: age (discrimination against young people), origin (distinguishing between Maghribi and West African) and the place of residence (living in a neighbourhood classed as a geographic priority in the town's policy). The tests were performed between June and December 2016 in each of the 50 largest urban areas in Metropolitan France. We responded to 5,008 advertisements on behalf of five applicants for rental properties, totalling 25,040 responses to property advertisements. We check whether discrimination in access to housing depends on the characteristics of the applicant (by adding indicators of financial stability to their profiles, using civil servant status), those of the advertiser (a private individual or an estate agent) and those of the local context. We observe several complementary indicators that

we calculate according to whether the advertisement is published by a private individual or a property professional, in order to measure the possible mitigating role of estate agents in housing discrimination.

This first analysis of this database leads to several interesting conclusions. We do not identify discrimination based on the applicant's age. We find a positive effect of living in low-cost or social housing while looking for an apartment in the private rental sector – which signals an improvement in the applicant's standard of living and a higher ability to pay rent. In addition, we identify significant discrimination based on origin, which penalises applicants whose forenames and surnames evoke a Maghribi or African origin. Relative to the reference applicant assumed to be of French origin, Sébastien Petit, the applicant of Maghribi origin, Mohamed Chettouh, has a 26.7% lower chance of success in his application for housing. This discrimination is very marked for advertisements from private owners and is also very marked for advertisements from estate agents. It is only slightly mitigated when the rental applicant adds a signal of quality by stating that he is a civil servant.

We note that this discrimination is very different depending on the territory. It is patently clear in a small number of urban areas that we are listing. Perpignan, Limoges, Avignon and Nancy head the lists established using different indicators. The ten urban areas where there is most discrimination are not the largest or smallest ones. None of them are regional capitals. They are all prefectures or sub-prefectures. Their size is close to the median size of large urban areas and they are dispersed across Metropolitan France, in the centre (Limoges), the north (Amiens, Béthune, Le Havre and Valenciennes), the south (Avignon and Perpignan) and the east (Nancy).

It should be noted that one limitation of this study is that it only tests the first step in accessing housing: making an appointment with a landlord. In addition, we have focused on private sector rental housing, concentrating on intermediate properties, F2 apartments, the most demanded and offered type of property. It would be interesting to expand the study by examining other property types. However, despite these limitations, we believe that our results are sufficiently robust to argue for public policy responses. Although social diversity in neighbourhoods is a stated objective of French public policy and discrimination based on origin is strictly prohibited, the strong discrimination found in

access to housing based on that criterion reveals significant public policy challenges. The results of this study call for an in-depth consideration regarding the regulation of the property market and the various tools that can be used to combat discrimination in access to housing. These public policy tools range from a reminder of the rule of

law to concrete measures aimed at making the law more effective. Other measures including actions to combat social insecurity, whether in terms of access to social housing or aimed at private landlords to provide them with financial guarantee mechanisms, would undoubtedly have an important role to play. □

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