

The key could be a name

Finding evidence of discrimination
in access to the rental housing market
in Barcelona.



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Barcelona, july 2020



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0. Introduction

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Our names are like a letter of introduction. Names confer identity at the same time as they transmit it, and they are therefore directly related to social experiences and opportunities. Almost invariably, most names are exclusively associated with one sex; there are very few unisex names. Indeed, in order to reaffirm their identity, one of the first actions transsexual people undertake is to change their name. Names implicitly include the function of revealing gender, and of generating gender identity. They play the same role in ethnic origin, and racialised identities, and as usually happens with minorities, the results are not exactly to their advantage.

Names can be a key factor. The key to gaining access to certain social or cultural relations, goods or services. Names can open or close doors, including the doors of a home. Behind people's names lie hidden stories of lives subjected to the interpretation of others, and this often includes prejudices and stereotypes that act as constructs of otherness and the workings of discrimination. The mere name of a person can be linked to the allocation of opportunities to access resources.

Making use of names, we present an experiment which aims to reveal discrimination in access to housing, by measuring the difference in treatment received by applicants according to their various profiles. A differentiated treatment that can only be explained by the personal characteristics that are derived from their names.

Discrimination may be detected in a number of areas and personal characteristics¹. This field study focuses on the rental-housing market and on personal characteristics related to ethnic origin and sexual orientation. A selection based mainly on adjusting readily available collection techniques, through the use of internet portals, which, consequently, results in contact with the agencies that is exclusively virtual and where the inclusion of other personal characteristics in the main text of the housing application is not permitted, with no loss of reliability. It is essential that the estate agent is able to detect the personal characteristics of the profile, and is therefore able to act in a differentiated manner, in accordance with these characteristics. Although there are certainly other techniques for approaching the phenomenon of discrimination, by collecting evidence from other places that are not necessarily online, in this study, with the aim of achieving a greater representativeness of the phenomenon and balancing the resulting cost-reliability ratio, the analysis using internet portals provides the opportunity to include a significant sample that allows for statistically robust and reliable results.

Considering that, in a similar way to other forms of non-verbal communication, names transmit information about a person's place of origin and gender, in the experiment concerning place of origin, an application using a name of native origin and a name of Arab origin was submitted for every advert. The same procedure was used in the experiment concerning sexual orientation, in this case featuring different-sex couples

¹ Article 21 of the European Union's Charter of Fundamental Rights prohibits any kind of discrimination, and in particular, that which is exercised for reasons of gender, race, colour, ethnic or social origins, genetic features, language, religion or beliefs, political or any other type of opinions, membership of a national minority, property, birth, disability, age or sexual orientation.

and same-sex couples. The experiment focused solely on the contact phase for renting a flat, and consisted of sending 2,000 applications showing interest in 1,000 dwellings advertised on six real-estate portals.

The report is divided into 4 main differentiated sections. The first section conceptualises the discrimination and the difficulties inherent in detecting it, due to its subtle and often underestimated nature. The second section explains the steps required to obtain the results and includes the various methodological challenges to be overcome in carrying out the experiments. The experiments, differentiated from each other, are presented in the central part of the report, which makes up the third and fourth sections. They present the main results obtained when applied to ethnic origin and sexual orientation, respectively. As a conclusion, a fifth section lists the main findings of the experiments.

This report, the first of its kind to be carried out exclusively in the City of Barcelona, and with few precedents in Spain ², opens the way to applying a methodology that provides evidence of the existence of discrimination in access to the city's goods and services market, and aims to encourage its application in other areas and foci of discrimination.

This report would not have been possible without the involvement of the professional staff of Barcelona City Council's Office for Non-Discrimination, and the various organisations and service users that make up the Committee of Organisations Assisting Victims of Discrimination.



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² Bosch, M., M. A. Carnero i L. Farré, (2009), *Information and Discrimination in the Rental Housing Market: Evidence from a Field Experiment*, Regional Science and Urban Economics, 40 (2010), 11-19./ Bosch, M., M. A. Carnero i L. Farré, Rental housing discrimination and the persistence of ethnic enclaves. *SERIEs* 6, 129-152 (2015). / S.O.S Racismo (2015) *Puertas que se cierran. [Doors that close.]* Testing sobre discriminación a la población inmigrante en el acceso a la vivienda de alquiler. *[Testing on discrimination of the immigrant population for access to rental housing.]* Spanish Federation SOS Racism Associations.

1. Discrimination and measuring it

Discrimination refers to the unequal treatment of people or groups according to their personal characteristics, but it is often accompanied by systematic processes that favour the members of certain groups to the detriment of others. (Pager and Shepherd, 2008). These closely interrelated processes reinforce and perpetuate disadvantages in access to resources and opportunities for people who are faced with unfavourable treatment.

The studies aimed at measuring discrimination adopt various perspectives, methods and orientations. The most common include: official statistics based on complaints concerning cases of discrimination; opinion surveys that measure the social concept or general attitudes of majority groups towards minorities ³; and annual reports from social organisations and other bodies ⁴ that work directly or indirectly with this type of situation ⁵.

Perceptions of discrimination may overestimate or underestimate the real incidence of discrimination, precisely because they are perceptions, they occur in the heart of relationships, and in situations subject to various interpretations. There is an extensive tradition of research carried out on racialised attitudes and stereotypes among the general public ⁶ which indicates that a large proportion of discriminations are often ignored, precisely because of the huge degree of normalisation of these situations in everyday lives, for both the people who have to live with discrimination because of their personal charac-

teristics and those who develop certain discriminatory practices.

With regard to annual reports from social organisations that work with minority groups, a sample bias is produced with the data, as there is only data for the cases that go to them in search of support. The same thing happens with the statistics based on complaints about cases of discrimination. This data takes us closer to reality, but it only shows us the tip of the discrimination iceberg. This is data which is often underestimated, as it only considers isolated cases and/or with little statistical meaning and little solidity that can be contrasted empirically.

To a greater or lesser degree, according to the society concerned, inequalities due to ethnic origin and sexual orientation persist. However, in contrast to the pre-civil rights period, where discrimination was open and more widespread, today's discrimination is more subtle and hidden away, as it is considered to be politically incorrect, and this means it is more difficult to identify. In order to resolve these flaws, there are techniques that make it possible to approach the true measure of discrimination with evidence, empirically contrasting real or simulated cases based on situations that are recreated, either fictitiously or with real people who are liable to suffer discrimination due to their personal characteristics. The difficulties in detecting discrimination and its almost invisible, or even normalised character, makes it necessary to use experiments such as the one presented below.

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³ Centre for Sociological Research. Evolution of racism, xenophobia and other connected forms of intolerance in Spain. [Report-Survey 2017]; European Union Agency for Fundamental Rights. (2018) Report on fundamental rights 2018. Fundamental rights rulings.

⁴ Catalonia Institute of Human Rights and Human Rights Resource Centre. Citizen Rights and Diversity Services Department, Barcelona City Council, 2019.

⁵ S.O.S. Racismo (2018) Annual report.18. Sobre el racismo en el Estado Español. [Concerning racism in Spain.] Donostia. Third Printing.

⁶ Farley, R. (1977) Residential Segregation in Urbanized Areas of the United States in 1970: An Analysis of Social Class and Race Differences. Demography Vol 14. N.4, 497-519.

2. Social experiments: Objectives and methodology

Experiments enable us to get a direct measure of discrimination. The idea is to select and create pairings based on population profiles (majority and minority groups) and expose the various profiles chosen to the situation we aim to analyse. The experiments carried out in recent decades provide evidence of how minorities are faced with discriminatory behaviour in various kinds of commercial transactions, such as: access to employment (Pager, 2007); access to home ownership/rental (Yinger, 1995; Chambers, 1992; Wachter and Megbolugbe, 1992); residential mortgages (Turner and Kidmore, 1999); insurance applications (Wissoker et al. 1998); access to health-care (Schulman et al. 1999); and even the sale of cars (Ayres and Siegelman, 1995) and in access to taxis and their routes (Ridley et al. 1989).

The experiments aimed at detecting ethnic-origin discrimination show that, in comparison with the ethnic majority, applicants belonging to an ethnic minority receive fewer replies to their housing applications, and are invited to view fewer flats. Some studies go further and highlight the differences in the characteristics of dwellings where ethnic minorities have to live and the segregational impact on their spatial distribution. With regard to experimental studies on same-sex couples, the existence of sexual prejudices are usually confirmed (Herek, 2000), in terms of negative attitudes towards the sexual orientation of homosexual people labelled as gay, lesbians or bisexuals, which involve hostility and restricted access to resources (Herek and Capitanio, 1996; Yang 1997). In the area of housing, this is demonstrated through fewer opportunities for gaining access to the same properties. However, in contrast to ethnic-origin experiments, those carried out to detect differential treatment due to sexual orientation are fewer in number, and they include very dissimilar results (Ahmed, 2009).

The main aim of the experiments presented here is to detect and quantify the existence of differentiated treatment in access to the private rental market in Barcelona due to ethnic origin and sexual orientation, based on sending housing applications to online real-estate portals. The research aims to find answers to the following questions:

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Is there ethnic discrimination involved in the differentiated treatment received by people with Arab names who are looking for a flat through online adverts on rental-market platforms?

Applicants with Arab-origin names are considered to experience adverse differentiated treatment if they are shown to receive fewer replies/appointments compared to the same rental housing applications submitted by applicants with native (Spanish) names.

Is there ethnic discrimination involved in the differentiated treatment received by same-sex couples who are looking for a flat through online adverts on rental-market platforms?

Homosexual and/or lesbian couples (both names indicating the same gender, specifying the relationship they have with each other) are considered to experience adverse differentiated treatment if they are shown to receive fewer replies/appointments compared to the same rental housing applications submitted by heterosexual couples (masculine and feminine names, specifying the relationship they have with each other).

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2.1. Real-estate portals as laboratories

In order to answer these questions, two experiments entitled “Origin Experiment” and “Sexual Orientation Experiment” were designed. The Origin Experiment included a simulation of a couple with native names and a couple with Arab-origin names. In the Sexual Orientation Experiment, the fictitious profiles consist of a couple with names of different sexes (heterosexual) and a couple with names of the same sex (homosexual/lesbian).

In contrast to other similar investigations, this study was carried out on the real-estate portals present online, instead of compiling data through telephone calls, which was the most frequent method used until the last decade. Since the start of the new millennium, the use of internet has become widespread, and consequently, so has access to a variety of virtual markets. Social sciences have made good use of this new opportunity for analysing discrimination, adapting the traditional telephone-based experiments to the real-estate adverts shown on virtual platforms (Carpusor and Loges, 2006; Ahmed and Hammarstedt, 2008).

In Catalonia, in 2006, home use of the internet by a family member aged between 16 and 74 occurred in less than 50% of the population. In 2019, that figure had reached 94% ⁷. The use of email has also rapidly expanded among the Catalan population, and although there are no updated figures for this year, in 2017, 74.3% of the population habitually used email.

It is an undeniable fact that the internet has transformed our societies and the way we interact in our social and cultural relationships, as well as in our financial transactions. At the end of 1999, the real estate sector appeared online, using a format known as “real-estate portal”. 20 years later, a single real-estate platform confirms that millions of people have used and are using their services. This intensive use of real-estate portals make them an ideal laboratory for recreating everyday situations and analysing the behaviour of real-estate agents, in regard to housing applications made by different applicant profiles.

⁷ Idescat, based on the Survey on Information and Communication Technology Equipment and its Use in the Home, by the INE and Idescat. Territorial Survey of ICT in the Home.

With adverts on real-estate portals, the advertiser exercises control over the administration and response to their publications while the people interested in renting accommodation can submit a free email application to the website. The information required from the potential tenant is their name, their email address, a short message and, in some cases, a telephone number. Given that this research is based on a written approach, using emails as the exclusive means of communication, all those platforms that require a telephone number were excluded from the study.

Carrying out this kind of experiment creates various methodological and ethical dilemmas. The main dilemma is due to the conflict between observing non-influenced behaviour and informing the observed participants of the objectives of the study in which they are taking part. In order to achieve its goal, the designed experiment must necessarily observe people's behaviour without their consent, and even without their knowledge. The simple fact of the real-estate agents knowing about the study would involve a bias that would invalidate the results of the research. As indicated below, it was necessary to carry out a pilot study, among other reasons, to design a set of measures that ensured the field study would not be detected.

The agents involved must not know of the experiment's existence to ensure this does not affect their behaviour, but this does not mean that a set of ethical considerations were not taken into account. The experiment was carried out in accordance with the regulations for use established by the platforms, comply-

ing with the terms and conditions of the selected online platforms, and, wherever possible, minimising any impact the study could have on the management of the advertised properties. No appointments were ever confirmed for a specific day and time with a professional, knowing that the applicant would not attend. The experimental application of the messages was concluded when the applicant received a response to their application or alternatively, when there had been no response to the application after a period of 30 days.

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2.2. Constructing the identities of fictitious applicants

Applicant profiles were assigned names that unambiguously evoked a differentiated origin, names of native Spanish origin and names of Arab origin for the Origin Experiment and couples where both members had names of the same gender (man-man, woman-woman) and couples with names from both genders (man-woman) for the Sexual Orientation experiment.

In both experiments, the names of the applicants play a fundamental role in displaying the difference between applicant profiles. Fictitious names were used to indicate the ethnic origin and gender of the applicant, as well as the names of their corresponding partners, while specifying the type of relationship they maintained, in order to demonstrate that it was a couple formed by either two people of the same sex or of different sexes.

The experiment was based on fictitious applications and the use of the most common names from the study's target populations, either names of native origin or names of Arab origin for people resident in Spain ⁸. Hypothetical identities, with different names for each experiment, were paired at random.

2.3. Creating the message

Application texts

Each experiment combined the use of 5 application texts that included the same information. These texts were submitted to the same property offers, extracted from the selected online real-estate portals, in order to measure discrimination in the form of differentiated treatment, with the aim of determining the existence or non-existence of inequality in access to the property market, according to the profiles included in the two experiments.

The application texts were not completely identical. So, as indicated, 5 models were created. Using one single model for such a high number of applications (2,000) was an excessive and unnecessary risk to the experiment, as it could have revealed unusual behaviour. However, all of the messages had the same characteristics, showing interest in the advert, and all the adverts were paired and randomised, for both the selection of the property offer and the profiles used to initiate the first application, and their pairing, following the logic set out in Table 1.

Drafting the email text was the main mechanism for ensuring the reliability of the results, and for this reason it was essential to validate the messages by means of a pilot study. At the start of the research, it was considered that the participation of the population affected by situations of discrimination should be included in the design of the research, and for this reason, social organisations and service users of Barcelona City Council's Office for Non-Discrimination were involved on various occasions. In these participative sessions, among various design aspects of the experiment,

⁸ 6 names were selected for each group, with a total of 24 participants. The names were chosen at random from the 100 most-common first names and surnames for residents in Catalonia, according to gender and origin. INE and Idescat, 2019.

the aim was to extract first-hand information about how the people included in the analysis profiles would write an application message to show their interest in a property. This made it possible for us to get a real message that would be used by the study's target population, i.e. the people who were liable to be victims of discrimination.

As a result of this exercise, two simulations were made: a first general one, including a brief rental advert where contact was via email, and a second one with some minimum requirements that had to be included in the text message, introducing the transmission of positive information, i.e. including information relating to the applicant's financial solvency.

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Table 1. Application text and profile pairing.

ID.	TEXT INCLUDED IN THE APPLICATION	SEXUAL ORIENTATION EXPERIMENT				ORIGIN EXPERIMENT			
		Same-sex couple	Different-sex couple	Same-sex couple	Different-sex couple	Arab Name	Native Name	Arab Name	Native Name
		Man	Man	Woman	Woman	Man	Man	Woman	Woman
1	Hola, mi pareja (Nom) y yo estamos buscando piso. Este piso nos parece adecuado para nosotros. ¿Está disponible?	1	2	4	5	1	2	4	5
		2	1	4	5	2	1	4	5
		3	1	5	3	3	1	5	3
		1	3	3	5	1	3	3	5
2	Mi pareja (Nom) y yo buscamos un piso como el del anuncio. podríamos verlo?	3	2	5	2	3	2	5	2
		2	3	2	5	2	3	2	5
		4	1	1	5	4	1	1	5
		1	4	5	1	1	4	5	1
3	Hola, hemos visto este anuncio y nos gustaría tener más información sobre él. Soy (Nom), con mi pareja estamos buscando una vivienda como esta. Gracias.	4	2	4	3	4	2	4	3
		2	4	3	4	2	4	3	4
		4	3	4	2	4	3	4	2
		3	4	2	4	3	4	2	4
4	Hola soy (Nom), con mi (marido/esposa) (Nom) buscamos piso. Este piso nos interesa. ¿Se puede visitar?	5	1	1	4	5	1	1	4
		1	5	4	1	1	5	4	1
		5	2	3	2	5	2	3	2
		2	5	2	3	2	5	2	3
5	Hola me llamo (Nom). Mi (marido/esposa) (Nom) y yo queríamos ver el piso. es posible?	5	3	3	1	5	3	3	1
		3	5	1	3	3	5	1	3
		5	4	1	2	5	4	1	2
		4	5	2	1	4	5	2	1

THE RESULTING GENERIC MODEL

PEDIR UNA VISITA A VER EL PISO.
HOLA. -- ME GUSTARÍA VISITAR EL PISO.
No. Re. -- 5454 R. CONTACTARME
CUANTO ANTES POSIBLE PORFA. MI NO

MODEL WITH POSITIVE INFORMATION

Hola.
Busca un piso de alquiler de 2 dos
habitaciones para una persona trabajadora
con nominas y contrato de trabajo fijo.
Soy de origen Marroquí con permiso de
residencia.

In one of the positive-information models, it was very interesting to see how one of the participating women of Arab origin wrote “I am of Moroccan origin, with a residence permit”. At no point in the session’s guidelines for drafting the message was it stated that you had to show your place of birth or nationality, but this person included it, and when asked why, she answered:

“Yes, I say up-front that I am from Morocco. Always. That way, we don’t waste time, because if not, they say: ‘Okay, let’s go and see it!’ Because my Spanish is good, and I don’t have any Moroccan features, I mean dark skin or eyes... but afterwards, when I say my name, or they see it, I show them my papers and so on... ‘Oh, no, no, the owner doesn’t want any Moroccans, you don’t look like a Moroccan (...)’ This way, I don’t get my hopes up”⁹.

⁹ Discussion group and dynamic session with women of Arab origin. OND, October 2020.

The models presented by the participants in the dynamic sessions were real. So real, that they made it impossible to compare them with the native population, making the application method more complicated, in spite of being closer to reality. In order to guarantee the reliability of the application-text results, the message had to be as similar as possible for the two profiles, and the dynamic session, far from fiction, was so rich and heterogeneous in terms of the diversity of language and expressions, that it made using their messages impossible, because from the very beginning, apart from their ethnic origin, this placed them at a social disadvantage due to an insufficient ability to express themselves in the language, factors that could affect the real-estate agent's decision to respond or not respond, apart from the ethnic-origin factor.

Some of the texts were tested in an initial sample of 274 messages, and it was detected that transmitting more information in the application messages increased the rate of response, compared to standardised messages included in the portals, but not exactly when positive information was introduced. Transmitting more information also increased the vulnerability of the experiment, as pairing messages with information that was very specific, and identical or very similar, increased the possibility that the fictitious profiles would be discovered, and therefore that the website platform would forward the messages to the real-estate agents.

For this reason, the application texts did not include information relating to the financial solvency of the applicants. Subsequently, it was confirmed that the real-estate agents use other mechanisms for obtaining this information and that showing it initially is not normal practice, at least in the market that was the subject of the study, and for this reason it aroused suspicion among the agents, who chose not to respond. For the reasons stated above, the data included in this report are the result of sending messages that only expressed interest in renting the flat concerned and gave the first name and surname of the applicants and their partners.

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Among the population belonging to a minority origin group, we see strategies for reaffirming their identity of origin, in order to avoid confusion in the negotiation of a visit to a rental property, with the aim of accelerating the process of searching for accommodation ("not wasting time") and trying to maintain an emotional balance when faced with discrimination, taking for granted that this will occur, due to the accumulation of similar past experiences ("I don't get my hopes up").

Linguistic considerations

In Barcelona, there are two official languages: Catalan and Spanish. However, only 39.2% of Barcelona's population use Catalan as their first language. With regard to the city's districts, the data is very varied, so much so that in Ciutat Vella or Nou Barris, this percentage drops to 18.7 and 21.4% respectively, a difference of nearly 40 percent with the figure for Catalan speakers in the district of Gràcia ¹⁰.

Communicating in Catalan through digital technologies is still one of the many pending tasks for this language, so much so, that only 1 out of every 3 residents in Catalonia have their mobile devices and personal computers configured in Catalan ¹¹, and in the Metropolitan Area, only 7.2% write messages exclusively in Catalan ¹². We have no data on the use of this language on real-estate portals, but taking into account the rest of the data, the chances are that data concerning the use of Catalan would be lower than for the offline environment. If you add this to the written use of Catalan in the non-EU immigrant population in the City of Barcelona, it goes without saying that the use of Catalan in messages would not be representative of the population.

Apart from the representativeness of the analysed populations, we cannot underestimate the reality that stereotypes and differential treatment are also found in the field of linguistics: *"Linguistic prejudice (innocent or programmed) is a manifestation of racism applied to languages and their speakers"* ¹³. Although it may seem paradoxical, this was the main reason for the decision to use only Spanish for the housing-application messages. Excluding a minority language from the study, with the aim of reducing as far as possible any possible interference from other situations that could become discriminatory and that are not within the scope of study.

¹⁰ City of Barcelona Municipal Services Survey. Municipal Data Office. Department of Opinion Surveys. Barcelona City Council, 2019.

¹¹ Informecat. Platform for the Language Barcelona, June 2018.

¹² Idescat and the General Directorate for Linguistic Policy. Survey on the Population's Linguistic Uses, 2019.

¹³ Tusón, J. *Mal de llengües: A l'entorn dels prejudicis lingüístics* [Bad Language: Concerning Linguistic Prejudices] (p. 26) Barcelona: Icaria Editorial 62, 1988.

2.4 Constructing a method

The pilot experiment also made it possible to detect methodological difficulties, especially those connected to pairing. It was observed that there are not enough flats to limit the sample to the initially planned price segments (maximum €1,000), so it became impossible to impose price limits on the sample. Additionally, the time the adverts remained on the portal was very variable. Some adverts disappeared within 24 hours, which meant that pairing had to be done almost immediately after the first application, to prevent a situation in which, in the intervening time, the advert ceased to exist, and ensuring it could not continue being published after it had already been rented out, without being able to control this information. The pilot also indicated that the process of sending the emails would be prolonged over time, due to some of the online portals having a daily limit on sending applications, and a security code for detecting when the emails are submitted by means of a computer programme.

Being discovered was one of the dangers that would persist throughout the study, and for this reason a range of preventative strategies were deployed, which allowed us to become as imperceptible as possible, while also obtaining a significant sample for extracting data. Software was used to hide and/or modify the real location of the computers used to send the emails, so that their IP address did not coincide and raise suspicion. The applications were submitted to various real-estate agents through the above-mentioned real-estate portals, which means that on some occasions, the real-estate agents were the same, and for this reason the order for sending the applications was gradually modified, and some patterns of use of the web were established, including connection times for each fictitious profile.

2.5 Creating a sample

On the first day of the research, the 6 selected portals had approximately 22,000 rental adverts for the City of Barcelona, managed by real-estate agents; flats offered directly by private owners were excluded from the study. This data does not tally in the least with the number of properties on the rental market, as over half of these adverts correspond to:

- Offers advertised on more than one of the four real-estate portals. In fact, one single portal could have over 90% of the city's rental accommodation on offer by this means.
- Repeated adverts included in the same real-estate portal posted by different real-estate agencies, or uncorrected duplicate publications.
- Adverts for properties that are no longer available but continue to be advertised on the portal.

In any event, in order to ensure the reliability of the experiment results, we created a sample size that included all of the adverts published on the chosen platforms and which indicated that with an error margin of $\pm 5\%$ and a confidence interval of 95, we needed to include 377 rental adverts in the sample for each experiment. In order to ensure representativeness, each experiment had a sample of 500 adverts.

The selection of the 500 adverts taking part in each experiment was random, and included 355 different real-estate agencies in the Origin Experiment and 348 in the Sexual Orientation Experiment. In both cases, around 25% of the real-estate agents accounted for nearly 50% of the offers included in the sample.

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Table 2. Real-estate agents according to 1 or more rental offers included in the Origin and Sexual Orientation experiments (N and %)

1 rental offer	271	76.3	271	54.2	263	75.6	263	52.6
More than 1 rental offer	84	23.7	229	45.8	85	24.4	237	47.4
Real-estate agents taking part	355	100	500	100	348	100	500	100

Figure 1. Real-estate agents according to 1 or more selected rental offers, according to origin and sexual orientation (%)

This study included a total of 1,000 adverts, 500 for each experiment, submitting a total of 2,000 applications. The figure for applications doubles the number of adverts, because two applications were submitted for each advert (majority and minority profiles).

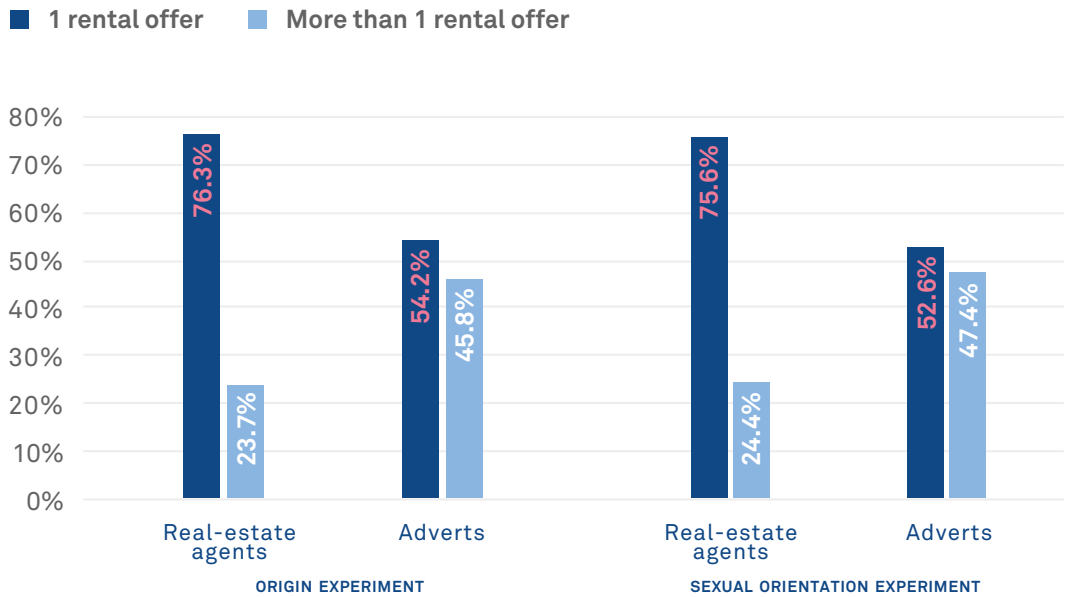


Table 3. Applications submitted for each experiment, types of profile and gender of applicant (N)

GENDER OF APPLICANT	ORIGIN EXPERIMENT			EXPERIMENTO ORIENTACIÓN SEXUAL		
	Native Name	Arab Nam	Total	Names, same-sex couple	Names, different-sex couple	Total
Man	250	250	500	250	250	500
Woman	250	250	500	250	250	500
Total	500	500	1.000	500	500	1.000

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All of districts in the City of Barcelona were represented in the selection of adverts included in the two experiments. The distribution of the adverts by district was adjusted to the representation on the portals (+/-5%).

The most-represented districts were Sants-Montjuïc (16.7%), Eixample (16.1%), Ciutat Vella (13%) and Sant Martí (11.6%). These four districts account for 57.4% of the total sample.

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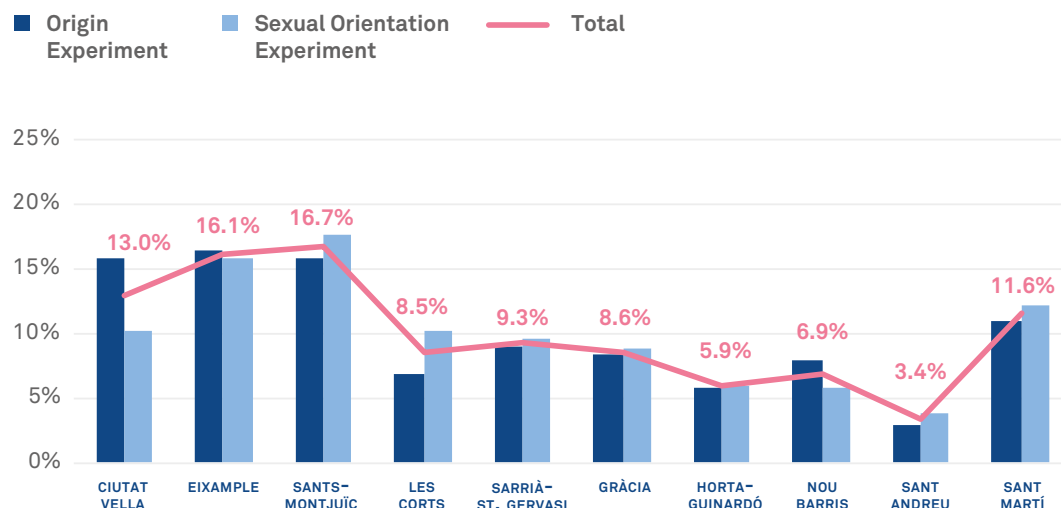
Table 4. Adverts responded to by type of experiment, gender of applicant and district of requested property (N)

DISTRICT OF	ORIGIN EXPERIMENT			SEXUAL ORIENTATION EXPERIMENT			TOTAL		
	Man	Woman	Total	Man	Woman	Total	Man	Woman	Total
Ciutat Vella	34	45	79	12	39	51	46	84	130
Eixample	42	40	82	30	49	79	72	89	161
Sants- Montjuïc	44	35	79	45	43	88	89	78	167
Les Corts	17	17	34	29	22	51	46	39	85
Sarrià- Sant Gervasi	18	27	45	23	25	48	41	52	93
Gràcia	25	17	42	33	11	44	58	28	86
Horta- Guinardó	15	14	29	16	14	30	31	28	59
Nou Barris	18	22	40	18	11	29	36	33	69
Sant Andreu	9	6	15	11	8	19	20	14	34
Sant Martí	28	27	55	33	28	61	61	55	116
Total	250	250	500	250	250	500	500	500	1,000

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Figure 2. Territorial distribution (district) of the adverts responded to, according to experiment.



Rental prices

In recent years, the upward trend of households living in rental accommodation in the City of Barcelona has been confirmed ¹⁴. Although we seem to be entering a more contained stage following the record number of 53,000 new rental contracts in 2018, over 51,000 rental contracts were signed in 2019. Although a deceleration in new contracts is observed in comparison with 2018, this is probably due to mismatch between the prices on offer and the purchasing power of the tenants. The rental market is the main means of access to housing for a large section of the population in the City of Barcelona. It should also be noted that, according to the social organisations taking part in the discussion groups, a significant segment of the population is seeking accommodation in the form of rented rooms, the only means of accessing housing they can afford.

The mismatch between rental prices and demand is increasing, according to the OHB's latest report. 74% of rental demand is for rental prices under €1,000/month, while the supply is mostly priced above this threshold, with only 32% of properties being offered for under €1,000. The average price of signed contracts in 2019 was €14/m², in a context where salaries have not recovered the purchasing power they had before the 2007 crisis, and where on the day this report was finalised, during the freeze on economic activity due to the coronavirus pandemic, everything points to the population's financial capacity being significantly reduced.

The length of time adverts remain active on real-estate portals is one indicator, among others, of the ease or difficulty of getting access to rental accommodation, according to price range, although,

¹⁴ The Barcelona Metropolitan Housing Observatory (O-HB) annual report: Housing in the Metropolis of Barcelona 2018, 03-07-2019.

Table 5. Price ranges €/month included in the Origin and Sexual Orientation experiments (N and %)

Less than 800	66	13.2	13.2	62	12.4	12.4
801 - 1.100	234	46.8	60.0	192	38.4	50.8
1.101 - 1.400	107	21.4	81.4	122	24.4	75.2
Over 1.401	93	18.6	100.0	124	24.8	100.0

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in order to take this as a valid indicator, we have to presuppose that the real-estate portals remove the advert the same day the property is let. In this research, the data have been taken as an approximation, given that dates of publication for adverts are not reliable. They indicate that 35% of the adverts at prices below €1,000/month are active on the portal for less than a week and 60% for less than 15 days, while the adverts at prices above €1,000/month remained active for at least a month, in 78% of cases.

The theoretical effort of accessing rental housing according to household income, with the increase that has occurred in rental prices in recent years, means that even households with an income of 3.5 times the minimum wage (€31,619.7/year in 2018) have to allocate over 30% of their income to paying rent.

At first, this field study was only geared towards adverts published for rents below €1,000, but as specified earlier, it was expanded precisely because there were not enough flats on offer to guarantee the random selection of adverts, meaning that the sample would have been insufficient. In the case of the experiment with couples according to ethnic origin, the average price of adverts included in the experiment was €1,185/month, while it was €1,291/month for the Sexual Orientation experiment.

3. Results of the origin experiment

3.1. Responses to applications

The experiment designed to detect cases of discrimination due to origin submitted 1,000 applications to 500 different adverts, obtaining a response rate of 47.2%. In order to detect the differences, the response rates for the applications submitted by couples with native names were compared with those with names of Arab origin, where the information which differentiated the application messages was only the name of the applicant (native name-Arab name). The sample was equally distributed by gender and the pairing according to origin was taken into account, so that each native female name was matched with a female name of Arab origin. The same procedure was carried out for the male population.

Table 6. Response rate for total number of applications (Origin profile)

	Applications submitted	Applications Responses
%	100	47.2
N	1,000	(472)

In this experiment, no differences were established between positive and negative responses, because the modus operandi of the real-estate agents, according to what this study has detected, is that they do not respond in the case of a negative response, a practice that explains a non-response rate that is greater than half of the sample. 52.8% of the applications did not receive a response, a non-response rate that is similar to other field studies on the rental-housing market where Arab-origin names were also included, and with the same sample (Ahmed and Hammarstedt, 2008; Bosch, 2009). In the presented data, a response only means that the real-estate agent replies, but it does not attempt to analyse the content of the response message, only whether or not there is a response.

The following table includes the responses by origin, expressed as a percentage, rates, and in brackets, the number of cases and the net discrimination. **Applications from couples with native names have a 56.6% chance of getting a response, while the equivalent applications from couples with Arab-origin names have only a 37.8% chance. This represents a difference of 18.8 percentage points.**

Table 7. Response rates according to applicant profile and net discrimination (Origin)

Man	%	50	46.8	27.6	
	N	(250)	(117)	(69)	
Woman	%	50	66.4	48.0	
	N	(250)	(166)	(120)	
Total	%	(100)	56.6	37.8	
	N	500	(283)	(189)	

*** p<0.001

The general response rate for the experiment was 47.2%. The men received responses to 37.2% of the applications, without taking origin into account, while for the women the response rate was 57.2%. The response rate for housing applications from women is 20% higher than for men, without taking origin into account. These results are not an isolated case; there is evidence of differentiated gender treatment at the expense of men in the online property rental market, whatever their origin. (Ahmed et al, 2008; Andersson et al. 2012). Ahmed and Hammarstedt (2008) show that in Sweden, men are 13% less likely to receive a response than women, whatever their origin. By contrast, although Bengtsson (2012) observes that women are 8.7% more likely to receive a response than men, this advantage would only occur for women with native names, not for women with Arab names.



Out of every 10 applications submitted, those with native names received 6 responses, while those with Arab-origin names received 4.



Out of every 10 applications submitted by women, those with native names received 7 responses, while those with Arab-origin names received 5.

Out of every 10 applications submitted by men, those with native names received 5 responses, while those with Arab-origin names received 3.

Women obtain more responses than men whatever their origin. However, in comparison with the native gender equivalent, the men with Arab names obtain 19.2% fewer responses than men with native names, while the women receive 18.4% fewer responses. The discrimination rate due to origin is therefore 18.8%. ¹⁵

Further on, in Table 12, with regard to estimates of parameters in non-linear regression, we see that in the explanation of the response model, the native-couple variable obtains more weighting than the female profile, which confirms that **discrimination due to origin has a greater weighting than discrimination due to gender**.

Table 8 shows the no-response rates for either of the couples (both no), the response rates for the two couple profiles (both yes), the responses in favour of the couple with native names and the couple with Arab names, and finally, the net discrimination resulting from the difference between the two profiles. Although it contains some data that are already shown in the previous table, this table shows why we further break down the information relating to the distribution of responses.

The distribution of responses for the paired adverts shows 41% did not respond to either of the couples, 35.4% responded to both couples, 21.2% responded only to the native couple and 2.4% responded exclusively to the couple with an Arab name.

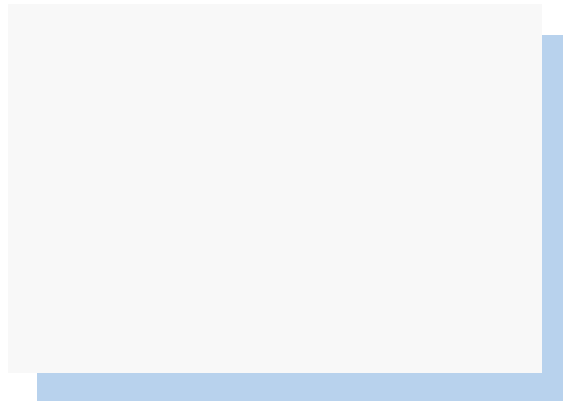
Table 8. Distribution of response rate according to profile and net discrimination. (Origin)

GENDER		Sample size (Adverts)	Total applications	Total de responses	Both no	Bothe yes	Only native names	Only Arab names	Net discrimination
Man	%	50	50	37.2	50.0	24.4	22.4	3.2	19.2*** (t=6.472)
	N	(250)	(500)	(186)	(125)	(61)	(56)	(8)	(48)
Woman	%	50	50	57.2	32.0	46.4	20.0	1.6	18.4*** (t=6.803)
	N	(250)	(500)	(286)	(80)	(116)	(50)	(4)	(46)
Total	%	100	100	47.2	41	35.4	21.2	2.4	18.8*** (t=9.375)
	N	(500)	(1,000)	(472)	(205)	(177)	(106)	(12)	(94)

*** p<0.001

¹⁵ Very similar results were obtained in the only study of reference, carried out with aggregated data from the City of Madrid and Barcelona, with a response difference of 22%. (Bosch, 2009).

The correlation of responses between the two different origins is high (Table 9), which indicates that, for the same adverts, the real-estate agents tend to respond to couples with native names and couples with names of Arab origin (58%), and even more so when the application is made by a woman, reaching 61%. Discrimination centred on the number of responses that each origin profile receives. The existence of two parallel housing markets, based on whether the name is native or of Arab origin, was not detected. The discrimination detected centred on the reduced number of offers for couples with Arab names.



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Table 9. Correlation of responses according to profile (Origin)

COUPLE WITH ARAB NAME	Man	0.515**	----	----
	Woman	----	0.616**	----
	Total	----	----	0.583**

** p<0.01

3.2. Application responses that include an appointment

Responses to applications include other information that is of interest when analysing the existence of differentiated treatment due to origin. One of the most common practices that was detected is the attitude of the agent, relating to their desire to continue with the first contact established after receiving the application. According to observations, one of the most habitual ways of continuing with the initial contact is to include the suggestion of initiating a telephone conversation, in order to give more information about the property, either by the real-estate agents taking the initiative and making the call, for which reason they ask for the candidate's telephone number, or by inviting the candidate to call the telephone number they provide.

Firstly, it should be noted that 68% of the received responses included messages indicating that, in order to receive more information about the property concerned, the candidate should call the number shown in the email, or asking for the applicant's number so that the agent could contact them by phone. This represents 34% of the total number of applications submitted.

With this type of message, it can be observed how differences in treatment are maintained, albeit to a lesser extent than in the response rate. 29.2% of couples with native names received messages inviting them to initiate a telephone conversation, compared to 22.8% of couples with Arab names, a difference of 6.4%.

However, this indicator provides little information, while also being ambiguous, as we are unable to really control for the reasons which lead the real-estate agent to establish contact via telephone. Although the body of the message usually states that the reason for the call is to provide more information, we should not underestimate the possibility that this is really because it is a means of carrying out a screening process, with the latent, or occasionally manifest, aim of obtaining more information about the profile.

As we have seen, although the request for a telephone number is common practice, using this indicator in the analysis has been rejected, as we do not know the real reasons that lead the real-estate agent to establish a telephone conversation, considering it impossible to guarantee a reliable interpretation of the results. Something similar occurs when the response includes the need to carry out a prior feasibility study. Due to the way the experiment was designed, we can only have access to those cases that make things clear in the first message, but as we stated at the start of this report, this experiment does not include an exchange of emails beyond the application and the initial response, where there is one. The reason for this is due to ethical and methodological considerations. However, in general terms, we can state that 8% of the responses to couples with native names explicitly stated the need to carry out a feasibility

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Serían tan amables de proporcionar un numero de contacto?

Le daremos más información sobre esta propiedad.

study before arranging an appointment, while this figure was 9% for couples with names of Arab origin. However, as we will see below in the section on detecting bad practices, this practice is likely to be more widespread, and very probably the wish to hold a telephone conversation before the visit conceals a large proportion of this practice.

In any event, the most appropriate indicator for analysing the content of the message is the number of appointments initially obtained by each of the profiles analysed in the Origin Experiment. Below are the percentages of applications that received a response with the possibility of viewing a property.

17.4% of native couples received an immediate invitation to view the property. 9.8% of the applications made by couples with Arab names received an appointment. The difference is 7.6%.



Out of every 10 applications submitted, applications from native names received 2 responses with the possibility of viewing the property, compared to only 1 for applications with Arab names.

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Table 10. Appointment rate according to profile (Origin)

GENDER		Sample size	Native name	Arab name	Net discrimination
Man	%	50	14.8	6.8	8.0*** (t=3.745)
	N	(250)	(37)	(17)	(20)
Woman	%	50	20.0	12.8	7.2*** (t=3.614)
	N	(250)	(50)	(32)	(22)
Total	%	100	17.4	9.8	7.6*** (t=5.209)
	N	(500)	(87)	(49)	(38)

*** p<0.001

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While the gender differences were very marked in the response rates, in the appointment rates, the results are more equal, whether we compare the results by origin or by gender, or by origin and gender, there is a downward adjustment, with a discrimination rate of 8% for men with Arab names and 7.2% for women with Arab names, in comparison to the same gender but with native couples.

Once again, women received more responses with appointments (+11.2%) than men, whatever their origin. However, when we compare the women and men with Arab names by origin, we obtain practically the same number of appointments, with a difference of 7.2% and 8% respectively.

Table 11. Distribution of appointment rate and net discrimination (Origin)

GENDER		Sample size	Total responses including appointment	Both no	Both yes	Only Native Names	Only Arab Names	Net discrimination
Man	%	50	21.6	83.2	4.8	10.0	2.0	8.0*** (t=3.745)
	N	(250)	(54)	(208)	(12)	(25)	(5)	(20)
Woman	%	50	32.8	78.4	11.2	8.8	1.6	7.2*** (t=3.614)
	N	(250)	(82)	(196)	(28)	(22)	(4)	(18)
Total	%	100	27.2	80.8	8.0	9.4	1.8	7.6*** (t=5.209)
	N	(500)	(136)	(404)	(40)	(17)	(9)	(38)

*** p<0.001

3.3 Discrimination according to the prices of properties applied for

In keeping with the results obtained so far, the rental prices accessed by the migrant population based on the discrimination exercised by real-estate agencies are higher than the prices of the properties that native couples can access.

The average monthly rental price in responses obtained by native couples is €1,276. For couples with names of Arab origin, it is €1,384, which is a difference of €108.3 more. When we select only those cases that have replied to each group, the difference is even more accentuated, with monthly prices that are €272.1 higher for the Arab-name profile.

Discrimination in the population with Arab names is concentrated in prices between €800 and €1,100, which correspond to the flats that are most in demand in the city, when property characteristics and prices are compared. The correlation between obtaining responses according to property price is positive, i.e. the higher the monthly rental price, the more responses received by the Arab-name population (0.262** ¹⁶) and this has a higher value than for the native-name population (0.176** ¹⁷).

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Figure 3. Average access price by response to native and Arab names (€)

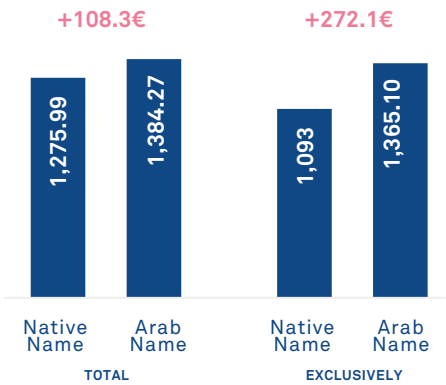
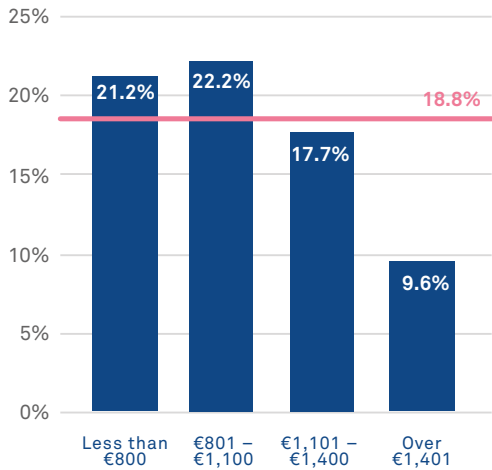


Figure 4. Distribution of discrimination according to prices of requested properties (% and €)



¹⁶ ** p<0.01.

¹⁷ ** p<0.01.

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The non-linear regression model presented below includes the available variables that are explanatory for obtaining a response to an application. We focus on the estimated value for each parameter. The most notable parameter is being part of a couple with native names (0.523), followed by a couple with Arab names (0.339). **In this model, we observe how the applicant for the property being a woman affects the response, but less so than the origin factor.** Therefore, ethnic discrimination surpasses the gender discrimination benefiting female applicants. There are three parameters that explain the model negatively: the districts according to disposable household income, whether the property has a terrace or if it has a lift.

This model depicts a scenario where, by means of hypothesis, we may assume that for the most desirable properties, in relation to location and whether there is a terrace and/or lift, and which are

therefore easier to let, the real-estate agents dedicate less effort to replying to applications.

If the publication dates of the adverts found on real-estate portals constitute a reliable source of information, then in this explanatory model, it is very likely that the parameter “Time in days since publication” would be significant in the hypothesis: more time up for rent, more chance of a response for all applications, but especially for those from couples with Arab names. This is because discrimination decreases when there are difficulties letting a property and getting a tenancy agreement signed, because the need to rent out the property takes precedence over the applicant’s profile. However, this indicator is manipulated every day on real-estate portals, placing adverts that have been around for months as recent publications. For this reason, it was not possible to introduce this factor into the model.

Table 12. Estimate of the model’s explanatory parameters (Origin)

	Estimate	Deviation Error	95% confidence interval	
			Lower limit	Upper limit
Couples with native names	0.523	0.034	0.457	0.590
Couples with Arab names	0.339	0.035	0.269	0.408
Property price	0.039	0.013	0.014	0.064
Female applicant	0.303	0.036	0.232	0.374
DFI District	-0.054	0.015	-0.084	-0.025
Terrace	-0.052	0.014	-0.081	-0.023
Lift	-0.052	0.016	-0.084	-0.021

R=0.770

4. Results for the sexual orientation experiment

4.1. Responses to applications

In comparing the response rate to applications submitted by different-sex couples and same-sex couples, where the information that distinguishes the message is based on including two names of different sexes or two names of the same sex, the results of the experiment are not sufficiently significant to be able to affirm that there is differentiated treatment benefiting different-sex couples.

The average response rate for both profiles is similar, with the same-sex couple obtaining a response rate of 52.5% while for the different-sex couple it is 54.8%, a difference of 2,6%, and a deviation of 0.5 in both cases. Such a high deviation indicates a notable dispersion of the data.

In the distribution of response rates, we find that 31.8% of the applications did not receive a response for any type of couple, while 38.8% received responses for both same-sex and different-sex couples. What is interesting to see is whether there is any symmetry between the proportion of responses from real-estate agents favouring heterosexual couples and the proportion favouring same-sex couples. It is observed that 16% of the

Table 13. Average response and typical deviation according to profile (Sexual Orientation)

Same-sex couple	0.5220	0.50002	500
Different-sex couple	0.5480	0.49819	500

Table 14. Response rates according to profile (Sexual Orientation)

GENDER		Sample size	Different-sex couple	Same-sex couple	Net discrimination
Man	%	50	50.4	46.8	3.6 (t=1.000)
	N	(250)	(126)	(117)	(9)
Woman	%	50	59.2	57.6	1.6 (t=0.492)
	N	(250)	(148)	(144)	(4)
Total	%	100	54.8	52.5	2.3 (t=1.072)
	N	(500)	(274)	(261)	(13)

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applications received responses only for different-sex couples, with 13.4% exclusively for same-sex couples, which favours heterosexual couples by 2.6%. However, we can only speak of trends, the net discrimination is very low, as is the t-student, and the p-value is far from being significant.

No significant difference is detected in the number of responses obtained. However, the correlation of the responses between same-sex and different-sex couples is low. This means that discrimination that leaves couples outside the market according to their sexual orientation was not detected, but there was differential treatment.

Differential treatment is detected, in that the responses to the profiles are for applications for different properties, as can be observed in the correlations. This leads us to think that there is no single market, with supply on one side and demand on the other, but rather separate supplies and demands according to whether the applicants are a same-sex or different-sex couple. This is accentuated in the case of homo-

sexual couples, where the correlation of responses is 35.3%. In other words, **for men, 64.7% of the received responses correspond to different adverts, according to whether they form part of a same-sex or different-sex couple.** For women, the correlation of responses is higher (45.7%), and therefore the application responses for women couples correspond to the same adverts in a greater number of cases.

In the last fifty years, in large western cities, what is known as homosexual neighbourhoods have arisen, with the presence of businesses and housing. This is something that has not happened to the same extent in the case of lesbians, Castells (1983: 140). The author sustains that this predominance of homosexuals in the creation of urban homosexual neighbourhoods, reveals profound gender differences, affirming that *“in regard to space, gays and lesbians behave, first and foremost, as men and women. Men seek to dominate their space, while women give greater importance to networks and relationships, and pay little attention to dominating their space. (...) Lesbians, in contrast to*

Table 15. Distribution of response rate and net discrimination. (Sexual Orientation)

GENDER		Sample size	Total responses	Both no	Both yes	Different-sex couples	Same-sex couples	Net discrimination
Man	%	50	64.8	35.2	32.4	18.0	14.4	3.6 (t=1.000)
	N	(250)	(162)	(88)	(81)	(45)	(36)	(9)
Woman	%	50	71.6	28.4	45.2	14.0	12.4	1.6 (t=0.492)
	N	(250)	(179)	(71)	(113)	(35)	(31)	(4)
Total	%	100	68.2	31.8	38.8	16.0	13.4	2.3 (t=1.072)
	N	(500)	(341)	(159)	(194)	(80)	(67)	(13)

homosexual men, rarely congregate in a particular territory". This does not mean to say that there are no such experiences. A decade after the publication of "The city and the grassroots" by Manuel Castells, *The National Enquirer* referred to the small town of Northampton as "Lesbianville, USA". Since those declarations at the start of the 1980s, various foci of lesbian populations have been appearing in the territory. In the case of New York, in the last decade, they have tended to congregate in Kensington, Red Hook and Harlem. To date, this phenomenon has not been detected in the City of Barcelona. The non-existence of a neighbourhood dominated by lesbians in the collective imagination, coupled with the existence of a male homosexual population, may explain the reasons why although a different housing supply was detected for male homosexuals, the same was not true for lesbian women.

In fact, the Barcelona neighbourhood that is popularly known as "Gayeixample" is even used as a selling point in the description of offers published in online adverts. Carrying out

Table 16. Correlation of responses (Sexual Orientation profile)

SAME-SEX COUPLE	M	0.353**	---	---
	W	---	0.457**	---
	T	---	---	0.410**

** p<0.01

a simple search on real-estate portal search engines, we find adverts that highlight the flat's location in, or proximity to, what is popularly known as the "Gayeixample": "The gay district is also nearby, with great nightlife and over 50 venues" in an example where the proximity to the neighbourhood is highlighted along with the price of the property, quoted as €29.1/m².

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Su ubicación es excelente, en el centro de Barcelona, y a sólo unos minutos a pie de muchos lugares de interés turístico y de negocios, los edificios de Gaudí, la Catedral de la Sagrada Familia, etc.
El apartamento está muy céntrico en una zona de moda y animada una gran variedad de restaurantes y bares elegantes o exóticos, con muchas tiendas y supermercados cerca. Hay varios clubes de gimnasio alrededor, y una piscina olímpica a solo cuerdas de distancia. El distrito gay también está cerca con una animada vida nocturna y más de 50 lugares."

Características básicas	Edificio
67 m² construidos	con ascensor

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Although this study focuses only on rental-housing adverts, we would like to emphasise the ever-increasing importance of renting rooms in the city. An increase in demand and supply which can readily be explained by unaffordable rental-housing prices in Barcelona. So much so, that on one of the main online real-estate portals, around 35% of the housing adverts in the city refer to renting rooms in shared flats. On this portal, the various characteristics that can be used to filter adverts include an option called: “LGTB friendly” ¹⁸. This filter includes around 10% of the offer for shared accommodation.

The filter is not exclusive, i.e. we cannot categorise the adverts that do not include this criteria as homophobic adverts, as the filter on this portal is only applied positively. What we are interested in highlighting is its existence, which in turn indicates a greater awareness from real-estate portals about the possibility of discrimination due to sexual orientation, in terms of getting access to shared housing.

Ver 856 resultados

Cancelar

☐ 4 o +

Características de la habitación

☐ Admite parejas

☐ Admite niños

☒ LGTB friendly

☐ Baño privado

Características del inmueble

☐ Aire acondicionado

☐ Ascensor

¹⁸ It should be noted that the real-estate portal originally included the filter “gay friendly”, and that at the request of the organisation, [The Equality Advocacy Project](#) it subsequently modified this to “LGTB friendly” in order to include all other types of sexual diversity.

4.2. Application responses that include an appointment

We will now present the results for appointments obtained according to the profiles analysed in the Sexual Orientation experiment. 18.6% of heterosexual couples received an immediate invitation to visit a property. 14.8% of applications from same-sex couples obtained an appointment to visit the property concerned. This is a difference of 3.8%. The differences only concern the male profile; heterosexual men obtain 7.2% more appointments than homosexual men.

In contrast to the responses obtained, appointments to view the properties are statistically significant (3.8%), and can be explained by the differences between heterosexual male partners and homosexual men (7.2%).

The discrimination model shows trends but they are very weak. At the same time, we observe that, for obtaining responses, gender has a greater weighting than sexual orientation. The differences can be explained more by the fact of being a woman than by forming part of a heterosexual or same-sex couple. In this model, the price and district according to disposable family income also has an explanatory weight, and it is also negative. If the characteristics of the flat, in terms of having a terrace and lift, have weight in the original experiment, here they disappear, being replaced by price and m², with a negative relationship.

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Table 17. Appointment rates according to profile (Sexual Orientation)

GENDER		Sample size	Different-sex couple	Same-sex couple	Net discrimination
Man	%	50	15.4	8.4	7.2*** (t=3.242)
	N	(250)	(39)	(21)	(18)
Woman	%	50	21.6	21.2	0.4 (t=10.175)
	N	(250)	(54)	(53)	(1)
Total	%	100	18.6	14.8	3.8* (t=2.331)
	N	(500)	(93)	(74)	(19)

*** p<0.001, * p<0.05

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Table 18. Distribution of appointment rate and net discrimination (Sexual Orientation)

GENDER		Sample size	Total responses including appointment	Both no	Both yes	Different-sex couples	Same-sex couples	Net discrimination
Man	%	50	18.4	81.6	5.6	10.0	2.8	7.2*** (t=3.424)
	N	(250)	(46)	(204)	(14)	(25)	(7)	(18)
Woman	%	50	28.4	71.6	14.4	7.2	6.8	0.4 (t=10.175)
	N	(250)	(71)	(179)	(36)	(18)	(17)	(1)
Total	%	100	23.4	76.6	10.0	8.6	4.8	3.8* (t=2.331)
	N	(500)	(117)	(383)	(50)	(43)	(24)	(19)

*** p<0.001, *p<0.05

Table 19. Estimate of the model's explanatory parameters (Sexual Orientation)

	Estimate	Deviation Error	95% confidence interval	
			Lower limit	Upper limit
Same-sex couples	0.444	0.035	0.376	0.512
Different-sex couples	0.451	0.036	0.381	0.521
Female gender	0.526	0.039	0.448	0.603
Price	-0.121	0.024	-0.168	-0.075
M ²	-0.103	0.023	-0.148	-0.058
DFI District, 2017	-0.070	0.018	-0.105	-0.035

R=0.384

5. Conclusions

Two field experiments were carried out, based on access to rental housing in the City of Barcelona. The first looking at differential treatment due to origin, and the second, due to sexual orientation. Both experiments searched for differences in the treatment received by real-estate agents, in the form of no response or response, and in the case of a response, the content, based on whether it included an appointment to view the property or not. The study is focused solely on the initial phase of the rental process. Therefore, the results shown in terms of access opportunities or restrictions are only explanatory for this period of contact.

Existence of discrimination due to origin: restricted access to the rental market for couples with arab names.

In the Origin experiment, differential treatment was detected for applications, in both the number and content of responses, in relation to the opportunity to view the property.

There is a response difference of 18.8% that excludes applicants with Arab names, with a slightly higher difference in the case of male applicants with an Arab name (19.2%). In the sample rental units, for every 10 applications submitted by a couple with Arab names, they received 2 responses fewer than the native couple.

With regard to appointments obtained, the differences are smaller, both in terms of differential treatment by gender and in relation to origin. However, there is still discrimination. The couple with Arab names obtained 7.6% fewer appointments than the couple with native names.

The correlation of responses between couples according to origin is high, which in principle indicates that there is no discrimination in terms of a segmen-

tation of the rental housing market, expressed in differentiated markets, but rather restricted access for the couple with Arab names, with fewer opportunities for access, expressed in fewer responses to the same adverts.

The applicant's ethnic origin has more explanatory weight in obtaining responses than their gender.

The response rate for women (57.2%) is significantly higher than for men (37.2%), without taking origin into account. However, when we introduce Arab names, the discrimination rates according to gender, compared to the equivalent native applicant, remains practically the same for both men (19.2%) and women (18.4%) with a difference of 0.8 percent.

The non-linear regression model, which includes the variables that are significant for explaining application responses, indicates that the most notable parameter is being part of a native couple (0.523), more than gender (0.303). Therefore, ethnic discrimination surpasses the gender discrimination benefiting female applicants.

Greater discrimination due to origin in more affordable rental-price segments.

The population with names of Arab origin would have access to fewer, more expensive flats. In terms of average rental prices, the differences in the responses obtained between couples with native names and those with Arab names is €108.3 per month, and €272 if the averages of only responding to one of the two profiles are compared.

The requested properties with prices below €1,100 show a discrimination rate that is higher than the average for properties as a whole. These properties are

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precisely those that are most in demand in the city, when we consider them in terms of the property's characteristics and price. The correlation between obtaining responses according to property price is positive, i.e. the higher the monthly rental price, the more responses received by the population with names of Arab origin (0.262**), with a higher value than that of the native-name population (0.176**).

Discrimination trend concerning greater reluctance to offer property viewing for the homosexual couple profile (men).

In the Sexual Orientation experiment, no differential treatment of applications is detected with regard to the number of responses. The average response rate for both profiles is similar, with the same-sex couple obtaining a response rate of 52.5% while for the different-sex couple it is 54.8%, a net discrimination of 2.6 percent, without statistical significance, and a deviation of 0.5 in both cases.

The discrimination model for responses shows trends, but they are very weak. At the same time, we observe that in obtaining responses, the applicant's gender has a greater weighting than their sexual orientation. No discrimination is detected in the case of lesbian couples, while a weak, non-significant trend of discrimination is found in male homosexual couples.

By contrast, with regard to responses that include an appointment in the message, a differential treatment of 3.8% is detected, in this case significant, which can only be explained by net discrimination of male same-sex couples, (7,2%). In the case of women, the differential treatment is 0.4%. This therefore shows that there is greater reluctance to arrange a viewing appointment with couples of the same sex, but only in the case of those formed by men.

Redistribution of homosexual couples (men) in a differentiated market.

The probable existence of a rental market segmented by male sexual orientation has been detected. A differentiated market that is not observed in the case of lesbian couples, where there is a greater overlap with heterosexual couples in responses to adverts. A practice that should not be surprising if we take into account that one of the analysed portals was applying a "Gay friendly" filter for shared flats, subsequently changed to "LGTB friendly", due to pressure from the LGTBI community.

SUMMARY OF RESULTS

Is there ethnic discrimination involved in the differentiated treatment received by people with Arab names who are looking for a flat through online adverts on rental-market platforms in the City of Barcelona?

There is evidence of discrimination that negatively affects couples with Arab names, who obtain 18.8% fewer responses than native couples. The couples with Arab names also have less access to flat viewings. In this case, the discrimination is 7.6%.

Are the applications submitted by men with Arab names treated differently to those submitted by native men?

Differentiated treatment that negatively affects male applicants with Arab names has been detected, with a discrimination of 19.2% for obtaining responses, and 8% for the offer of flat-viewing appointments.

Are the applications submitted by women with Arab names treated differently to those submitted by native women?

Differentiated treatment that negatively affects female applicants with Arab names has been detected, with a discrimination of 18.4% for obtaining responses, and 7.2% for the offer of flat-viewing appointments.

Is there sexual-orientation discrimination involved in the differentiated treatment received by same-sex couples who are looking for a flat through online adverts on rental-market platforms in the City of Barcelona?

There is no evidence of statistically significant discrimination in receiving responses to applications (2.3%). However, significant discrimination is observed in the offer of flat-viewing appointments (3.8%).

Are the applications submitted by heterosexual men treated differently to those submitted by homosexual men?

The response is affirmative, although significant discrimination is not observed in the responses, a trend of greater reluctance to offer viewing appointments is detected, which negatively affects homosexual men (7.2%). The existence of two differentiated rental markets is also suspected: a heterosexual market and a homosexual market (men).

Are the applications submitted by heterosexual women treated differently to those submitted by lesbian women?

No significant discrimination is detected, either in obtaining responses or viewing appointments. Nor has a segmented market for this population profile been detected.

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