Who Gets the Keys? Exploring Discrimination in Tenant Selection

Mathieu Bunel
Marie-Noëlle Lefebvre
Elisabeth Tovar
Laetitia Tufféry

2025-24 Document de Travail/ Working Paper

EconomiX - UMR 7235 Bâtiment Maurice Allais
Université Paris Nanterre 200, Avenue de la République
92001 Nanterre Cedex

Site Web : economix.fr
Contact : secreteriat@economix.fr
Twitter : @EconomixU

Who Gets the Keys? Exploring Discrimination in Tenant Selection[1]

Mathieu Bunel[2]
Université de Bourgogne and IREDU
Esplanade de la Paix, 21000 Dijon
mathieu.bunel@u-bourgogne.fr

Marie-Noëlle Lefebvre
Ecole Supérieure des Professions Immobilières
ESPI2R and CRED
12, rue Belgrand, 92300 Levallois-Perret
m.lefebvre@groupe-espi.fr

Élisabeth Tovar
Paris Nanterre University and EconomiX
200, avenue de la République, 92000 Nanterre
etovar@parisnanterre.fr

Laëtitia Tuffery
Nîmes University and CHROME
5, rue du Docteur Georges Salan, 30021 Nîmes
laetitia.tuffery@unimes.fr

March 24th, 2025

Abstract

Discrimination in the rental housing market is a persistent issue, yet the mechanisms underlying biased decision-making remain insufficiently explored. While correspondence studies have extensively documented ethnic discrimination, they often fail to capture the full decision-making process or control for supply-side factors such as landlord preferences. In this multifactorial survey experiment, we asked 723 real estate students to rate 2,169 tenant applications, manipulating both demand-side (origin signals, social status and pool competition ethnic mix) and supply-side (landlord preferences and property quality) factors. Our findings reveal that skin colour elicits stronger discrimination than name-based ethnic cues, and that high social status significantly moderates discrimination against minorities. Furthermore, landlord preferences play a crucial role in shaping real estate agents' decisions, with discriminatory instructions amplifying biases. The study also highlights the role of competition effects, showing that discrimination is more pronounced when minority applicants compete against majority applicants. By shedding light on the interplay between applicant characteristics, market conditions, and decision-making processes, our study contributes to a more comprehensive understanding of rental market discrimination and suggests avenues for policy interventions.

Highlights:

- Using a survey experiment allows exploring new dimensions of rental discrimination.
- Skin colour is more discriminatory than foreign-sounding names.
- Landlord preferences outweigh rental agents' personal biases.
- High social status does not always protect minority applicants.
- Competition effects increase discrimination against minorities.

Keywords: survey experiments, rental housing market, discrimination

JEL Codes: C83, C99, J15, R31

1 We would like to thank all the teachers who supervised the survey sessions, as well as the administrative staff of the school for their valuable support in organising and conducting the data collection. We would also like to thank participants of the 19th TEPP conference, INED Séminaire Café and 1st ESPI - IREC conference.

2 Corresponding author.

1. Introduction

Ethnic discrimination in the rental housing market is a well-established fact in multiple contexts. Attitudinal surveys regularly show that respondents report a high level of discrimination in the housing market. For example, in France, a recent survey shows that, in general, 46% of respondents believe that there is a high level of discrimination in the housing market, and that, among the respondents who looked for a rental in the five years preceding the survey, 14% actually experienced discrimination (*Défenseur des Droits*, 2017). Further, in the US context, Christensen & Timmins (2023) show that discrimination imposes damages equivalent to 4.4% and 3.5% of the annual incomes for African American and Hispanic tenants, respectively.

To document the reality of discrimination in the housing market, the literature first used audit studies[3], where trained actors with different observable characteristics (gender, age, skin colour, accent) were sent in person to interact with rental agents or landlords.

Ethical and logistical challenges (Oh & Yinger, 2015) and debates about the validity of this method in actually measuring discriminatory behaviour (Heckman, 1998) have led to more recent research to mobilise the correspondence method. This method, which involves submitting fictitious applications to real property listings, has proven effective in isolating causal effects related to specific applicant signals, such as ethnic background, communicated to landlords. Since the persistence of discriminatory behaviour on the housing market has been documented by a large amount of papers.

In addition to highlighting discriminatory behaviour, these studies have also shown that landlords' responses are highly sensitive to various factors: i) the nature of the signal sent to landlords by testing different types of foreign first and last names or by adding a quality signal ii) the ethnic composition of the neighbourhoods where the offers are located iii) the status of the landlords: real estate agents and private landlords (Auspurg et al., 2019; Flage, 2018; Fryer and Levitt, 2004; Oh & Yinger, 2015; Quillian et al., 2020; Verhaeghe, 2022).

However, as Guryan et al. (2013) note, while correspondence studies excel at measuring the *outcomes* of discrimination, they struggle to disentangle its *mechanisms* or account for supply-side dynamics. For example, correspondence studies cannot easily manipulate landlords' preferences, property characteristics, or the ethnic composition of applicant pools—factors theorised to shape discriminatory behaviour (Phillips, 2019; Ghekiere et al., 2022). Similarly, from the demand side, they mostly rely on names and surnames, rather than physical appearance, to signal origin, which runs the risk of biased the extent of taste-based discrimination (Branigan et al., 2023).

This paper builds on recent work using factorial surveys in housing economics (Wolter et al., 2023; Ghekiere et al., 2022, Bunel & Tovar, 2024) and addresses these limitations through an original vignette-based survey experiment conducted with 723 students at a French school of real estate. The use of this pool of respondents has the notable advantage of being able to assess the impact of attending an anti-discrimination conference and completing a deontology course (as required by the 2014 ALUR Law) on their attitudes towards discrimination.

By simulating rental application evaluations, we isolate the causal effects of three understudied dimensions: (1) the interplay of origin signals (skin colour vs. ethnically marked names), (2) client-based discrimination (explicit landlord preferences), and (3) market competition (ethnic composition of applicant pools). Our design advances the methodological debate in two ways. First, unlike correspondence studies that fix supply-side parameters, we systematically vary property quality (renovated vs. dilapidated units) and landlord policies (neutral, discriminatory, or in-group favouritism). Second, we measure not only callback intentions ("visit intention") but also agents' perceptions of landlord satisfaction, thereby disentangling agents' own biases from their adherence to client preferences.

Our results challenge three assumptions in the literature. First, we find that *skin colour*—a marker of immutable racial identity—drives the strongest penalties, consistent with taste-based discrimination

3It should be noted that the work of the sociologist Daniel (1968) is often presented as the first to mobilise the testing method on the English housing market.

(Becker, 1971). We find evidence that the impact of skin colour (associated with taste discrimination) is stronger than the impact of first and last names (associated with statistical discrimination) which are commonly used to denote origin in correspondence studies (Bosch et al., 2010; Ewens et al., 2014). Second, we document asymmetrical "pool competition effects": minority applicants face harsher penalties when competing against white tenants, whereas white applicants remain unaffected by minority competition. Third, in contrast to studies highlighting independent agent bias (Flage, 2018), discrimination vanishes when landlords express no ethnic preferences, suggesting that landlord preferences - rather than agent bias - are the main driver.

The rest of the paper is organized as follows. In the next section, we present the factors that the literature shows to be a source of discrimination in the housing market, as well as our working hypotheses. In Section 3, we present our design, data collection process and econometric strategy. Our results are presented in Section 4. Sections 5 concludes the paper.

2. Literature review and working hypotheses

In this section, we review the factors that recent studies have identified as key determinants of discrimination in the rental housing market, and present the working hypothesis that will be tested in this study. First, we present the discussion on the interaction of origin (names and skin colour) and social status as markers of taste and statistical discrimination. Second, we explore other dimensions that are less frequently explored in papers that rely on correspondence studies: landlord preferences, property characteristics and pool competition effects.

2.1. Origin signals, taste and statistical discrimination

Although it is not always easy to distinguish between these two phenomena, origin-based discrimination in the housing market can be driven by statistical (Arrow, 1973; Phelps, 1972) and taste-based discrimination (Becker, 1957 & 1971). Statistical discrimination arises when individuals use observable characteristics as proxies for unobservable characteristics, such as economic status or reliability, while taste-based discrimination reflects personal biases or prejudices against certain groups, independent of economic considerations.

Discrimination studies have tried to understand better how different types of origin signals (surname, first name or skin colour) might underlie these two forms of discrimination.

Names, geographical origin and religion

In order to identify the causal effect of origin, correspondence studies are carried out in which identical fictitious applications are sent to genuine rental housing offers except for the first and/or last names of the applicants: one suggests a foreign origin, the other a national origin. Extensive research across multiple contexts confirms applicants suggesting a foreign origin through their name are discriminated in the housing market[4].

More specific studies show that the size of the foreign penalty varies according to the geographical foreign origin[5] or by the level of integration suggested by the surname and first name). Latter studies combine a foreign surname with a national first name[6].

4 In the US, correspondence studies show evidence of discrimination against tenants with Afro-American-sounding names (Carpusor & Loges, 2006, Oh & Yinger, 2015; Quillian et al., 2020). A similar penalty has been found in France for applicants with a sub-Saharan-African-sounding names (Acolin et al., 2016; Bunel et al., 2022), North African-sounding names (Le Gallo et al., 2019; Bunel et al., 2021), or a Kanak names (Bunel et al., 2019). Other experiments carried out in various European countries have produced similar results (see Andersson et al. (2012) in Norway and Öblom & Antfolk (2017) in Finland for Arabic-sounding names; Lepinteur et al., (2025) in Luxembourg for sub-Saharan African surname, Bosch et al. (2010) in Spain for immigrants; Gusciute et al. (2020) in Ireland for Nigerian and Polish-sounding names , Auspurg et al. (2017) in Germany for turkish names).

5For instance Martiniello & Verhaeghe (2023) and Verhaeghe et al.(2023) in Belgium compare foreign tenants with Moroccan and Polish names. In Ireland, Gusciute et al. (2020) compare tenants with Polish and Nigerian names; in Sweden, Carlsson & Eriksson (2014) and Molla et al. (2022) find evidence of discrimination against tenants with Arabic/Muslim-sounding names and Eastern European- and East Asian-sounding names respectively . In the US context, some studies (Hanson & Hawley, 2011; Ewens et al., 2014) also find that African-American and Latino racial-sounding names are discriminated against.

6In the US, Gaddis & Ghoshal (2020) show that whether Asian and Hispanic room-seekers face significant discrimination varies based on whether they use predominantly White first names or traditional first names. Ghekiere et al. (2023) show that rental

In addition, some authors note that first names can send a mixed signal by conveying information about both origin and religion (Gaddis, 2017; Martiniello and Verhaeghe, 2023)[7].

In this paper, we choose to align both signals in order to amplify origin effects, using surname/name combinations that simultaneously suggest North African origin and Muslim religion or French origin and non-Muslim origin (for methodological details see section 3.2). We also manipulate two other markers of origin used in the literature to distinguish between statistical and taste-based discrimination: skin colour and social status.

Skin colour

Unlike names, which require interpretation or cultural knowledge, skin colour is an immediate and highly visible marker of racial or ethnic identity. As a result, discrimination based on skin colour is often more directly related to taste-based rather than statistical discrimination.

Studies find evidence of skin colour-based discrimination in many markets (see for example, Doleac and Stein (2013) on iPods sales,Ayres et al. (2015) on the sale of baseball cards on eBay, and Kakar et al. (2018) on Airbnb rentals in San Francisco). In the labour market, Weichselbaumer & Schuster (2021) use a correspondence study to find that the combination of name and photo has a causal impact on discrimination for applicants of African origin, while the two signals work in opposite directions for applicants of Asian origin. In the US market, Koopmans et al. (2019) investigate the impact of including a photograph to their job application that would make their ethnicity salient or when they hold a local-sounding name. Polavieja et al. (2023) also find evidence of very strong skin-colour-based discrimination in the German, Dutch and Spanish labour markets. Others, such as Bellemare et al. (2023), also use photographs to study discrimination against disabled people.

Studies of race in the housing market have become increasingly rare since Heckman's (1998) critique of the limitations of in-person paired audits. However, using in-person paired audits conducted by the U.S. Department of Housing and Urban Development (HUD) in 2012, Branigan & Hall (2023) document the causal effect of skin colour discrimination against blacks and Hispanics in the US rental housing market. They find contrasting evidence on the causal effect of skin colour on the total number of units shown and on the rent or price of the property. Darker skin is a source of discrimination for the first dimension (the number of units shown is lower and the controls are higher, criminal background check or a credit check) but seems to be an advantage for the price obtained with different patterns for Black versus Hispanic tenants.

Social and professional status

Regardless of discrimination, Bonnet & Pollard (2021), based on interviews of 51 rental agents in Paris and Geneva, report that real estate agents use the income criterion as a category to organize the tenant's application worthiness.

Ewens et al. (2014) and Gaddis (2017) show that first names convey information about the social origin of applicants and may generate statistical discrimination behaviour if this information is used by landlords to deduce a level of income. However, their empirical results do not really support this intuition.

Other studies test more directly the impact of the social or the professional status by adding information on their professional situation to the text sent to owners. Signalling a high socioeconomic status lowers this discrimination, an indicator of statistical discrimination: see Bosch et al. (2010) for Spain, Horr et al. (2018) for Germany, Andersson et al. (2012) for Norway and Ewens et al, (2014) for US. In the French context, Bunel et al. (2016, 2017) and Le Gallo et al. (2019) find that being a tenured civil servant lowers the risk of discrimination of ethnic minorities.

In this study, we use of a multifactorial vignette-based survey experiment that allows us to disentangle the relative importance of statistical and taste-based discrimination by controlling for the tenants' names, social status and skin colour (see Bunel & Tovar, 2024; Ghekiere et al., 2022, 2024; Wolter et al., 2023 for previous papers that use this methodology in housing economics).

applicants with mixed names (Belgian surname with Moroccan or Polish names) are less likely to experience discrimination than applicants with homogeneous names.

7Note that Flage (2018), in a meta-analysis based mainly on North American markets, finds no significant differences in discrimination between African applicants and those from Arab Muslim countries.

Our working hypotheses concerning origin signals, taste-based preferences, and statistical discrimination are as follows:

- [H1 *Phenotype penalty]*: Rental applications submitted to Black tenants (photograph scenario) with a French-sounding name will be evaluated less favorably than those of with a foreign-sounding name and no visible phenotype (no photograph scenario).
- [H2 *social status relevance]*: Black tenants with higher social status will face less discrimination than those with lower social status.

2.2. Beyond applicant signals and first-stage outcomes: market effects

Landlord preferences: client-based discrimination and in-group preferences

In a correspondence study, fictitious applications are sent to a mix of individual owners and real estate agents. These two groups of agents may behave differently, since the latter may be affected by client discrimination (theorised by Becker, 1957, 1971) rental agents reflect the discriminatory preferences of their landlord clients. In the US, Choi et al. (2005) showed that discrimination in the rental housing market could stem from the agents' taste-based discrimination, but also from their willingness to cater to the preferences of their white clients.

In France, the anti-discrimination association *SOS Racisme* regularly audits[8] real estate agencies and consistently shows that almost half of them do not object to discriminatory requests from their landlord clients.

In the absence of sufficient statistical power, few studies highlight a significant difference in behaviour between these two groups of agents (landlords versus real estate agents). However, the meta-analysis implemented by Flage (2018) found that individual landlords had a higher level of discrimination than real estate agents.

However, this result can be explained by several phenomena that are difficult to disentangle in a testing: on the one hand, agencies may be characterised by lower levels of discrimination than individual landlords; on the other hand, a selection effect may mean that landlords who use agencies to rent their property are less discriminating than those who rent their property directly; and finally, agencies may filter out some of the discriminatory requests from landlords.

As pointed out by Verstraete & Verhaeghe (2020) and Ghekiere et al. (2022), a vignette-based experiment provides an opportunity to disentangle these different mechanisms, as it is possible to control and observe the requests of landlords using the agency service. In the observed discriminatory behaviour, it is then possible to distinguish between pure discrimination on the part of real estate agents, whether based on taste or statistics, and discrimination resulting from the transmission of client preferences.

Most studies focus on negative client-based discrimination, whereby minority applicants are denied housing opportunities due to perceived landlord preferences. However, in-group favouritism (see Tajfel & Turner, 1979, McPherson et al., 2001 and Currarini & Mengel, 2016), where landlords actively favour applicants from their own ethnic or racial group, is also a relevant mechanism shaping patterns of discrimination.

Recent evidence shows that homebuyers are willing to suffer a price premium to acquire a property in neighbourhoods with shorter cultural distance to their culture of origin (see Deng et al., 2021, in Sydney and Agarwal et al., 2019, in Singapore). On the rental housing market[9], there is limited and contrasting empirical evidence on whether minority landlords or real estate agents discriminate in favour of tenants from their own community. In Sweden, Ahmed & Hammarstedt (2008) find no significant impact of the landlords' immigrant background on their discrimination of non-Swedes. Koppensteiner et al. (2022) find that in London the ethnic composition of rental agencies has no mitigating impact on discrimination against tenants with non-UK accents - but they had no information on the ethnicity of individual rental agents. Opposite these findings, Carlsson and Eriksson (2014) find that in Sweden housing discrimination is significantly correlated with the landlord's ethnicity (i.e.

8Although SOS Racisme's audits are not destined to be published in academic papers, they follow the standard practice of audit studies and are led in as part of a partnership with the leading federation of real estate professionals in France (FNAIM).
9Jacquemet and Yannelis (2012) tested ethnic homophily in the Chicago labour market.

whether he or she has a native Swedish or an ethnic minority name). On the peer-to-peer AirBnB market, Edelman et al., (2017) find significant evidence for guest homophily for African American females (but not for other landlord categories).

In this paper, in line with the literature on in-group preferences , we investigate the impact of "positive" discriminatory preferences. We consider the situation where a landlord who belongs to a minority group wants to discriminate *in favour* of members of their own group. To our knowledge, this study is the first to include in-group positive discrimination in its design. We then manipulate the landlord's preferences towards the minority (negative, positive or neutral) to test the hypothesis that real estate agents pass on the preferences of their clients, the landlords.

This means that regarding the landlord preferences and comparing to a neutral situation where landlords do not mention any preferences regarding the origin of tenants, our working hypotheses are as follows:

- [*H3a client-based ethnic discrimination*] Discrimination based on origin will be stronger when landlords express reluctance to rent to people from ethnic minority backgrounds.
- [*H3b client-based in-group favouritism*] Discrimination will be weaker when landlords express a preference for renting to members of their own ethnic minority group.

Property characteristics: quality and location

Siegelman (1998) shows that, in addition to outright refusal to sell or provide access to services, discrimination can take the form of providing lower quality services and/or at a higher price. The literature shows contrasting effects of quality-related discrimination heterogeneity in the housing market.

A first strand of the literature focuses on unit sizes and prices. For Spanish cities, Bosch et al. (2010) did not find any evidence that discrimination against Moroccan applicants varied by unit quality or price. More recently, Koppensteiner et al. (2022) argued that it is difficult to identify the effect of housing quality using data from a testing campaign, because in most cities we observe a strong correlation between the housing prices and the ethnic composition of the neighborhood. For London, they did not find that the interaction between low rents and having a non-British accent did not have a significant effect. In contrast, Baldini & Federici (2011) found that foreign names were more discriminated against when sending emails for small units, especially for women, but also that the rent of the unit did not affect the degree of discrimination. Carlsson and Eriksson (2014) showed that, in Sweden, tenants with an Arabic/Muslim name appeared to have a higher invitation rate for small units, and that there was a negative effect for applicants with a male Arabic/Muslim name when the rent was low.

Based on the literature results on discrimination and property characteristics, we test the following hypothesis:

- [H4 *quality effects*] ethnic discrimination will be higher for good quality housing units (renovated and in desirable neighbourhoods) than for units of lower quality (unrenovated and in difficult neighbourhoods).

A second strand of the literature focuses on neighbourhood effects. Many correspondence studies show that discrimination is more prevalent in suburbs (Molla et al., 2022, in Sweden) or in specific city areas (see Martiniello et al., 2023 in Belgium) or in areas with key amenities (Bunel et al., 2022, Christensen & Timmins, 2023). By contrast, Veterinorov et al. (2022) found that, in Moscow, explicit discrimination is more common for lower quality housing in the outskirts of Moscow than for higher quality housing in the city centre.

Other papers show that the ethnic mix of the unit's neighbourhood has an impact on discrimination, ethnic discriminations of minorities being higher in majority neighbourhoods: see Ewens et al. (2014 and Hanson & Santas (2014), in the US, Ghekiere et al. (2022) and Martiniello et al. (2022) in Belgium, MacDonald et al., (2017) in Australia, Bunel et al. (2017) in France, and Carlsson et al. (2014) in Sweden. In contrast, Hanson & Hawley (2011) show that the discrimination of tenants with African-American sounding names is higher for units located in "tipping" neighbourhoods as defined by Card et al. (2008). A similar result was found in Molla et al. (2022) where, the higher the share of foreign-born residents in the municipality/city district where the rental unit was located, the lower the likelihood that an applicant received a callback. Similar results were found by Auspurg et al. (2017),Koppensteiner et al. (2022) and Murchie et al. (2021).

Other papers show evidence of steering, i.e. the fact that majority and minority tenants are favoured over, respectively, high-quality and low-quality properties. Christensen & Timmins (2022) report that, in the US, steering by real estate agents constrains minority homebuyers' neighbourhood options, funnelling African American and Hispanic testers toward areas with inferior schools, higher pollution exposure, and reduced economic mobility potential compared to equally qualified white counterparts. A similar result was found by Ghekiere et al. (2022), who found that ethnic minority applicants were favoured over ethnic majority applicants in poor quality units and neighbourhoods.

In this paper, the use of a survey experiment allows us to test the causal effect of the housing unit's characteristics (flat quality and location) on the discrimination of minority tenants. We test the following hypothesis:

- [H5 *gatekeeping*] compared to a White tenant with a French surname, estate agents will discriminate less against ethnic minority tenants for poor quality properties (to be renovated and in a bad neighbourhood) than on good quality properties (newly renovated in a desirable neighbourhood).

Pool competition effects

Last, another limitation of correspondence studies is that they can not control for the characteristics of the fictitious applicants' competitors.

This is problematic since Phillips (2019) demonstrates that applications create "pool competition effects" by generating external effects on each other, and that these differences in treatment affect the measurement of discrimination because these experiments no longer adhere to the Stable Unit Treatment Value Assumption (SUTVA) hypothesis. Phillips (2019) proposed an identification strategy for this external effect, in which an additional characteristic is randomly introduced into the applications, but in a non-stratified manner.

To our knowledge, there are no studies estimating the causal impact of the pool competition effect on the housing market beyond the papers on the heterogeneity of discrimination across ethnically diverse neighbourhoods presented above. However, Ghekiere et al. (2022) have recently discussed the fact that the tightness of the rental market may have an impact on competition. They hypothesise that in tight rental markets, not inviting an ethnic minority applicant for a viewing would have a doubtful effect on the agent's profit or the chance of renting the unit, as the agent could easily find another good tenant applicant.

In this paper, the use of a vignette-based experiment allows us to fully manipulate the ethnic composition of the pool of applicants, and to test the following hypothesis:

- [H6a *minority penalty*] Ethnic minority tenants are treated less favourably when competing against White tenants with French surnames than when competing against other ethnic minority tenants.
- [H6b *majority premium*] White tenants are treated more favourably when competing against minority tenants than when competing against other White tenants.

2.3. Training Effects

Finally, the literature shows that information treatments have a causal effect on discrimination. In the French context, Chareyron et al. (2023) showed that sending letters from the *Défenseurs des droits* (right defenders) reminding estate agents of anti-discrimination laws significantly reduced discriminatory behaviour among French real estate agents. Ghekiere et al. (2024) also showed that a training intervention among real estate students decreased both taste and statistical discrimination. Using correspondence tests, Bao (2024) shows that, in the UK housing market, incorporating anti-discrimination messages to encourage adherence to the social norm of 'equality, diversity and inclusion' reduces gender and ethnic discrimination.

In this study, we take advantage of the fact that our experiment was conducted in a real estate school to test the impact of two interventions on the respondents' discrimination: a course on the deontology of real estate professionals and a conference on discrimination in the rental housing market (more details in the methods section below).

In line with the literature, our working hypothesis is that:

- [H7 *training effect*] respondents who have been made aware of the French anti-discriminatory regulations as part of an ethics course and/or followed a conference on discrimination are less likely to discriminate than those who have not received such instruction. 3. Methods

In the next section, we introduce the survey experiment methodology and discuss its relevance to the study of discrimination in the housing market (3.1.). We then present the design of our experiment (3.2) and the data collection process (3.3). Finally, we present our econometric strategy (3.4).

3. Methods

3.1. Relevance of a vignette-based multifactorial survey experiment

To elicit the causal impact of the factors discussed above on discrimination in the housing market, both on the demand-side (the tenant's origin and social status signals of tenants and the ethnic mix in the pool of competing tenants) and on the supply-side (landlord preferences and housing unit quality), we use a vignette-based multifactorial survey experiment (see Haaland et al., 2023; Neumark, 2018; Wallander, 2009; Walzenbach, 2019 for recent surveys).

Vignette experiments fall under the 'Goldberg paradigm experiments' (Bertrand & Duflo, 2017). In a survey experiment, experimenters create a pool of hypothetical scenarios ("vignettes") that simulate a real-life decision-making situation. The scenarios vary on key factors manipulated by the experimenters; respondents are randomly assigned to a scenario and asked what choice they would make in that situation. Causal effects of the manipulated factors are measured by comparing the solutions chosen by respondents across alternative scenarios.

Vignette-based survey experiments are becoming a versatile and well-established tool in economics, particularly in studies of discrimination: see, for example, Bunel & Tovar, 2021; Finseraas et al., 2016 in the labour market. In the housing market, Wolter et al. (2023) study the effect of the ethnic composition of neighbourhoods on their rating by a representative sample of the German population, showing evidence of discrimination against ethnic minorities. In the US, Gaddis & Ghoshal (2020) use a survey experiment to show that whether Asian and Hispanic apartment seekers face significant discrimination depends on whether they use predominantly white first names or traditional first names. In Belgium, Ghekiere et al. (2022) also use a vignette survey experiment to study the relative effect of statistical and taste-based discrimination, as well as the impact of neighbourhood characteristics.

Compared to field experiments such as correspondence and audit studies, survey experiments allow for the study of dimensions of discrimination in the housing market that have so far been poorly documented. First, in correspondence studies, only the demand side of the market can be manipulated (the applicants' profiles), while the supply side of the market is a given (housing units characteristics such as their quality and location), and the interaction between landlords and rental agents are unobservable. In a vignette experiment, experimenters can manipulate all of these parameters (applicants' age, income level, employment status, preferences; housing unit's location, size, quality, amenities; landlord's preferences; rental agent's preferences and professional goals…). Second, in correspondence studies, experimenters have information on the characteristics of the set of fictitious applicants (usually, one majority and one minority applicant) they created. They do not have information on the full pool of applicants that were actually competing against their applicants, and cannot report on competition effects, as argued by Phillips (2019). By contrast, in a vignette experiment, respondents make their choice given the full set of available applicants. Experimenters can therefore manipulate the number and characteristics of each competitor. Last, correspondence studies provide information only on the first stage of the screening process: their outcome variable is based on their applicants' callback from housing professionals. Using a vignette survey experiment allows experimenters to ask respondents about a series of choices that map out the complete screening process: assessment of each applicant, decision to call them back, decision to organize a visit, decision to rent the housing unit…).

These advantages over field experiments are balanced by some disadvantages. First, respondents are not necessarily the actual decision makers; they may not be able to project themselves into the

fictional situation described in the vignette. Second, there is no certainty that the choices made by respondents' fictional framework of the experimental vignette correlate with their actual behaviour in the field.

There are several ways to mitigate these limitations. The fictional nature of vignette survey experiments can be used to describe the decision-making context with all the information needed to reproduce reality. In this study, for example, our vignette includes a description of a housing unit and its landlord's requirements, information on the local price ranges for similar properties, and the application files of potential tenants. In addition, it is possible to select respondents who are not naive with regard to the decision-making process described in the vignette. In our case, as in Ghekiere et al. (2022) the respondents are students of a real estate school, with a theoretical and practical knowledge in the field. The recent study by Petzold & Wolbring (2019) compares responses from a survey and a field experiment on the ethnic discrimination education in Germany. They show that while the frequencies of self-reported intentions and actual behaviour differ, the treatments show similar relative effects, suggesting that the determinants of behaviour might be inferred from behavioural intentions measured with survey experiments.

3.2. Data collection

French rental housing market

According to the French National Statistics Institute (INSEE, 2020- Housing survey), 40.3% of French people rented their main residence in 2024, of which 43% from a public landlord (for social housing) and 57% from a private landlord.

In 2021, the private rental property market in France includes 5,000,000 rental properties, of which almost 30% will be occupied by students (Statista, 2021). 70% of rental properties are apartments and 44% have only one or two rooms (Ministère de la transition écologique, *Chiffre clé du logement*, 2022).

For real estate professionals, in 2021, there will be almost 30,000 estate agencies employing 82,500 people. Between 2019 and 2021, the number of estate agencies in France will have grown by an average of 11.3% (according to a *Le Parisien* survey based on data from the *Caisse nationale des Urssaf*).

In France, the real estate market is divided into independent agencies, affiliated agencies and authorised agents. Independent agencies, which are not part of a network, are still in the majority, accounting for around three-quarters of all agencies. One in four is a member of a leading federation of real estate professionals in France and Europe (FNAIM). It should be noted that more than two-thirds of these companies have no employees; they are small structures managed by the sole proprietor. At the same time, franchise networks (i.e., affiliated agencies), which represent a quarter of the real estate sector, account for almost 40% of market turnover in France in 2021 (according to a study by the *Observatoire des franchises*).

Respondent selection

The survey was conducted from December 2023 to June 2024 among 723 apprenticeship[10] students enrolled in either a Bachelor's degree in Real Estate Business Management or a Master's degree in Property Management[11] at a French professional real estate school (see descriptive statistics in Table 2). Before us, Ghekiere et al. (2022, 2024) similarly conducted vignette-based survey experiments in which pre-graduate real estate students were asked to act as real estate agents.

The use of apprentices is particularly relevant to our study, as our respondents had at least seven months of work experience in the property sector at the time of the experiment. In France, the apprenticeship system combines academic teaching in a school or training organisation with practical learning as an employee in a company. This system allows students to acquire theoretical skills while being exposed to the realities of the workplace.

Furthermore, the school has several campuses in several French cities (Paris, Lyon, Bordeaux, Nantes,

10 96% of the school's students were enrolled in an apprenticeship course, either in real estate firms (real estate agencies, co-ownership trustees, and property management).

11 The school had approximately 1,335 students at the time of the survey. The sample of 723 respondents used in this study corresponds to the students who were on campus at the time of the survey (the others were abroad for a year, on work placements or in companies). Of the students interviewed, only two did not complete the survey in full.

Marseille, Montpellier and Lille), which means that our respondents lived as students and experienced as professionals a diverse sample of the French housing market.

The survey experiment took approximately 20 minutes to complete. It was conducted during an in-person class session via an online form created using LimeSurvey©, which was made accessible to students through a short URL designed to ensure anonymity. For students without laptops at the time (7% of respondents), paper versions were distributed simultaneously. Respondents were monitored by colleagues to ensure that. The sessions were supervised to ensure that all respondents completed the questionnaire under the same conditions.

Because the exercise was presented to students as a professional simulation, we decided not to include any socio-demographic questions in the form completed by the respondents, except for a code formed by their initials. Using this code, school administrators then provided anonymized information on the socio-demographic and academic characteristics of the respondents. The match rate between the data collected in our experiment and the respondents' administrative data is approximately 97%.

Our final database therefore includes 700 respondents who completed our survey experiment's task and for whom we have their socio-demographic information (age, gender, country of birth and geographical location), their academic information (campus attended, year of study, participation in deontology training, and participation in discrimination-related seminars).

Deontology training

Using real estate students l as respondents allowed us to test our working hypothesis [H7 *training effect*] , and to examine the effect of receiving training on deontology or on discrimination.

The deontology training was introduced in the school's curriculum in 2020 in application of the ALUR (Access to Housing and Urban Renewal) Law of 2014. The law aimed to regulate property markets more effectively and promote access to housing for households. It established a legal obligation to include ethical training in the professional practice of real estate agents.

As a result, deontology training — taught by professionals or legal experts — is now compulsory for real estate professionals and professional associations, and has also been integrated into the curriculum of business schools specialising in real estate.

At the school where our experiment took place, a deontology module was introduced in 2020. Since then, around 660 students have taken the course. This compulsory module, which lasts 20 hours in the Bachelor's programme and 10 hours in the Master's programme, deals with various aspects of ethics in professional practice in the real estate sector. It covers the fight against fraud, tax laundering and the financing of terrorism, as well as training in professional ethics, transparency and confidentiality for real estate professionals, and the concept of Corporate Social Responsibility (CSR). The anti-discrimination section aims to explain the different types of discrimination (origin, gender, disability, etc.), the legal definition of the concept of discrimination in order to identify all the practices that can be considered discriminatory, and a reminder of the law and the civil and criminal penalties available in the event of proven discrimination.

In addition, a series of two half-day conferences were offered to students in the 2023-2024 academic year to raise awareness of discrimination issues in the housing market. These conferences were mainly attended by first and third year students (see Table A2 in the Appendix). The first conference consisted of a lecture by a professor of economics specialising in correspondence studies, who presented the methodology and main findings of studies carried out in France and abroad in the real estate sector. The second conference was a round table discussion between a representative of the *Défenseur des Droits* (right defenders), the president of the main French professional real estate association (FNAIM) and a representative of the departmental anti-discrimination centre (MDLD 13). The aim of the round table was to raise awareness among students about discrimination.

As students were not randomly assigned to the ethics course or the conference series, it is not possible to establish a causal effect using our data. However, this information is used as a control for respondent characteristics in the regressions presented in this paper.

Table 1. Descriptive statistics of respondent characteristics

	Respondents		All alumni		z-test
	N	%	N	%	
Gender					
Females	365	52%	672	50,3%	NS
Males	335	48%	663	49,7%	
Age					
Under 20 years old	159	23%	268	20,1%	*
[20–22 [years old	311	44%	512	38,4%	***
[22–24 [years old	146	21%	344	25,8%	***
24 years old and more	84	12%	211	15,8%	***
Origin					
Born in France	606	87%	1,186	88,8%	**
Born abroad	41	6%	90	6,7%	NS
Prefer not to answer	53	8%	59	4,4%	***
Year of study					
Bachelor degree	607	87%	1,113	83,4%	***
Year 1	102	15%	275	20,6%	***
Year 2	171	24%	273	20,4%	***
Year 3	334	48%	565	42,3%	***
Master degree	93	13%	222	16,6%	***
Year 4	52	7%	120	9,0%	NS
Year 5	41	6%	102	7,6%	*
Campus location (by French region)					
Île-de-France (Paris)	283	40%	695	52,1%	***
Pays-de-Loire (Nantes)	129	18%	187	14,0%	***
PACA (Marseille)	131	19%	172	12,9%	***
AURA (Lyon)	70	10%	103	7,7%	**
Occitanie (Montpellier)	19	3%	37	2,8%	NS
Hauts-de-France (Lille)	22	3%	28	2,1%	**
Nouvelle-Aquitaine (Bordeaux)	46	7%	113	8,5%	*
More than two years of apprenticeship	130	19%	262	19,6%	NS
Deontology training					
Mandatory Deontology course	195	28%	320	24%	**
Awareness of discrimination conference	41	6%	75	5,6%	NS
Survey year					
2023	287	41%			
2024	413	59%			
Matching with admin data					
Matched	700	97%			
Not matched + incomplete answers	23	3%			
All	723	100%	1,335	100%	

*** significant at 1%, ** at 5%, * at 10%, NS: not significant.

The administrative data provided by school administrators contain information on whether students attended the newly introduced ethics course and whether they attended the conference series on discrimination. Appendix Table A2 shows that just under 10% of the school's students attended the conference series, while 82% attended the ethics course. Among the students who participated in the experiment, these figures were 15% for the conference series and 90% for the "deontology in real estate" course.

3.3. Design

Task

The respondents were asked to evaluate, as rental agents, three fictitious tenants who applied to a rental agency in a small French town to rent an apartment. This task was presented to the students as part of their professional training in their training in real estate management, with the aim of comparing the performance of students in different schools (see Appendix 2 for the full survey) in their ability to complete the task correctly.

Participants in the experiment were provided information about 1) the apartment (location, renovation, size, number of rooms, floor, amenities, such as basement, concierge, parking and lift) 2) the landlord's preferences (price range and discriminatory preferences against some target groups). In all cases, the landlord stated that they would not rent to someone who was too young, who had pets, or who did not have a stable job. Respondents were also informed of the average rental price ranges in the city.

Respondents were then presented with the profiles of three male applicants who differed in terms of their origin, age, income and other characteristics such as the type of guarantor or preference for a ground floor flat. Two of the applicants, both in their 40s, were married, childless and had two incomes. The younger applicant, aged under 25, was described as a single civil servant. In this paper, we focus on the differences between middle-aged applicants.

Respondents were asked to give each applicant two scores (ranging from 1 to 4): their assessment of the landlord's satisfaction with the applicant (variable "landlord satisfaction") and their intention, as rental agents, to contact the tenant for a first visit (variable "visit intention").

In correspondence studies, callback (i.e., "visit intention") is the outcome most used to identify discrimination (see Quillian et al., 2017, for a meta-analysis). Using a vignette experiment allows us to open the black box of rental agents' behaviours, and disentangle their intentions towards minority applicants from their perception of their clients' wishes. If we find that the gap between the scores of Black and White tenants is smaller for "visit intention" than for "landlord satisfaction", it means that rental agents minimise the impact of their clients' discriminatory preferences. This would be consistent with the legislation introduced in France, where rental agents are required to take deontology courses as part of their curriculum and continuing professional training (see below, section 3.2.), but it would contradict recent studies showing that estate agents pass on their clients' discriminatory preferences (see above). If we find that the gap is higher, this means that, in line with the literature, rental agents amplify client-based discrimination.

Factorial variations

As Atzmüller & Steiner (2010) point out, two strategies can be used when conducting a multiple-version vignette study: the between-subjects approach and the within-subjects approach. In the former, each participant is presented with most or all of the versions of the vignette being tested, whereas in the latter, each participant is presented with only one version. The between-subjects approach allows individual fixed effects to be controlled for in the econometric analysis, but may lead participants to identify the dimensions being tested, which could lead to biases such as social desirability or anchoring effects.

In contrast, the within-subjects approach, which we used in this study, has the opposite strengths and weaknesses: while individual fixed effects cannot be controlled for, the risk of participant detection is lower. As we use the relative ratings given to each applicant, we control for part of the individual

dimension in our analysis.

The following factorial variations are included (see Table 2).

- [SOCIAL STATUS] Middle-aged couples either have stable and high-pay jobs (IT specialist and translator earning about €3,400/month) [social status = high] or temporary and low-pay jobs (ambulance driver and cashier earning about €1,800/month) [social status = low]. Note that both income levels are more than enough to afford[12] to rent the flat presented to respondents.
- [ETHNIC POOL COMPETITION] The three applicants might be all Black [competition = BB], all White [competition = WW], or mixed, with one middle-aged Black applicant and two White applicants (one middle-aged, one younger) [competition = WB].
- [ORIGIN - SKIN COLOUR] A photograph[13] might accompany all three applications [skin colour = visible], or none might be provided [skin colour = not visible].
- [ORIGIN - NAME] The Black couple's names can be either West-African sounding (for example, Mohamed Diop and Aïssata Sissoko) [name = Foreign] or French sounding (for example, Philippe Rousseau and Clarisse Legendre) (name = French). The White couple's name is always French-sounding (for example, Éric Pagant and Clémence Bernard)[14].
- [FLAT QUALITY] The flat is either recently refurbished and in a sought-after neighbourhood [flat quality = high] or in need of some work in a difficult part of the town [flat quality = low].
- [LANDLORD PREFERENCES] The landlord might express one of the following preferences: not wanting to rent to ethnic minorities [landlord = discrimination], being neutral [landlord = neutral], or prioritizing applicants from his own West-African Senegalese community [landlord = homogamy].

Overall, our vignettes aim to test 2 levels of income, 6 levels of origin signal, 3 types of landlord, 2 types of property, 3 configurations of competitor pool, i.e. 216 possible combinations. Given the number of students that were available for the survey, it was not possible to run all of these scenarios, so we constructed several subsamples.

The main sample (**Panel A**) is based on 892 applicants scored by 446 students. It contains 16 profiles crossing 2 income levels, 2 origin signals, 2 owner preferences and 2 property qualities. White applicants were always in competition with 1 Black and 1 White applicant. Black applicants were always in competition with 2 White applicants. The origin signal was revealed by a triple signal emitted by the surname, first name and photograph.

The second sample (**Panel B**) contains 1,114 applicants scored by 557 students. Its purpose is to test the impact of the pool of competitors on the processing of applications. Of these applications, 892 are from panel A to which we have added 76 cases where only White applicants were presented to respondents and 146 cases where only Black applicants were presented, varying the income level and the quality of the property in each case. Note that in the case where only White applicants were presented, we only tested neutral landlords.

The third sample (**Panel C**) contains 302 applications rated by 151 students. It is designed to test the landlords' neutrality, discrimination and homogamy. It is based on a subsample of 198 applicants

12We made sure that the rents proposed in the study were below the unofficial 33% rule that is prevalent in the French private rental housing market (you can only rent properties for which the rent is below 33% of your household's monthly income) for both the high-status and the low-status applicants.

13Photographs (see Appendix 2.2.) were generated using the website https://this-person-does-not-exist.com/ (at the time of the study, image generation using other AIs were not available or not qualitative enough to be used).

14The surnames of the White candidates (Cassin, Rousseau, Legendre, and Pagant) were chosen so that respondents would not associate them with a foreign, regional or religious origin. Kévin, Éric and Philippe are first names that have little to do with religion. Neither are Clarisse and Clémence. For minority candidates, Goudiaby, Diop, Sissoko and Ndiaye are very common names in Senegal. According to the French census, Senegal is tied with Côte d'Ivoire as the sub-Saharan African country with the highest number of immigrants living in France (Rouhban, 2024). The first names Youssef, Mohamed, Souleymane, Aïssata and Awa are all strongly associated with the Muslim religion.

from Panel A, to which 104 new applications are added where a landlord wishes to give preference to applicants from his own community. In this panel, White applicants always have a high social status and Black applicants a lower social status, and all the properties are of low quality in need of renovation and in a difficult area). The pool of applicants has the same structure as in Panel A.

Finally, the last sample of 394 applications (**Panel D**) assessed by 197 students is designed to test the nature of the origin signal. It includes 170 applicants from Panel A, plus 106 additional applications from applicants with a foreign-sounding name and no photo, and 118 additional applications from Black applicants (with photos) and a French-sounding name. In this panel, the White applicants all have a high social status and the Black applicants have a lower social status. The landlord also has discriminatory preferences and the pool of applicants has the same structure as in Panel A.

3.4. Econometric strategy

To identify the effect of the factors introduced in our vignettes, we estimate the following model:

$$Y_{ij} = \beta_0 + \gamma_0 Black_j + \beta_1 Z_j + \gamma Z_j \times Black_j + \beta_2 X_{ij} + \mu_{ij} \quad (1)$$

Where:

- Y_{ij} represents the relative score assigned to applicant j by respondent i, who is evaluating a group of applicants. To calculate this relative score, we take the difference between the score assigned to applicant j and the average score assigned to all three applicants. This approach eliminates the bias of an individual respondent's scoring habits.
- $Black_j$ is a binary variable equal to 1 if the applicant is Black. This information can be conveyed either through a photograph or by a name with a Sub-Saharan origin, depending on the vignette version.
- Z_j is a vector of other vignette variations. It includes binary variables that inform us about the property owner's preferences (discriminatory, preference for ethnic homogamy, or neutral), the applicant's income (high vs. moderate), and the ethnicity of the other applicants in competition with the applicant being scored.
- X_{ij} includes the sociodemographic and academic characteristics of the respondent (age, gender, year of study, campus, birth country).

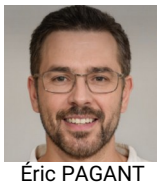
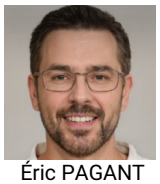
All the results are set out in the tables in Appendix A3. Tables A3.1 to A3.4 use Panels A, B, C and D respectively. In each table, models (1) and (2) refer to the response to the variable 'landlord satisfaction' and models (3) and (4) refer to the variable 'visit intention'. In models (1) and (3), only the signals conveyed in the vignettes are used as covariates. In models (2) and (4) the other control variables are introduced (i) respondent characteristics (gender, nationality, age, training campus, having done at least two years of apprenticeship, having taken part in sessions on raising awareness of discrimination and having taken a deontology course) and (ii) applicant characteristics (tenant benefiting from a public housing deposit scheme), tenant asking not to be on the first floor.

In all the estimations, we use a linear probability model based on weighted data to balance the different scenarios. Standard errors are clustered on each respondent.

Table 2. Factorial variations of flats and applicants

Applicants

ORIGIN signal: 3 variations

	White applicant	**Black applicant**
Skin colour and name (N : 316)	 Éric PAGANT married to Clémence BERNARD	 Mohamed DIOP married to Aissata SISSOKO
Name only (N : 106)	< No Photograph > Eric PAGANT married to Clémence Bernard	< No Photograph > Mohamed DIOP married to Aissata Sissoko
Skin colour only (N : 118)	 Éric PAGANT married to Clémence BERNARD	 Philippe ROUSSEAU married to Clarisse LEGENDRE

SOCIAL POSITION: 2 variations

High (N : 723) Full-time permanent IT specialist and self-employed translator. Net household income: €3,398/month	**Low** (N : 723) Temporary ambulance driver and cashier on a part-time short-term contract. Net household income: €1,797/month

FLAT QUALITY: 2 variations

High (N : 800) Renovated flat in a highly sought-after area Price range: €23/m2	**Low** (N : 642) To refresh in a difficult area Price range: €11/m2

Landlord preferences on Origin: 3 variations

Neutral (N: 528)	**Discrimination** (N: 810)	**Homogamy** (N: 104)
The landlord states that he has had bad experiences with young tenants, tenants whose professional situation was not stable (short-term contracts, temporary workers, students, etc.). He no longer wishes to rent to this type of person.	The landlord states that he has had bad experiences with young tenants, **tenants from ethnic minorities** or those whose professional situation was not stable (short-term contracts, temporary workers, students, etc.). He no longer wishes to rent to this type of person.	The landlord, M. DIALLO, **wants to rent primarily to people in the Malian community,** because he trusts the members of his own community and wants to support them. He also states that he has had bad experiences with young tenants and tenants whose professional situation was not stable (short-term contracts, temporary workers, students, etc.). He no longer wants to rent to this type of person.

COMPETITION effects: 3 variations

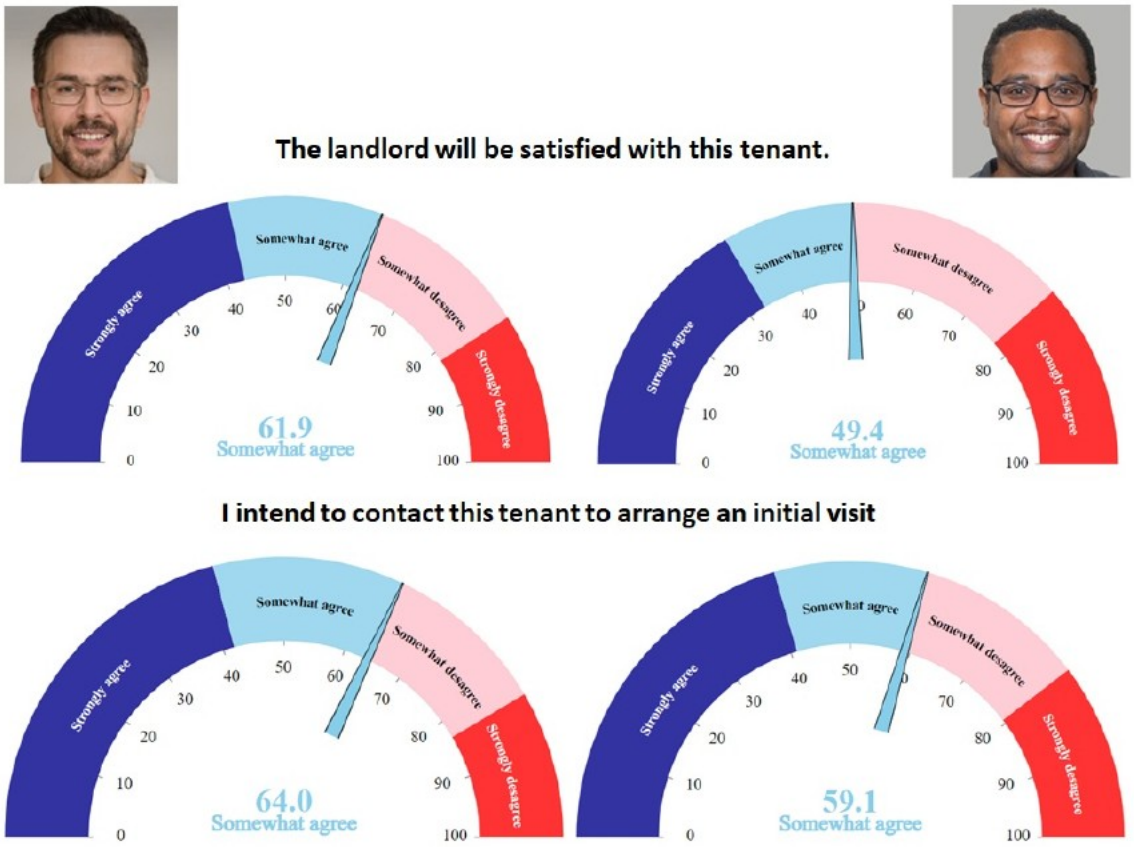
Only Black competitors (N : 146)	**Mixed** (N : 637)	**Only White competitors** (N : 669)
All 3 applicants are Black	2 Black applicants, 1 White applicant	All 3 applicants are White

4. Results and discussion

Figure 1 and Table 3 show, for the main Panel (Panel A), the difference in the raw scores given by respondents for Black and White applicants for the two outcomes of the experiment: perception of landlord satisfaction and intention to arrange an initial visit with the applicant.

Overall, Black applicants scored significantly lower than White applicants, with an average score of 2.59 (vs. 2.86) for perception of landlord satisfaction and 2.79 (vs. 2.89) for intention to visit. As Figure 1 shows, the gap is driven by weaker 'strong' support for Black tenants.

Figure 1. Distribution of responses



Data weighted to balance the different scenarios. Panel A (N: 894 applicants): All vignettes for which symmetry is available between all profiles for black/white and middle/high income applicants. This analysis does not include cases where the original signal was changed to black applicants with an intermediate income and cases where the applicants' competitors did not have the same composition (only black applicants and only white applicants).

In the remainder of the article, we present our results calculated from the relative scores obtained by White and Black applicants, rather than the raw scores (see Table 3 for a comparison of general results between raw and relative scores). Relative scores are calculated as the deviation from the average score awarded to the 3 applicants from a given range of 3 applicants. The aim is to partially control for the idiosyncratic nature of the scores awarded across each range of applicants.

We'll successively present our findings on the causal impact of (1) origin and social status, (2) landlord preferences, (3) skin colour (4) competition effects on discrimination in the rental housing market and (5) the limited role of housing quality and professional training.

4.1. Social status has more impact than origin

First, let's focus on the cross-effects of origin and social status on the scores of the Black and White applicants. The results are presented in Table 3, which shows their absolute and relative scores. Figure 2 shows the associated marginal effects, all things being equal (see Models A and B in Appendix 3 for detailed results).

Relative scores show that for both, the perception of the landlord's satisfaction and the visit intention, Black applicants' scores are 0.27 points lower than White applicants' scores (i.e. about 10% lower on average) (note that this is not the case for the absolute scores).

Table 3. Applicants' absolute and relative scores with alternative incomes and origins

Social status	Perception of the landlord's satisfaction (on a 1 to 4 scale)			Visit intention (on a 1 to 4 scale)		
	White	Black	Gap	White	Black	Gap
Absolute scores						
All	2.862	2.594	-0.267***	2.887	2.794	-0.094^{NS}
High income and secure job	3.697	3.289	-0.408***	3.646	3.604	-0.042 ^{NS}
Lower income and temporary job	2.026	1.900	-0.127***	2.132	1.98	-0.153*
Relative scores average deviation to the mean						
All	0.376	0.108	-0.267***	0.287	0.014	-0.273***
High income and secure job	1.169	0.848	-0.318***	1.146	0.695	-0.451***
Lower income and temporary job	-0.414	-0.631	-0.216***	-0.568	-0.669	-0.102 ^{NS}

*Data weighted to balance the different scenarios. *** significant at 1%, ** significant at 5%, * significant at 5%, NS not significant, Panel A (N = 894 applicants): All vignettes for which symmetry is available between all profiles for black/white and middle/high income applicants. This analysis does not include cases where the signal of origin was changed for black applicants and cases where the applicants' competitors did not have the same composition (only black applicants and only white applicants).*

All things being equal, Figure 2 shows both a "Black penalty" and a "Poor penalty" (see the regression's full results in Table A2.1. in Appendix A2).

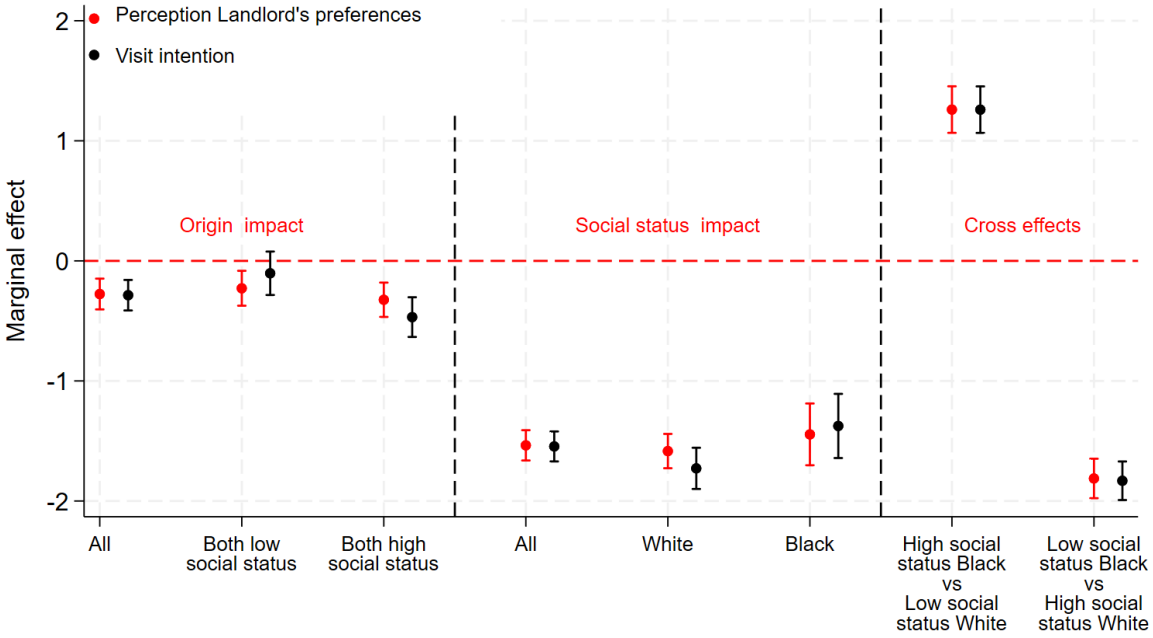
In line with the literature, we find that Black applicants receive significantly lower scores than White applicants. The "Black penalty" is 0.276 points for the perception of the landlord's satisfaction and 0.286 for visit intentions.

Also, echoing Bonnet & Pollard (2021), applicants with a lower social status are given significantly lower scores than applicants with a high social status. The "Poor penalty" is very high: -1.53 points (resp. -1.55 points) for the perception of the landlord's satisfaction (resp. visit intentions), and as intense among White applicants (-1.72 points) than among Black ones (-1.37 points).

Further, when interacting origin and income signals, we find that the "Black penalty" is higher among high social status applicants (high incomes and secure jobs) (-0.323 and -0.468 points score difference) than among low social status ones (lower incomes and temporary jobs) (-0.228 and -0.103 points score difference). By contrast, among lower status applicants, the "Black penalty" is much reduced for the perception of landlord satisfaction and not significant for visit intentions. This result invalidates hypothesis [H2 *social status relevance*] and contradicts previous correspondence studies who show that signalling a high socioeconomic status lowers discrimination. An interpretation of this result could be a possible cognitive dissonance in respondents who are prejudiced against Blacks: when compared to high-status Whites, high-status Blacks, who are outside their assigned "class", are perceived less favourably than low-status Blacks (who are "in-class") compared to low-status Whites.

Second, we find that the “Black penalty” only slightly mitigates the “Poor penalty”. Compared to low social status White applicants, high social status Black applicants receive a score that is significantly higher (by 1.25 points); this gap is lower than among White applicants (1.72 points). But compared to high social status White applicants, low social status Black applicants receive a score that is significantly lower (by -1.83 points); this gap is higher than among either Black applicants (-1.37 points). These results suggest that respondents weigh socioeconomic status more heavily than ethnicity when evaluating rental applications.

Figure 2. Marginal effects of social status and origin factors on the score gap of Black applicants compared to White applicants



Reading: All things being equal, the relative score given by respondents to black versus white applicants is 0.276 points for perception of landlord satisfaction and 0.286 points for intention to visit.
Impact of origin: compares the relative scores of white and black applicants Impact of social status: compares high income and secure employment with middle income and low status applicants Cross effect: compares the cumulative effect of origin and income/status covariates: (i) characteristics of the respondents (gender, nationality, age, place of education, having completed at least two years of training, having attended awareness-raising sessions on discrimination and having attended a course on deontology) and (ii) characteristics of the applicants : tenants benefiting from a public housing deposit scheme (garantie VISALE) and asking not to be on the first floor. The data are weighted to balance the different scenarios. Standard errors are clustered by respondent.
Panel A (N = 894 applicants). All vignettes for which there is symmetry between all profiles for black/white and middle/high income applicants. This analysis does not include cases where the original signal was changed to black middle income applicants and cases where the applicants' competitors did not have the same composition (only black applicants and only white applicants).

4.2. Strong impact of both negative and positive landlord preferences.

In order to disentangle the source of the discriminatory behaviour of real estate agents between an effect due to client-based discrimination and an effect due to agent taste-based discrimination, we compare the ratings in the case where the landlord states that he does not rent to minorities and in the case where he gives no recommendation.

Figure 3 and Table 4, based on Panel A, present our results. Echoing Choi et al. (2015) and Flage (2018), we find strong evidence that discrimination is mainly due to client-based discrimination, but not to discrimination based on the real estate professionals' own bias against the Black applicants. When landlords express a negative preference for ethnic minorities, there is a significant difference between the scores of Black and White applicants (-0.480). The effect of client-based discrimination appears to be stronger for high social status applicants than for those with a low social status, but this difference is not statistically significant. These results confirm the hypothesis [H3a *client-based ethnic discrimination*].

A novel result of this study is that, when landlords do not express a negative preference towards ethnic minorities, the gap between black and white applicants is null. This means that, in terms of public policy, reducing discrimination means changing landlords' preferences and helping real estate agents resist their pressure, for example by using a strict *first-come, first-served* policy as in Seattle and Portland (see Bunel & Tovar, 2024, for a normative assessment of these policies).

Table 4. Applicants' absolute and relative scores with alternative landlord preferences

Landlord preferences	Perception of the landlord's satisfaction (on a 1 to 4 scale)			Visit intention (on a 1 to 4 scale)		
	White	Black	Gap	White	Black	Gap
Absolute scores						
All	2.867	2.594	-0.273***	2.8872	2.794	-0.094^{NS}
Discriminatory preferences	2.902	2.403	-0.499***	.9307	2.769	-0.160*
Neutral preferences	2.831	2.783	-0.048^{NS}	2.844	2.818	-0.027^{NS}
Relative scores average deviation to the mean						
All	0.379	0.106	-0.273***	0.287	0.014	-0.273***
Discriminatory preferences	0.441	-0.057	-0.499***	-0.297	-0.202	-0.499***
Neutral preferences	0.391	0.269	-0.048 ^{NS}	0.277	0.229	-0.048^{NS}

*Data weighted to balance the different scenarios. *** significant at 1%, ** significant at 5%, * significant at 5%, NS not significant, Panel A (N = 894 applicants): All vignettes for which symmetry is available between all profiles for black/white and middle/high income applicants. This analysis does not include cases where the signal of origin was changed for black applicants and cases where the applicants' competitors did not have the same composition (only black applicants and only white applicants).*

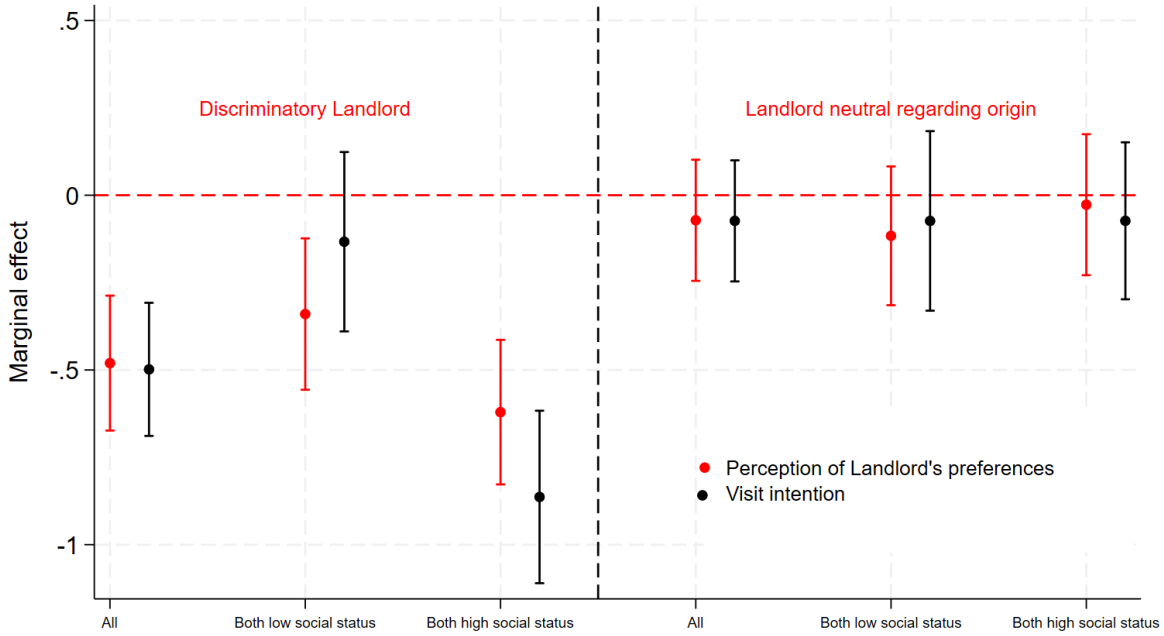
To further explore the impact of landlord preferences, we introduced a specific scenario to test a third factorial variation in landlord preferences: an in-group preference.

Due to constraints in the number of available respondents, this variation was only introduced in the scenarios where we found the strongest discrimination, i.e. where low-status Black applicants are in competition with high-status White applicants (Panel C; full results are presented in Appendix A2 Table A2.1). Figure 4 and Table 5 compare the social status impact for Black and for White applicants according to the landlord's preferences. For Black applicants, 3 situations are explored, where the landlord expresses either neutral, or negative or positive preferences for minorities. For White applicants, only two situations are available: the situation when the landlord expresses either neutral or negative preferences for minorities.

Figure 3 shows that low social status has a stronger impact on Black against White applicants

(around -1.8 against -1.3 for both the perception of the landlord's satisfaction and for visit intentions). This difference is statistically significant. However, this gap disappears when the landlord does not express any recommendation regarding minorities.

Figure 3. Marginal effect of landlord preferences, income and origin factors on the score gap between Black and White applicants



Reading: All things being equal, the relative score given by respondents to black versus white applicants when the landlord expresses a negative preference towards ethnic minorities is -0.480 points for perception of landlord satisfaction and -0.498 points for intention to visit.
Covariates: first, those related to each respondent: gender, nationality, age, training location, having completed at least two years of training, having attended discrimination awareness sessions and having attended a deontology course. Second, those related to the tenant file: tenants benefiting from a public housing deposit scheme (garantie VISALE) and asking not to be on the first floor. The data are weighted to balance the different scenarios and the standard errors are clustered on each respondent.
Panel A (N = 892 applicants). All vignettes for which symmetry is available between all profiles for Black/White and middle/high income applicants. This analysis does not include cases where the original signal was changed to Black applicants with an intermediate income and cases where the applicants' competitors did not have the same composition (only black applicants and only white applicants).

More importantly, we find that when the client expresses negative preferences for minorities this halves the negative effect associated with reporting low social status for white applicants, but they have no effect on the poor penalty for Black applicants. Indeed, for Black applicants, the "poor penalty" remains even when the landlord expresses a willingness to rent his flat to applicants from his own West African community, but it declines dramatically (from -1.91 to -0.72 for perception of the landlord's satisfaction and from -1.91 to -0.64 for visit intentions)[15].

Overall, these results partially support hypothesis [H3b *client-based in-group favouritism*]: agents are willing to accommodate client preferences, including favouring minority tenants when it aligns with the landlord's wishes.

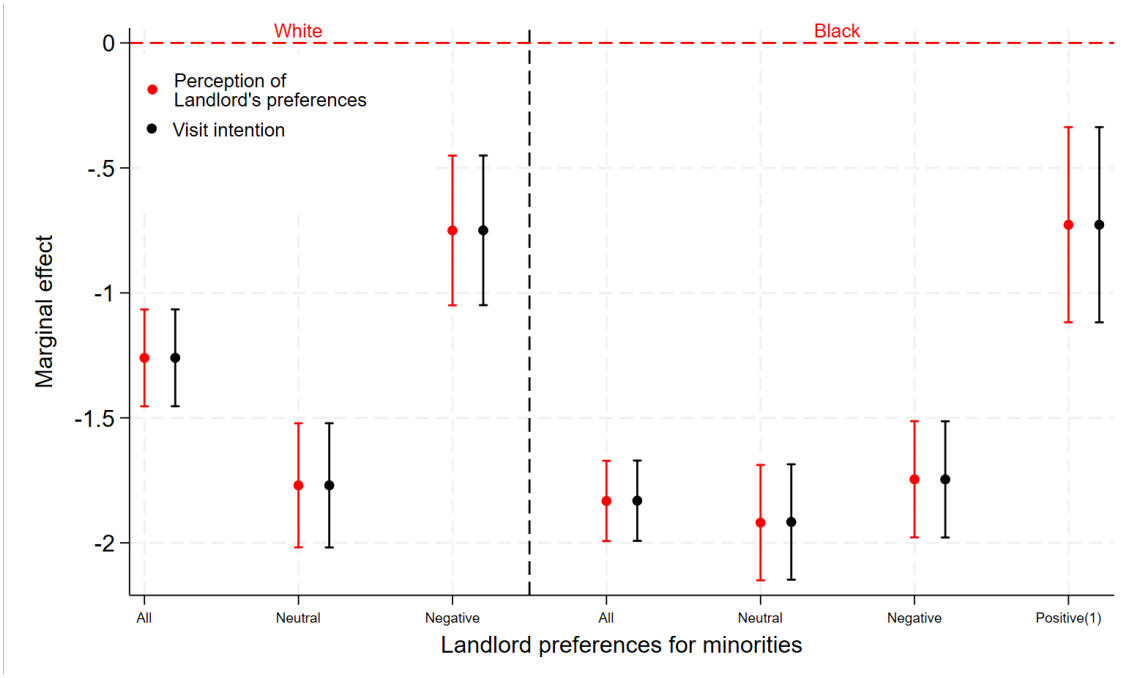
15This focus was possible thanks to a complementary subsample of 52 students, for whom the vignette indicated that the landlord had a preference for applicants from the West African community.

Table 5. Applicants' absolute and relative scores with neutral vs. in-group landlord preferences

Landlord preferences	Perception of the landlord's satisfaction (on a 1 to 4 scale)			Visit intention (on a 1 to 4 scale)		
	High social status White	Low social status Black	Gap	High social status White	Low social status Black	Gap
Absolute scores						
All	3.573	2.177	-1.395***	3.527	2.204	-1.324***
In-group preferences	3.346	2.596	-0.750***	3.481	2.577	-0.904***
Neutral preferences	3.646	1.979	-1.667***	3.417	1.979	-1.438***
Relative scores average deviation to the mean						
All	0.977	-0.418	-1.395***	0.929	-0.466	-1.395***
In-group preferences	0.756	0.006	-0.750***	0.667	-0.083	-0.750***
Neutral preferences	1.063	-0.604	-1.667***	1.104	-0.563	-1.667***

*Data weighted to balance the different scenarios. *** significant at 1%, ** significant at 5%, * significant at 5%, NS not significant, Panel C (N = 302 applicants). All vignettes for which symmetry is available between all profiles for Black/White and middle/high income applicants. This analysis does not include cases where the signal of origin was changed for black applicants.*

Figure 4. Impact of middle social status conditional on the origin and the landlord's preferences on ethnic minorities



Reading: The negative impact of middle status on a white applicant is 1.76 points when the landlord is neutral towards minorities, compared to 0.75 point when he discriminates against minorities.
Panel A and, Panel C for (1):
Covariates: first those related to respondent students: *gender, nationality, age, training location, having completed at least two years of training, having attended discrimination awareness sessions and having attended a deontology course*. Second, those related to the tenant file: tenant benefiting from a public housing deposit scheme (garantie *VISALE*) and asking not to be on the first floor. *Data is weighted to balance the different scenarios, and standard errors are clustered on each respondent.*

4.3. Skin colour is the issue, not names

Next, let's unpack the causal effect of skin colour and names, the alternative origin signals included in our scenarios. To do this, we use 152 observations from Panel A, where White applicants have a high social status, Black applicants have a low social status and the landlord has a negative attitude towards minorities. In this panel, the ethnic origin of the applicant is indicated by the surname, first name and a photograph. We add a subsample of 242 observations from Panel C with the same set of landlords and black and white applicants, but where the signal is suggested either by the first name and a surname only (no photograph) or by the photograph combined with a French first name and surname.

Table 4 exposes the absolute and relative scores of applicants according to the type of signal used to indicate ethnicity (Sub-Saharan foreign-sounding name and/or visible Black skin colour) and the gap scores of low-status Black applicants compared to high-status White applicants. Figure 4 presents the marginal effects, all things being equal (full results are presented in Appendix A2 Table A2.3).

Table 6. Applicants' absolute and relative scores regarding the origin signal

Skin colour	Perception of the landlord's satisfaction (on a 1 to 4 scale)			Visit intention (on a 1 to 4 scale)		
	High social status White	Low social status Black	Gap	High social status White	Low social status Black	Gap
Absolute scores						
All	3.459	2.151	-1.307***	3.369	2.166	-1.203***
Name and photo	3.645	2.021	-1.623***	3.618	1.968	-1.650***
Only photo (no-name)	3.542	1.847	-1.695***	3.339	1.814	-1.525***
Only name (no-photo)	3.189	2.585	-0.604***	3.151	2.717	-0.433*
Relative scores average deviation to the mean						
All	0.964	-0.335	-1.298***	1.03	-0.27	-1.300***
Name and photo	1.171	-0.426	-1.597***	1.202	-0.401	-1.602***
Only photo (no-name)	1.079	-0.616	-1.695***	1.243	-0.452	-1.695***
Only name (no-photo)	0.642	0.378	-0.604***	0.648	0.044	-0.603**

*Data weighted to balance the different scenarios. *** significant at 1%, ** significant at 5%, * significant at 5%, NS not significant, Panel D (N = 394 applicants). All vignettes for which symmetry is available between high income White applicants and middle income Black applicants.*

We find that skin colour is the main trigger of discrimination, much more so than a foreign-sounding name. Table 2 and Figure 2 show that the "Black penalty", is significantly lower when the Black applicant's origin signal is limited to a West African name and surname (no photograph) than when it is limited to his skin colour (French-sounding name). For the perception of the landlord's satisfaction the gaps are respectively -1.597 points vs -0.604 points compared to the White applicant) and for the intention to visit, the difference is -1.653 vs. -0.518.

To test the influence of the surname and first name of applicants represented by a photograph of a black man, two situations are compared: one where the surname and first name of the applicant indicate a sub-Saharan origin and the other where they indicate a French origin.

According to Figure 1, when the Black applicant's skin colour is visible, the ethnicity of applicant's name and surname have no impact on the "Black penalty": in the scenarios with a photograph, marginal effects are not statistically different whether the Black applicant has a French-sounding or a West-African-sounding name (the gap are respectively of -1.597 points vs -1.695 points compared to the White applicant).

Since the scores of a tenant with a foreign-sounding name and no visible phenotype (no photograph scenario) is lower than those of Black tenants (photograph scenario) with a French-sounding name, these validate hypothesis [H1 *phenotype penalty*], and show that taste discrimination is stronger than statistical discrimination.

These results align with what Polavieja et al. (2023) found in the labour market, but contradict the finding of Koopmans et al.(2019), where perceived cultural distance (as indicated by names) was the main driver of discrimination, over ethnic origin and phenotype, and are in line with the findings of Weichselbaumer & Schuster (2021) on the Austrian labour market.

Moreover, this result is striking because most correspondence studies rely on names to signal for origin and do not use photographs (see Section 2.1). Our result suggests that, by doing so, they may underestimate the discrimination of real-world Black applicants who routinely interact in person with real estate agents or present documents (such as ID or resumes) that include their photograph.

4.4. Competition effects: being Black among Whites is the worst

Finally, let's check whether the black penalty is mitigated by competition effects, i.e. whether the ethnicity of competitors affects black and white applicants differently. To do this, we add to sample A on a subsample Panel D of 111 respondents and 222 observations, who were presented with alternative applicant spreads with different numbers of Black and White applicants. Overall, Table 3 and Figure 1 are based on 1,114 observations.

The second situation is when we compare a single Black applicant competing against two Black applicants and a single White applicant competing against two White applicants (B-B vs. W-W). In this context, the 'Black penalties' (-.017 and +0.014 respectively) are no longer significant. This means that, if we compare the situation of a Black applicant competing against two White applicants with that of a Black applicant competing against two Black applicants, the penalty for competing against applicants from another ethnic group is significant and around -0.340 and -0.620 points. In contrast, the situation of a White applicant is not significantly affected by the ethnic mix of his competitors.

Figure 5 shows the marginal impact of alternative ethnic mixes within competitors on the score gap between black and white applicants (full results are presented in Appendix A2, Table A2.4).

The benchmark situation is when we compare a single Black applicant competing against two White applicants and a single White applicant competing against a Black and a White applicant (B-W vs. W-M). The result obtained is similar to that shown in Figure 1. The 'Black penalty' is -0.279 points lower for perceptions of landlord satisfaction and -0.278 points lower for visit intentions.

The second situation is when we compare a single Black applicant competing against two Black applicants and a single White applicant competing against two White applicants (B-B vs. W-W). In this context, the 'Black penalties' (-.017 and +0.014 respectively) are no longer significant.

Thus, if we compare the situation of a Black applicant competing against two White applicants with that of a Black applicant competing against two Black applicants, the penalty attributable to competing with applicants from another ethnic group is significant and approximately -0.340 and -0.620 points.

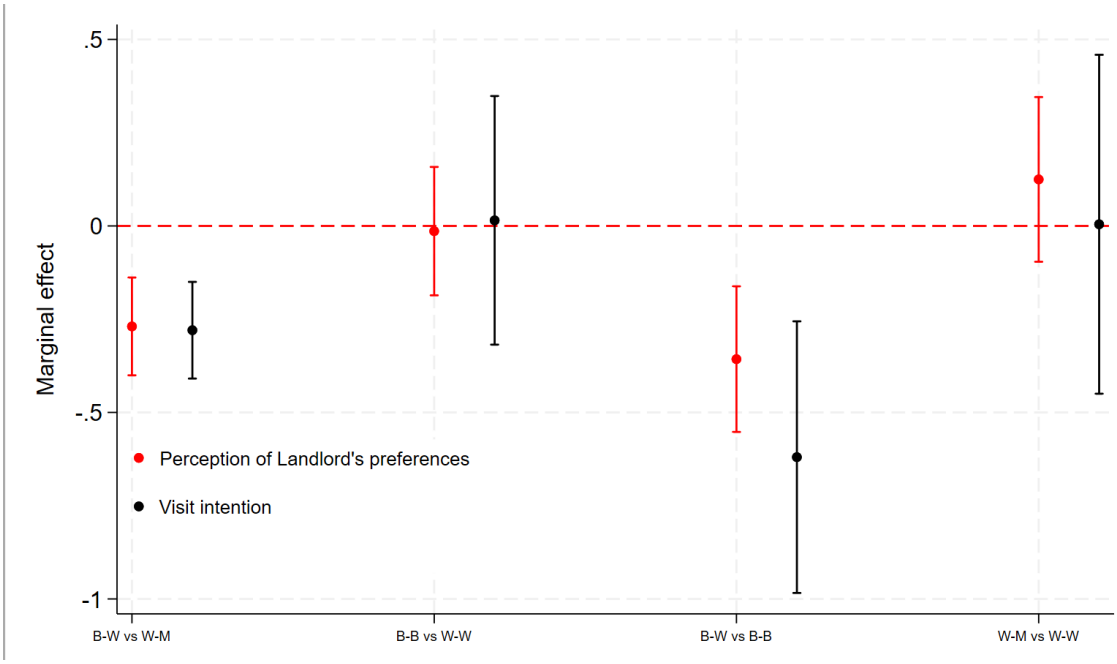
These results confirm the existence of a pool competition effect, as discussed by Phillips (2019). However, our findings show that this effect is not uniform across applicant groups: it negatively affects minority applicants, supporting the minority penalty hypothesis [H6a *minority penalty*], but has no significant impact on White applicants. As such, we find no support for the majority premium hypothesis [H6b *majority premium*].

Table 7. Applicants' absolute and relative scores depending on the ethnic mix of their competitors

Competition effects	Perception of the landlord's satisfaction (on a 1 to 4 scale)			Visit intention (on a 1 to 4 scale)		
	High social status White	Low social status Black	Gap	High social status White	Low social status Black	Gap
Absolute scores						
All	2.832	2.619	-0,267***	2.893	2.763	-0,130*
White competitors	2.776	2.594		2.906	2.794	
Black competitors		2.643			2.733	
Mixed competitors	2.861			2.887		
Relative scores average deviation to the mean						
All	0.284	0.131	-0,153**	.206	0.052	-0,154**
White competitors	0.099	0.108		.045	0.014	
Black competitors		0.153			0.089	
Mixed competitors	0.376			0.287		

*Data weighted to balance the different scenarios. *** significant at 1%, ** significant at 5%, * significant at 5%, NS not significant. Panel B (N = 1,114 applicants) All vignettes for which symmetry is available between all profiles for Black/White and middle/high income applicants. This analysis does not include cases where the signal of origin was changed for Black applicants. Data is weighted to balance the different scenarios, and standard errors are clustered on each respondent.*

Figure 6. Marginal effect of alternative ethnic mixes on the score gap between Black and White applicants



B-W: Black applicant vs. White competitors (mixed photo spread); B-B: Black applicant vs. Black competitors (Black photo spread); W-W: White applicant vs. White competitors (White photo spread); W-M: White applicant vs. Black and White competitors (mixed photo spread).

Reading: *Panel B (N = 1,114 applicants) All vignettes for which symmetry is available between all profiles for Black/White and middle/high income applicants. This analysis does not include cases where the signal of origin was changed for Black applicants.*

4.5. No quality nor training effects

Finally, we find no significant effects on several elements discussed in the above literature.

First, we find no evidence supporting hypotheses [H4 *quality effects*] and [H5 *gatekeeping*]. Housing quality does not have a significant causal effect on ethnic discrimination. As shown in Table A2.1 (Appendix A2), applicants are rated more favourably when the property is of high quality (recently renovated and located in a desirable area), compared to low-quality units (in need of renovation and located in a deprived neighbourhood). However, this positive effect of housing quality does not vary by applicants' ethnic origin or social status.

These results, based on an experimental design where housing quality was explicitly manipulated and separated from neighbourhood ethnic composition, suggest that discrimination levels remain stable regardless of property quality. This finding aligns with previous research (Bosch et al., 2010; Koppensteiner et al., 2022) showing no clear relationship between property value and discrimination.

Furthermore, in contrast to Ghekiere et al. (2024), our results indicate the absence of training effects on respondents' choices (see models A2 and B2 in Appendix A3): neither participation in a conference on discrimination nor completion of a real estate deontology course is associated with the ratings assigned to applicants in general, and to Black applicants in particular. This finding invalidates the hypothesis [H7 *training effect*] and warrants further investigation through an experiment in which the training treatment is explicitly manipulated in the study design[16].

Moreover, we observe no discrepancy between how respondents rate the variables "landlord satisfaction" and "visit intention." This can be interpreted in several ways. The first is that respondents' perception of the landlord's satisfaction is a key factor in their decision-making, as rental agents. If this is the case, then, the score for "visit intention" follows mechanically from the score given for "landlord perception". The second possible explanation highlights a methodological limitation of our survey experiment, pointing to an anchoring bias caused by the fact that both ratings were elicited at the same time. In any case, this finding calls for further experimental investigation to find out which interpretation is correct.

5. Conclusion

This study reveals five key insights into rental housing discrimination. First, social status significantly impacts evaluations, and the "poor effect" (lower-status applicants facing a harsher screening from real estate agents) is stronger than the "Black effect" (minority applicants receiving lower marks than White ones, all else being equal). Second, skin colour imposes a stronger penalty than ethnically marked names, with Black applicants suffering a 0.48-point score drop (on a 4-point scale) when photographs are included—double the penalty for foreign-sounding names alone. This result supports Polavieja et al.'s (2023) labour market findings and suggests that taste-based discrimination outweighs statistical discrimination. It also means that correspondence studies based on names alone may underestimate real-world racial bias. Third, discrimination by real estate agents in the rental housing market is primarily client-driven: when landlords did not express ethnic preferences, Black-White score gaps disappeared; when landlords did express in-group minority preferences, the scores of Black applicants were also significantly higher. Fourth, competitive effects hurt minorities asymmetrically: Black applicants faced harsher penalties amidst White competitors (-0.38 points), while White applicants were unaffected by minority competition—a "minority penalty" aligning with Phillips' (2019) pool effects theory. Fifth, information seems to have little effect on discrimination: participating in a discrimination awareness conference or completing a deontology course is not associated with less discrimination against Black applicants.

16The analysis conducted by Boe (2024) shows that the effect of a social norm does not systematically mitigate discriminatory behaviors.

From a methodological perspective, our study shows that survey experiments are a promising tool to complement correspondence studies, as they are able to investigate causal effects beyond demand-side factors: property characteristics, landlord preferences and their transmission by real estate agents, and pool competition effects.

Despite these advantages, survey experiments have several limitations. First, respondents are asked to imagine how they would act if they were placed in the situation described in the vignette. Even if studies such as Petzold and Wolbring (2019) show that survey and behavioural experiments align on the causal effects of the factors they manipulate, there is still room for the argument that survey experiments outcomes may not translate into real-world behaviours. To mitigate this problem, following Ghekiere et al. (2022), we conducted our study with respondents who were enrolled in a real estate school and had professional experience in real estate firms. Second, vignettes elicit outcomes within hypothetical scenarios that allow controlling for key parameters of the respondents' decisions, but are ill-equipped to account for some of the real-world factors that determine the discriminatory practices of landlords and agents, such as the credibility of legal risks associated with discrimination, and repeated exposure to landlords and applicants. Third, the size of the respondent pool limits the scope of any experimental study, and survey experiments are not an exception in this regard. In our case, we chose to restrict our factorial variations to a Black/White contrast among middle-aged married men, thus ignoring other target groups that could also have been considered, (such as women, single-parent households with children, Arab/Maghreb or Roma minorities, and older or younger applicants).

The policy implications of our study are twofold. First, our results show that discrimination is largely driven by landlord preferences. As a result, public policies should target landlord biases, and devise mechanisms that could protect rental agents against pressures from their client landlords. In this regard, one solution could be anonymised applicant pools and the enforcement of a "first-come, first-served" rules, as implemented in Seattle and Portland (see Bunel and Tovar, 2024, for a study on the acceptability of such a rule). Second, we found that the training interventions implemented in our respondents' school were not significantly associated with a reduction in the gap between Black and White applicants. This result is not causal in nature, as we did not manipulate the students' enrolment in the deontology course or attendance at the conference on discrimination; it nevertheless suggests room for improvement in training programmes, which should explicitly address the role of real estate agents as bias amplifiers and the need for them to resist discriminatory requests.

This leads to a call for further research. First, the situation of other target groups could be studied, such as single mothers who face high accessibility barriers in the rental housing market (*Défenseur des Droits*, 2017). Second, our results do not show a significant effect of housing quality on anti-black discrimination, which is contrary to the steering effects found in the literature. To better document this issue, future survey experiments should be designed to measure the matching of heterogeneous applicants and property units pairs. Third, we took advantage of the survey experiment method to test the discrepancy between rental agents' perceptions of landlord satisfaction and their actual intentions to organise a visit with applicants. Although we did not find any significant differences between these two outcomes, this calls for further investigation of this finding with studies specifically designed for this purpose. This brings us to the final suggested extension of this study: the conduct of field experiments to complement our study. Indeed, experimental designs incorporating real-world rental transactions could offer a more direct measure of discriminatory behaviour beyond hypothetical scenarios.

6. References

Acolin A., Bostic R., Painter G. (2016) A field study of rental market discrimination across origins in France, Journal of Urban Economics, 95, 49-63.

Adida, C., Laitin, D., & Valfort, M.-A. (2010). Identifying barriers to Muslim integration in France. Proceedings of the National Academy of Sciences of the United States of America, 107 (52), 22384–22390.

Agarwal, S., Choi, H.-S., He J., Sing T. F. (2019) Matching in Housing Markets: The Role of Ethnic Social Networks. The Review of Financial Studies, 32 (10): 3958–4004, https://doi.org/10.1093/rfs/hhz006

Ahmed, A. M., & Hammarstedt, M. (2008). Discrimination in the rental housing market: A field experiment on the Internet. Journal of Urban Economics, 64(2), 362–372. https://doi.org/10.1016/j.jue.2008.02.004

Andersson, L., Jakobsson, N., & Kotsadam, A. (2012). A Field Experiment of Discrimination in the Norwegian Housing Market: Gender, Class, and Ethnicity. Land Economics, 88(2), 233–240. https://doi.org/10.3368/le.88.2.233

Anne, D., Chareyron, S., L'Horty, Y., & Peyrière, R. (2024). Discriminations à l'embauche des Ultramarins: Un testing en outre-mer et dans l'Hexagone: Revue Économique, Vol. 75(3), 483–500. https://doi.org/10.3917/reco.753.0483

Arrow, K. (1973). Discrimination in the labor market, chapter The theory of discrimination. Advances in Economics and Econometrics.

Atzmüller, C., & Steiner, P. M. (2010). Experimental vignette studies in survey research. Methodology: European Journal of Research Methods for the Behavioral and Social Sciences, 6, 128–138.

Auspurg, K., Hinz, T., & Schmid, L. (2017). Contexts and conditions of ethnic discrimination: Evidence from a field experiment in a German housing market. Journal of Housing Economics, 35, 26–36. https://doi.org/10.1016/j.jhe.2017.01.003

Auspurg, K., Schneck, A., & Hinz, T. (2019). Closed doors everywhere? A meta-analysis of field experiments on ethnic discrimination in rental housing markets. Journal of Ethnic and Migration Studies, 45(1), 95–114. https://doi.org/10.1080/1369183X.2018.1489223

Ayres I., Banaji M., Jolls C. (2015) Race effects on eBay. The RAND Journal of Economics, 46(4): 891-917.

Baldini, M., & Federici, M. (2011). Ethnic discrimination in the Italian rental housing market. Journal of Housing Economics, 20(1), 1–14. https://doi.org/10.1016/j.jhe.2011.02.003

Bao, H. X. (2024). Is hiding my first name enough? Using behavioural interventions to mitigate racial and gender discrimination in the rental housing market. Urban Studies, 61(11), 2156–2175. https://doi.org/10.1177/00420980241231712

Becker, G. J. (1971). The Economics of Discrimination (2nd edition). University of Chicago Press.

Becker, G. J. (1957). The Economics of Discrimination (The University of Chicago Press).

Bellemare C., Goussé M., Lacroix G., Marchand S. (2023) Physical Disability and Labor Market Discrimination: Evidence from a Video Résumé Field Experiment. American Economic Journal: Applied Economics 15 (4): 452–76.

Bertrand, M., & Duflo, E. (2017). Field Experiments on Discrimination. In A. V. Banerjee & E. Duflo (Eds.), Handbook of Economic Field Experiments (Vol. 1, pp. 309–393). North-Holland. https://doi.org/10.1016/bs.hefe.2016.08.004

Bertrand, M., & Mullainathan, S. (2004). Are Emily and Greg More Employable Than Lakisha and Jamal? A Field Experiment on Labor Market Discrimination. American Economic Review, 94(4), 991–1013. https://doi.org/10.1257/0002828042002561

Bonnet, F., & Pollard, J. (2021). Tenant selection in the private rental sector of Paris and Geneva. Housing Studies, 36(9), 1427–1445. https://doi.org/10.1080/02673037.2020.1769565

Bosch, M., Carnero, M. A., & Farré, L. (2010a). Information and discrimination in the rental housing market: Evidence from a field experiment. Regional Science and Urban Economics, 40(1), 11–19. https://doi.org/10.1016/j.regsciurbeco.2009.11.001

Branigan, A. R., & Hall, M. (2023). Colorism in the Rental Housing Market: Field Experimental Evidence of Discrimination by Skin Color. Social Psychology Quarterly, 86(3), 275–297. https://doi.org/10.1177/01902725221129624

Bunel M., Gorohouna S., Petit P., Ris C., L'Horty Y. (2019), Ethnic discrimination in the Rental Housing Market: An experiment in New Calédonia,. International Regional Science Review, 42(1): 65-97.

Bunel, M., & Tovar, E. (2021). Profit, morality and discrimination. Applied Economics, 53(40), 4692–4712. https://doi.org/10.1080/00036846.2021.1907285

Bunel, M., & Tovar, E. (2024). Fairness of the first-come, first-served rule on the rental housing market: Insights from a hypothetical survey experiment. Journal of Housing Economics, 65, 102004. https://doi.org/10.1016/j.jhe.2024.102004

Carlsson, M., & Eriksson, S. (2014). Discrimination in the rental market for apartments. Journal of Housing Economics, 23, 41–54. https://doi.org/10.1016/j.jhe.2013.11.004

Carpusor, A. G., & Loges, W. E. (2006). Rental Discrimination and Ethnicity in Names. Journal of Applied Social Psychology, 36(4), 934–952. https://doi.org/10.1111/j.0021-9029.2006.00050.x

Chareyron, S., L'Horty, Y., Mbaye, S., & Petit, P. (2023). Reducing ethnic discrimination through formal warning: Evidence from two combined field experiments. Regional Science and Urban Economics, 98, 103850. https://doi.org/10.1016/j.regsciurbeco.2022.103850

Choi, S. J., Ondrich, J., & Yinger, J. (2005). Do rental agents discriminate against minority customers? Evidence from the 2000 Housing Discrimination Study. Journal of Housing Economics, 14(1), 1–26. https://doi.org/10.1016/j.jhe.2005.02.001

Christensen, P., & Timmins, C. (2022). Sorting or Steering: The Effects of Housing Discrimination on Neighborhood Choice. Journal of Political Economy. https://doi.org/10.1086/720140

Christensen, P., & Timmins, C. (2023). The Damages and Distortions from Discrimination in the Rental Housing Market. The Quarterly Journal of Economics, 138 (4), 2505–2557. https://doi.org/10.1093/qje/qjad029

Currarini S., Mengel F. (2016) Identity, homophily and in-group bias. European Economic Review, 90, 40-55.)

Daniel, W. (1968). Racial discrimination in England, Penguin Books, Middlesex.

Défenseur des Droits (2017). Les discriminations dans l'accès au logement. Enquête Sur l'accès Aux Droits (5). [link].

Deng, Y., Hu, M. R., & Lee, A. D. (2021). Melting pot or salad bowl: Cultural distance and housing investments. Real Estate Economics, 49(S1), 235–267. https://doi.org/10.1111/1540-6229.12311

Edelman, B., Luca, M., & Svirsky, D. (2017). Racial Discrimination in the Sharing Economy: Evidence from a Field Experiment. American Economic Journal: Applied Economics, 9(2), 1–22. https://doi.org/10.1257/app.20160213

Ewens, M., Tomlin, B., & Wang, L. C. (2014). Statistical discrimination or prejudice? A large sample field experiment. The Review of Economics and Statistics, 96(1), 119–134.

Finseraas, H., Johnsen, Å. A., Kotsadam, A., & Torsvik, G. (2016). Exposure to female colleagues breaks the glass ceiling—Evidence from a combined vignette and field experiment. European Economic Review, 90, 363–374. https://doi.org/10.1016/j.euroecorev.2015.11.010

Flage, A. (2018). Ethnic and gender discrimination in the rental housing market: Evidence from a meta-analysis of correspondence tests, 2006–2017. Journal of Housing Economics, 41, 251–273. https://doi.org/10.1016/j.jhe.2018.07.003

Fryer R. G., Levitt S. D. (2004) The Causes and Consequences of Distinctively Black Names. Quarterly Journal of Economics, 119(3):767-805.

Gaddis, S. (2017). How Black Are Lakisha and Jamal? Racial Perceptions from Names Used in Correspondence Audit Studies. Sociological Science, 4, 469–489. https://doi.org/10.15195/v4.a19

Gaddis, S. M., & Ghoshal, R. (2020). Searching for a Roommate: A Correspondence Audit Examining Racial/Ethnic and Immigrant Discrimination among Millennials. Socius, 6, 2378023120972287. https://doi.org/10.1177/2378023120972287

Ghekiere, A., d'Hondt, F., Derous, E., Schelfhout, S., & Verhaeghe, P.-P. (2024). Reducing ethnic discrimination in rental applications: The development of a training intervention. Housing Studies, 39(9), 2190–2209. https://doi.org/10.1080/02673037.2023.2170989

Ghekiere, A., Martiniello, B., & Verhaeghe, P. (2023). Identifying rental discrimination on the Flemish housing market: An intersectional approach. Ethnic and Racial Studies 46(12), 2654–2676. https://doi.org/10.1080/01419870.2023.2177120

Ghekiere, A., Verhaeghe, P.-P., Baert, S., Derous, E., & Schelfhout, S. (2022). Introducing a vignette experiment to study mechanisms of ethnic discrimination on the housing market. PLOS ONE, 17(10), e0276698. https://doi.org/10.1371/journal.pone.0276698

Guryan, J., & Charles, K. K. (2013). Taste-based or statistical discrimination: The economics of discrimination returns to its roots. Economic Journal, 123(572), 417–432.

Gusciute, E., Mühlau, P., & Layte, R. (2020). Discrimination in the rental housing market: A field experiment in Ireland. Journal of Ethnic and Migration Studies, 1–22. https://doi.org/10.1080/1369183x.2020.1813017

Haaland, I., Roth, C., & Wohlfart, J. (2023). Designing Information Provision Experiments. Journal of Economic Literature, 61(1), 3–40. https://doi.org/10.1257/jel.20211658

Hanson, A., & Hawley, Z. (2011). Do landlords discriminate in the rental housing market? Evidence from an internet field experiment in US cities. Journal of Urban Economics, 70(2), 99–114. https://doi.org/10.1016/j.jue.2011.02.003

Hanson, A., & Santas, M. (2014). Field Experiment Tests for Discrimination against Hispanics in the U.S. Rental Housing Market. Southern Economic Journal, 81(1), 135–167. https://doi.org/10.4284/0038-4038-2012.231

Heckman, J. (1998). Detecting discrimination, Journal of Economic Perspectives, 12(2): 101-16.

Horr, A., Hunkler, C., & Kroneberg, C. (2018). Ethnic Discrimination in the German Housing Market: A Field Experiment on the Underlying Mechanisms. Zeitschrift Für Soziologie, 47(2), 134–146. https://doi.org/10.1515/zfsoz-2018-1009

INSEE, Enquête logement, 2020.

Jacquemet N., Yannelis C. (2012), Indiscriminate Discrimination: A Correspondence Test for Ethnic Homophily in the Chicago Labor Market. Labour Economics, 19(6): 824-832.

Kakar V., Voelz J., Wu J., Franco J. (2018). The visible host: Does race guide Airbnb rental rates in San Francisco?. Journal of Housing Economics: 40, 25-40.

Koopmans, R., Veit, S., & Yemane, R. (2019). Taste or statistics? A correspondence study of ethnic, racial and religious labour market discrimination in Germany. Ethnic and Racial Studies, 42(16), 233–252. https://doi.org/10.1080/01419870.2019.1654114

Koppensteiner, M., Oliveira, T., & Rohith, N. (2022). Testing for Discrimination in Rental Markets: Experimental Evidence from the UK. SSRN Electronic Journal. https://doi.org/10.2139/ssrn.4178936

Lê, J., Rouhban, O., Tanneau, P., Beauchemin, C., Ichou, M., & Simon, P. (2022). En dix ans, le sentiment de discrimination augmente, porté par les femmes et le motif sexiste. Insee Première, 1911.

Le Gallo, J., L'horty, Y., Du Parquet, L., & Petit, P. (2019). Discriminations in Access to Housing: A Test on Urban Areas in Metropolitan France. Economie et Statistique, 513(1): 27-45.

Lepinteur, A., Menta, G., & Waltl, S. R. (2025). Equal price for equal place? Demand-driven racial discrimination in the housing market. Regional Science and Urban Economics, 111, 104089. https://doi.org/10.1016/j.regsciurbeco.2025.104089

Martiniello, B., & Verhaeghe, P.-P. (2023). Different names, different discrimination? How perceptions of names can explain rental discrimination. Frontiers in Sociology, 8, 1125384. https://doi.org/10.3389/fsoc.2023.1125384

McPherson, M., Smith-Lovin, L., & Cook, J. M. (2001). BIRDS OF A FEATHER: Homophily in Social Networks. Annual Review of Sociology, 27(1), 415. https://doi.org/10.1146/annurev.soc.27.1.415

Ministères de l'aménagement du territoire et de la transition écologique, Chiffre clé du logement, 2022.

Molla, H., Rhawi, C., & Lampi, E. (2022a). Name matters! The cost of having a foreign-sounding name in the Swedish private housing market. PloS One, 17(6), e0268840. https://doi.org/10.1371/journal.pone.0268840

Murchie, J., Pang, J., & Schwegman, D. J. (2021). Can information help Lakisha and Jamal find housing? Evidence from a low-cost online experiment of landlords. Regional Science and Urban Economics, 90, 103712. https://doi.org/10.1016/j.regsciurbeco.2021.103712

Neumark, D. (2018). Experimental Research on Labor Market Discrimination. Journal of Economic Literature, 56(3), 799–866.

Öblom, A., & Antfolk, J. (2017). Ethnic and gender discrimination in the private rental housing market in Finland: A field experiment. PloS One, 12(8), e0183344. https://doi.org/10.1371/journal.pone.0183344

Oh, S. J., & Yinger, J. (2015). What Have We Learned From Paired Testing in Housing Markets? Cityscape, 17(3), 15–60.

Pénicaud, É., & Rémila, N. (2024). 9 % des personnes en emploi déclarent avoir subi des traitements inégalitaires ou des discriminations au travail en 2021. Insee Première, 1983.

Petzold, K., & Wolbring, T. (2019). What can we learn from factorial surveys about human behavior?: A validation study comparing field and survey experiments on discrimination. Methodology, 15(1), 19–28.

Phelps, E. S. (1972). The Statistical Theory of Racism and Sexism. The American Economic Review, 62(4), 659–661.

Phillips, D. C. (2019). Do Comparisons of Fictional Applicants Measure Discrimination When Search Externalities are Present? Evidence from Existing Experiments. Economic Journal, 129(621), 2240–2264. https://doi.org/10.1111/ecoj.12628

Polavieja, J. G., Lancee, B., Ramos, M., Veit, S., & Yemane, R. (2023). In your face: A comparative field experiment on racial discrimination in Europe. Socio-Economic Review, 21(3), 1551–1578. https://doi.org/10.1093/ser/mwad009

Quillian, L., Pager, D., Hexel, O., & Midtbøen, A. H. (2017). Meta-analysis of field experiments shows no change in racial discrimination in hiring over time. Proceedings of the National Academy of Sciences, 114(41), 10870–10875. https://doi.org/10.1073/pnas.1706255114

Rouhban, Odile (2024) En 2023, 3,5 millions d'immigrés nés en Afrique vivent en France. Insee Première, nº2010, 4p.

Tajfel, H., & Turner, J. C. (1979). An integrative theory of intergroup conflict, in The social psychology of integroup relations. In W.G. Austin and S. Worchel Monterey (Eds) The social psychology of integroup relations. Brooks/Cole.

Valfort, M.-A. (2017). La religion, facteur de discrimination à l'embauche en France ? Revue économique, 68(5), 895–907. https://doi.org/10.3917/reco.pr3.0101

Verhaeghe, P.-P. (2022). Correspondence Studies. In K. F. Zimmermann (Ed.), Handbook of Labor, Human Resources and Population Economics (pp. 1–19). Springer International Publishing. https://doi.org/10.1007/978-3-319-57365-6_306-1

Verstraete, J., & Verhaeghe, P.-P. (2020). Ethnic discrimination upon request? Real estate agents' strategies for discriminatory questions of clients. Journal of Housing and the Built Environment, 35(3), 703–721. https://doi.org/10.1007/s10901-019-09721-8

Wallander, L. (2009). 25 years of factorial surveys in sociology: A review. Social Science Research, 38(3), 505–520.

Walzenbach, S. (2019). Hiding Sensitive Topics by Design? An Experiment on the Reduction of Social Desirability Bias in Factorial Surveys. Survey Research Methods, 13(1), Article 1. https://doi.org/10.18148/srm/2019.v1i1.7243

Weichselbaumer, D., & Schuster, J. (2021). The Effect of Photos and a Local-Sounding Name on Discrimination Against Ethnic Minorities in Austria. European Sociological Review, 6, 867–882. https://doi.org/10.2139/ssrn.3874367

Wolter, F., Raviv, O. C., & Mertens, M. (2023). Discriminatory Residential Preferences in Germany—A Vignette Study. KZfSS Kölner Zeitschrift Für Soziologie Und Sozialpsychologie, 75(3), 263–288. https://doi.org/10.1007/s11577-023-00906-2

7. Appendix

Appendix A1. Vignette

Appendix A1.1. Instructions (original: French)

Présentation des objectifs de recherche

Notre objectif est d'étudier la façon dont les étudiant·e·s extraient les informations des dossiers, hiérarchisent les critères d'analyse et mènent une évaluation du risque pris par les propriétaires au regard de chaque dossier.

Nous sommes intéressé·e·s par le lien entre les caractéristiques des répondant·e·s et leur analyse des dossiers. En particulier, nous souhaitons étudier l'effet:

- de leur cursus (formation spécialisée "métiers de l'immobilier" vs IAE ; formation en apprentissage vs sans dimension "terrain"): les étudiant·e·s spécialisé·e·s (a fortiori ceux qui sont en apprentissage) mettent-ils et elles en avant d'autres critères que les étudiant·e·s non spécialistes ? Ces critères sont-ils moins axés sur les seules informations financières (revenu, stabilité de l'emploi) et incorporent-ils d'autres dimensions comme la situation de famille (présence d'enfants, formes de conjugalité), la présence ou non d'animaux de compagnie, l'adéquation des biens avec les attentes des locataires ? Les étudiant·e·s les plus professionnalisé·e·s sont-ils et elles plus sensibles à la dimension "responsabilité sociale des entreprises" que les autres ?
- de leur genre (dans la lignée des travaux en économie expérimentale qui mettent en avant une plus grande aversion au risque des femmes par rapport aux hommes): les étudiantes sont-elles plus sévères que les étudiants sur les critères financiers ? Exigeront-elles des garanties financières plus élevées ?
- de leur localisation géographique: les étudiant·e·s vivant dans des villes où les prix du foncier sont plus élevés et où le marché locatif est le plus tendu seront-ils les plus exigeant·e·s au regard des dossiers des locataires ?

LE BIEN À LOUER

Un propriétaire, **client de longue date** de votre agence (elle gère déjà pour lui la location de deux appartements), souhaite vous confier la location d'un nouvel appartement.

L'appartement est un **3 pièces non meublé** de **54 m²** situé au **2e étage** d'un immeuble **avec ascenseur, sans gardien.** Le bien est loué avec une **cave** et un **parking.** Le **chauffage** et **l'eau chaude** sont **individuels.**

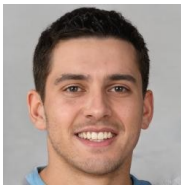
L'appartement est **refait à neuf** et se situe dans un **quartier très recherché.** Pour cette raison, le propriétaire, qui souhaite **louer rapidement,** veut que le **loyer soit fixé dans la fourchette haute** des prix pratiqués dans la ville.

Par ailleurs, il indique avoir eu de **mauvaises expériences** avec des **jeunes locataires,** des locataires issus de **minorités ethniques** ou dont la **situation professionnelle** n'était **pas stable** (CDD, intérimaires, étudiants…). Il ne souhaite plus louer à ce type de personne. Il préférerait aussi qu'il n'y ait **pas d'animaux de compagnie** (chats, chiens) dans son logement.

FOURCHETTE DES PRIX À LA LOCATION DANS LA VILLE

Fourchette des prix	**Au m²**	**Pour un appartement de 54 m²**
Basse	11 euros/m²	594 €/mois
Milieu	15 euros/m²	810 €/mois
Haute	23 euros/m²	1242 €/mois

Descriptions des locataires



Dossier 1. Kévin CASSIN, né le 17 octobre 2000 (23 ans)

Enseignant dans le secondaire (fonctionnaire)

Célibataire, pas d'enfants

Revenu net: 1 845 €/mois

Garantie: éligible VISALE

Logement actuel: logé chez ses parents

Motif de recherche: il vient d'être muté dans la ville

Critères de recherche: ensoleillement, proximité des commerces et des transports, gardien

Animal domestique: chien

Dossier 2. Éric PAGANT, né le 15 avril 1986 (37 ans)

Informaticien en CDI à temps complet

Marié à Clémence BERNARD (30 ans), traductrice auto-entrepreneure. Sans enfants.

Revenu net du ménage: 3 398 €/mois

Garantie: 2 garants caution solidaire

Logement actuel: 2 pièces de 45 m² loué 652 €/mois (quittances fournies)

Motif de recherche: ils souhaitent une pièce de plus pour le télétravail

Critères de recherche: pas de rez-de-chaussée, cave, bonne distribution

Animal domestique: non

Dossier 3. Mohamed DIOP, né le 13 août 1988 (35 ans)

Ambulancier intérimaire

Pacsé à Aïssata SISSOKO (31 ans), caissière en CDD à temps partiel. Sans enfants.

Revenu net du ménage: 1 797 €/mois

Garantie: éligible VISALE

Logement actuel: 2 pièces de 38 m² loué 612 €/mois (quittances fournies)

Motif de recherche: ils cherchent un appartement plus grand

Critères de recherche: parking, pas de vis-à-vis, WC séparés

Animal domestique: non

Appendix A1.1. Instructions (translation: English)

Presentation of research aims

Our objective is to study the way in which students extract information from files, prioritise the analysis criteria and carry out an assessment of the risk taken by landlords with regard to each file.

We are interested in the link between the respondents' characteristics and their analysis of the files. In particular, we would like to study the effect of:

- Their course of study (specialised real estate training vs. IAE; apprenticeship training vs. no "field" dimension): do specialised students (especially those on apprenticeships) put forward different criteria than non-specialist students? Are these criteria less focused solely on financial information (income, job stability) and do they incorporate other dimensions such as family situation (presence of children, marital status), the presence or absence of pets, the suitability of properties for tenants' expectations? Are the most professional students more sensitive to the "corporate social responsibility" dimension than others?
- Of their gender (in line with research in experimental economics, which shows that women are more risk averse than men): are female students more strict than male students when it comes to financial criteria?
- Their geographical location: will students living in towns where property prices are higher and the rental market is tighter be the most demanding with regard to tenants' applications?

THE PROPERTY TO RENT

A landlord, a **long-standing client** of your agency (it already manages the rental of two flats for him), would like to entrust you with the rental of a new flat.

The flat is a **54 m² unfurnished 3-room** flat located on the **2e floor** of a building **with a lift, without a caretaker.** The property is rented **with a cellar** and **parking space. Heating** and **hot water** are **individual.**

The flat has been **refurbished** and is located in a **highly sought-after area.** For this reason, the owner, who **wishes to let quickly,** wants the **rent to be set at the upper end of the price range** for the town.

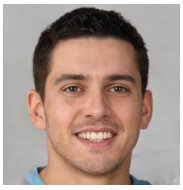
He also said that he had had **bad experiences with young tenants,** tenants from **ethnic minorities** and tenants with **unstable employment situations** (fixed-term contracts, temporary workers, students, etc.). He no longer wishes to rent to this type of person. He would also prefer there to be **no pets** (cats, dogs) in his accommodation.

RENTAL PRICE RANGE IN THE CITY

Price range	**Price (in €/m²)**	**For a 54 m² flat**
Low	11 euros/m²	594 €/month
Middle	15 euros/m²	810 €/month
High	23 euros/m²	1242 €/month

Tenant description

File 1. Kévin CASSIN, born in October 17th, 2000 (aged 23)



Secondary school teacher (civil servant)

Single, no children

Net income: €1,845/month

Guarantee: VISALE-eligible

Current accommodation: living with parents

Search motivation: recently transferred to the town

Search criteria: sunny location, close to shops and transport, presence of a caretaker

Pet: dog

File 2. Éric PAGANT, born in 15 April 15th, 1986 (aged 37)

Married to Clémence BERNARD (aged 30), self-employed translator. No children.

Net household income: €3,398/month

Guarantee: 2 personal guarantors

Current accommodation: 2-room 45 m² flat rented for €652/month (receipts provided)

Search motivation: wants an extra room for teleworking

Search criteria: no ground floor, presence of a cellar, good distribution

Pets: none

File 3. Mohamed DIOP, born August 13th, 1988 (aged 35)

Temporary ambulance driver

Married to Aïssata SISSOKO (aged 31), cashier on part-time fixed-term contract. No children.

Net household income: €1,797/month

Guarantee: eligible for VISALE

Current accommodation: 38 m² 2-room flat rented for €612/month (receipts provided)

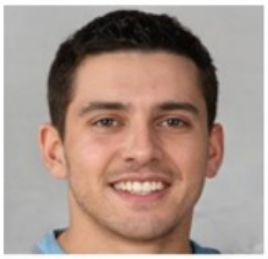
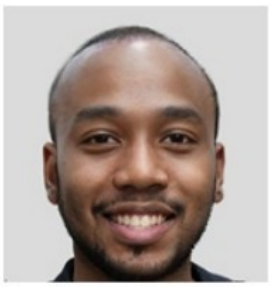
Search motivation: they are looking for a larger flat

Search criteria: presence of a parking space, no overlooking *vis-à-vis*, separate WC

Pets: none

Appendix A1.3. Photographs

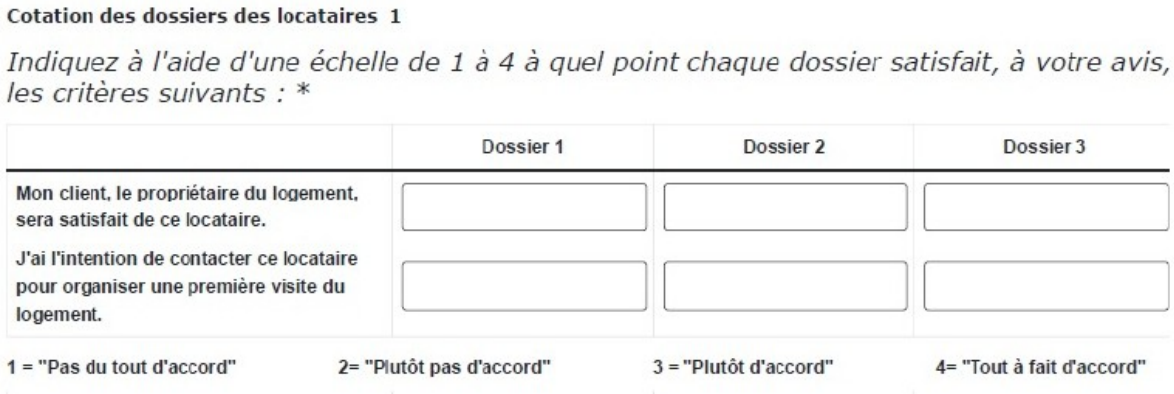
Photographs were generated using the generator of the website This Person does not exist: https://thispersondoesnotexist.com/.

Spread	Applicant 1	Applicant 2	Applicant 3
Mixed spread (2 White, 1 Black)			
Black spread 3 Black applicants			
White spread 3 White applicants			

Appendix A1.4. Task outcome

Respondents were asked to answer their agreement (from 1 = Disagree completely to 4 = Agree completely) with the following 2 statements.

1) My client, who is the landlord of this housing unit, will be satisfied with this tenant
2) I have the intention to contact the applicant to organize a first visit of the housing unit



Cotation des dossiers des locataires 1

*Indiquez à l'aide d'une échelle de 1 à 4 à quel point chaque dossier satisfait, à votre avis, les critères suivants : **

	Dossier 1	Dossier 2	Dossier 3
Mon client, le propriétaire du logement, sera satisfait de ce locataire.			
J'ai l'intention de contacter ce locataire pour organiser une première visite du logement.			

1 = "Pas du tout d'accord" 2= "Plutôt pas d'accord" 3 = "Plutôt d'accord" 4= "Tout à fait d'accord"

Appendix A2. Regressions

Table A2.1. Marginal effects of applicant social status, origin, flat quality, landlord preferences, and respondent characteristics

	Perception of the landlord's satisfaction		Visit intention	
	(1)	(2)	(3)	(4)
Applicant's social status (ref = High)				
Lower (1)	-1.739***	-1.740***	-1.770***	-1.794***
Flat quality (ref = Low)				
High (2)	0.184**	0.209**	0.244**	0.274***
(1) x (2)	-0.099	-0.115	-0.082	-0.098
Landlord's preferences (ref = Neutral)				
Discrimination against ethnic minority (3)	-0.090	-0.089	-0.076	-0.070
(1) x (3)	0.416***	0.427***	0.197	0.230
Applicant's origin (ref = White)				
Black	0.056	0.043	0.025	-0.012
Black x (1)	-0.073	-0.089	-0.027	-0.000
Black x (3)	-0.613***	-0.594***	-0.832***	-0.790***
Black x (2)	-0.135	-0.141	-0.118	-0.123
Black x (1) x (3)	0.349**	0.370***	0.751***	0.731***
Other characteristics				
Governmental guaranteed VISALE deposit system		0.061		0.061
Tenant does not want a first floor		0.074		0.087
First wave of questioning		-0.077		-0.102
Respondent characteristics				
Female (ref = Male)		0.038		0.039
Foreigner (ref = French)		0.018		-0.035
Age (ref = under 20 years old)				
20 to 21 years old		-0.068		-0.035
22 to 23 years old		-0.000		0.048
24 years old and older		0.002		-0.062
Campus (ref = Paris)				
Nantes		-0.119		-0.138
Marseille		-0.040		0.000
Bordeaux		0.051		0.172
Montpellier		0.263***		0.467***
Lyon		0.007		0.189**
Lille		-0.024		-0.032
Respondent training				
> 2 years of professional experience		-0.085*		-0.056
Conference on discrimination (ref = did not attend)		0.039		0.050
Deontology class (ref = did not attend)		-0.013		0.111
Constant	1.119***	1.083***	1.061***	0.933***
R-squared	0.524	0.532	0.448	0.462

All columns report estimates of the relative score for Panel A with 894 applicants to a linear probability model.

Data is weighted to balance the different scenarios. Standard errors are clustered on each respondent.

*** significant at 1%, ** significant at 5%, * significant at 10%.

Table A2.2. Marginal effects of applicant origin and landlord in-group preferences

	Perception of the landlord's satisfaction		Visit intention	
	(1)	(2)	(3)	(4)
Landlord preferences (ref = neutral)				
Discrimination (1)	0.049	0.136	-0.091	-0.072
Homogamy (2)	-0.306**	-0.294**	-0.438***	-0.472***
Applicant's origin (ref = White & High Social status)				
Black & Lower social status (3)	-1.667***	-1.653***	-1.667***	-1.653***
(3) x (1)	-0.098	-0.130	-0.098	-0.130
(3) x (2)	0.917***	0.925***	0.917***	0.925***
Constant	1.062***	1.011***	1.104***	0.834***
Covariates	NO	YES	NO	YES
R-squared	0.509	0.530	0.417	0.450

All columns report estimates of the relative score for Panel C with 302 applicants to a linear probability model.
Data is weighted to balance the different scenarios. Standard errors are clustered on each respondent.
*** significant at 1%, ** significant at 5%, * significant at 10%.
The other covariates are(i) respondent characteristics (gender, nationality, age, training campus, having done at least two years of apprenticeship, having taken part in sessions on raising awareness of discrimination and having taken a deontology course) and (ii) applicant characteristics (tenant benefiting from a public housing deposit scheme, Visale), tenant asking not to be on the first floor.

Table A2.3 Marginal effects of applicant name and skin colour

	Perception of the landlord's satisfaction		Visit intention	
	(1)	(2)	(3)	(4)
Applicant's origin (ref = White & High Social status)				
Black & Lower social status	-1.597***	-1.574***	-1.602***	-1.597***
Black & Lower social status (no photograph)	0.993***	1.073***	0.999***	1.100***
Black & Lower social status (French-sounding name)	-0.098	-0.053	-0.092	-0.032
Constant	1.171***	1.354***	1.202***	1.374***
Covariates	No	Yes	No	Yes
R-squared	0.386	0.455	0.320	0.401

All columns report estimates of the relative score for Panel D with 394 applicants to a linear probability model. Data is weighted to balance the different scenarios. Standard errors are clustered on each respondent.
*** significant at 1%, ** significant at 5%, * significant at 10%.
The other covariates are(i) respondent characteristics (gender, nationality, age, training campus, having done at least two years of apprenticeship, having taken part in sessions on raising awareness of discrimination and having taken a deontology course) and (ii) applicant characteristics (tenant benefiting from a public housing deposit scheme, Visale), tenant asking not to be on the first floor.

Table A2.4. Marginal effects of applicant origin and pool competition

	Perception of the landlord's satisfaction		Visit intention	
	(1)	(2)	(3)	(4)
Applicant's income: not Rich (1)	-1.809***	-1.790***	-1.935***	-1.932***
Flat quality: High (2)	0.096*	0.084**	0.261***	0.252***
Landlord preferences: discriminatory (3)	-0.111	-0.094	-0.200	-0.169
(1) X (3)	0.457***	0.441***	0.446***	0.431**
Pool competition (ref = White with Black competitors)				
Black with White competitors (B-W)	-0.279**	-0.276**	-0.373***	-0.382***
Black with Black competitors (B-B)	-0.415***	-0.328***	-0.350**	-0.142
White with White competitors (W-W)	-0.493***	-0.289	-0.571***	-0.243
Black x (1)	0.462***	0.453***	0.651***	0.660***
W-W x (1)	0.551***	0.328	0.677***	0.478
B-W x (3)	-0.439***	-0.440***	-0.456***	-0.454***
B-B x (3)	-0.078	-0.074	-0.348**	-0.355*
Covariates	NO	YES	NO	YES
Constant	1.174***	1.207***	1.114***	1.023***
R-squared	0.377	0.388	0.315	0.331

All columns report estimates of the relative score for Panel B with 1,114 applicants to a linear probability model. *Data is weighted to balance the different scenarios. Standard errors are clustered on each respondent*.

*** significant at 1%, ** significant at 5%, * significant at 10%.

The other covariates are(i) respondent characteristics (gender, nationality, age, training campus, having done at least two years of apprenticeship, having taken part in sessions on raising awareness of discrimination and having taken a deontology course) and (ii) applicant characteristics (tenant benefiting from a public housing deposit scheme, Visale), tenant asking not to be on the first floor.

Appendix A3. Robustness checks

Our estimation may be affected by our methodological choices: the use of the relative score, considering the scores in a continuous rather than discrete manner, taking into account the selection of our sample. Due to time constraints, we were unable to interview all the school's students. Our results may therefore be affected by a selection bias.

The aim of this section is to check the sensitivity of the results discussed in the paper. Table A4 presents the various alternative estimates that could have been used.

Table A4. Robustness checks

	Linear probability model		Ordered probit	Model with selection
	Gross Score	Relative score		Relative score
Applicant's social status (ref = High)				
Lower (1)	-1.777***	-1.750***	-2.389***	-1.778***
Flat quality (ref = Low)				
High (2)	0.085	0.191**	0.278	0.137*
(1) x (2)	-0.099	-0.099	-0.085	-0.111
Landlord's preferences (ref = Neutral)				
Ethnic discrimination (3)	-0.063	-0.072	-0.092	-0.386***
(1) x (3)	0.268*	0.409***	0.327	0.603***
Applicant's origin (ref = White)				
Black	0.004	0.032	0.061	-0.313***
Black x (1)	-0.035	-0.089	-0.015	
Black x (3)	-0.752***	-0.611***	-0.993***	
Black x (2)	-0.123	-0.123	-0.231	
Black x (1) x (3)	0.658***	0.375***	0.562*	
Cutoff points				
1			-1.886***	
2			-1.219***	
Constant	3.659***	3.659***		1.305***
Covariates	YES	YES	YES	YES

All columns report estimates of the relative score for Panel A with 894 applicants.

Data is weighted to balance the different scenarios, except for the ordered probit. Standard errors are clustered on each respondent.

*** significant at 1%, ** significant at 5%, * significant at 10%.

The other covariates are(i) respondent characteristics (gender, nationality, age, training campus, having done at least two years of apprenticeship, having taken part in sessions on raising awareness of discrimination and having taken a deontology course) and (ii) applicant characteristics (tenant benefiting from a public housing deposit scheme, Visale), tenant asking not to be on the first floor.For the model with selection identification, covariate is the marks obtained in the last semester.