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Author(s): Mathieu Bunel, Yannick L'Horty, Souleymane Mbaye, Loïc du Parquet and Pascale Petit

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TESTING FOR DISCRIMINATION IN LEISURE ACCOMMODATION

MATHIEU BUNEL[a], YANNICK L'HORTY[b], SOULEYMANE MBAYE[c], LOÏC DU PARQUET[d] AND PASCALE PETIT[e]

We conducted a correspondence test covering 1,433 leisure accommodation facilities (campsites, hotels and guesthouses) located in three major French tourist regions: Provence, Brittany and Loire region. Our multi-criteria experimental protocol makes it possible to test the significance and quantify the different forms of discrimination according to gender, age, ethnic origin suggested by the client's name and reputation of their neighbourhood of residence, as well as the cross effects. Overall, we find evidence of strong discrimination against clients of African origin or those residing in a deprived neighborhood. On the other hand, discrimination against young people is at a much lower level and is concentrated mainly at guesthouses. Finally, the client's gender does not seem to have a significant impact on the probability of obtaining a reservation.

JEL Codes: C93, J15, J16, L83.
Keywords: Distrmination, Field Experiement, Leisure Accommodation.

1. INTRODUCTION

The aim of this article is to propose a large-scale test to measure discrimination in access to leisure accommodation services, particularly conventional accommodation such as campsites, hotels and guesthouses. Using the correspondence test method, we sent fake bookings to tourism establishments. The bookings were identical in all respects except for the potentially discriminatory feature(s) targeted by the test. To control unobserved heterogeneity which might affect findings, each facility received bookings from all our applicants. Furthermore, the observable characteristics of these establishments (size, price of services offered, source of advert) were identified to provide an "all other things being equal" analysis. Between April and June 2015, we tested 1,433 establishments, consisting of 433 campsites, 353 hotels and 647 guesthouses, located in three major French tourist regions: Provence [1], Brittany and Loire[2] . We conducted a multi-criteria test to measure discrimination according to gender, age, origin and place of residence, as well as their

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[a]Université de Bourgogne-Franche-Comté, LEDI, TEPP-CNRS (FR 3435). mathieu.bunel@bourgogne.fr

[b]Université Gustave Eiffel, ERUDITE (EA 437), TEPP-CNRS (FR 2042), UPEC, UPEM, F-77454 Marne-La-Vallée France. yannick.lhorty@univ-eiffel.fr

[c]Université Gustave Eiffel, ERUDITE (EA 437), TEPP-CNRS (FR 2042), UPEC, UPEM, F-77454 Marne-La-Vallée France. souleymane.mbaye@univ-eiffel.fr

[d]Université du Mans, GAINS et TEPP-CNRS, (FR 2042) UFR Droit, Sciences Economiques, Gestion, Avenue Olivier Messiaen 72085 Le Mans cedex. loic.duparquet@univ-lemans.fr

[e]Université Gustave Eiffel, ERUDITE (EA 437), TEPP-CNRS (FR 2042), UPEC, UPEM, F-77454 Marne-La-Vallée France. pascale.petit@univ-eiffel.fr

[1] In French, the official name of Provence region is Provence-Alpes-Côte d'Azur (PACA).

[2]The complete name of Loire Region in French is Pays-de-Loire.

cross effects. Six fictitious candidates submitted requests for accommodation to the same tourist establishments. Their requests were similar in all respects, with the exception of the potentially discriminatory feature(s) to be tested. The size of our sample makes it possible to determine whether there are different behaviours within sub-groups of establishments defined, for example, by their type or standing. In addition, our test allows us to check whether the socio-demographic environment has an impact on discriminatory behaviour. Overall, we find evidence of strong discrimination against clients of African origin or those residing in a deprived neighborhood. On the other hand, discrimination against young people is at a much lower level and is concentrated mainly at guesthouses. Finally, the client's gender does not seem to have a significant impact on the probability of obtaining a reservation. The first research on discrimination in access to housing was undertaken in the United States after the implementation in 1964 of the Civil Rights Act, the promulgation in 1968 of the Fair Housing Act, and the creation of the Office of Fair Housing and Equal Opportunity. The reform of the regulatory framework has led to the development of tests to demonstrate the existence of ethno-racial discrimination in access to housing. Two main methods have been implemented: in-person audit (involving acolytes actually involved in the rental process) and correspondence tests (based on sending fictitious applications). These methods have been employed in the United States since the 1970s and have provided extensive experimental evidence of discrimination in access to housing, particularly for the most studied forms of ethno-racial discrimination (Yinger (1986) ; Page (1995); Choi, Ondrich, and Yinger (2005) ; Hanson and Hawley (2011)). The critical analysis proposed by Heckman (1998) indicates that although the correspondence test method provides information only on the first step of the selection process, it is the most rigorous approach for identifying discriminatory behaviour. With the widespread use of the Internet and real estate advertising websites, correspondence testing has become the most effective way to test the housing market. In a recent overview, Flage (2018) identifies 29 scientific studies that have applied this method in 15 different countries. He concludes that candidates who report a name that sounds foreign are on average half as likely as majority candidates to be given the opportunity to visit rented accommodation.

At an Urban Institute conference, Siegelman (1998) advocated the idea of extending testing methods beyond housing and employment discrimination to everyday commercial transactions. He drew a distinction between transactions where discrimination takes the form of higher prices (e.g. car sales and TV repair) and those where it takes the form of the denial or degradation of services (hailing a taxi, being served in a restaurant). Two decades later, it is clear that too little research has been done in this direction. In particular, the issue of discrimination is practically absent from the economics of tourism; there is no chapter on these issues in the reference handbooks (Dwyer (2007); Jamal and Robinson (2009)). Yet studies on discrimination in access to employment show that the phenomenon affects the restaurant sector in particular, both in the United States (Neumark, Bank, and Van Nort (1996)) and in France (Bunel, L'Horty, and Petit (2016)).

In the field of leisure accommodation, discrimination on the grounds of sexual orientation has been one of the most studied. By sending mail to 320 Hotels and Bed & Breakfasts in the United States, Jones (1996) tested the probability of obtaining a reservation for homosexual customers. The results indicate that the latter receive fewer positive responses than do heterosexual clients. Howerton, Meltzer, and Olson (2012) extended this analysis by distinguishing two types of contact. The first type is impersonal and is administered by

e-mail, while the second is more direct and is conducted by telephone. Their results show that discrimination is significant only in impersonal bookings and disappears in more direct interactions. The size of the samples used to carry out these various studies raises questions however about the power of the statistical tests. The study by Edelman, Luca, and Svirsky (2017) on reservations via the AirBnB website provides more robust results in this respect. It covers 6,400 offers published on the AirBnB website in the summer of 2015 in five major US cities: Baltimore, Dallas, Los Angeles, Saint Louis and Washington. The authors constructed four fictitious candidate profiles that crossed gender and ethnic origin suggested by surname. Their findings indicate an 8-percentage-point less positive response rate for applications from individuals with African-American names. Robustness tests show that this result is not affected by the homogamy of the lessors, nor by the ethnic environment of the rental, nor by the differences in the characteristics of the rented property. On the other hand, discrimination is not significant for landlords who have already rented their property to African Americans.

Several papers delve into this theme by analyzing the accommodation network behavior on AirBnb or more generally on P2P platforms in the US, replicated Edelman et al.'s methodology by using Airbnb European datasets. Ahuja, Lyons, et al. (2017) test the existence of discrimination against guests in a same-sex relationship in the city of Dublin, Ireland. Laouenan and Rathelot (2017) investigate discriminatory behavior against guests with Arabic or Muslim names in 10 European cities. On looking at French data, we can also refer to the study by Johnson and Guillard (2017) which tests differences in access to the service and gaps in the time and quality of response received by customers who differ by ethnic origin and geographical location. It covers a limited sample of 160 guesthouses and concludes that there is no discrimination in access to the service but that discrimination is informal in nature, the response being less rapid and more concise.

There are several differences between our correspondence test and that of prior papers examining discrimination in leisure accommodation market. First, we are simultaneously examining a greater number of discrimination criteria and not just one or two. We measure discrimination on grounds of age, and among young people, discrimination on grounds of gender, assumed origin and reputation of place of residence. Second, we are able to deepen the diagnosis by taking into account differences from one territory to another (Provence, Brittany and Loire region), as well as from one type of accommodation to another (campsites, hotels and guesthouses). Finally, the non-negligible size of the sample and consequently the power of the statistical tests make it possible to produce robust results.

Even though our results are partial, irregular and localized, they allow us to draw several robust conclusions. First, we find statistically significant discrimination against clients whose names suggest an African origin or who reside in a disadvantaged neighbourhood. On the other hand, the influence of age on this probability is weak and not systematic. Secondly, discriminatory behaviour differs in the three types of establishment: hotels, campsites, and guesthouses. Discrimination against young people, related to the reputation of their place of residence, occurs in all three types of establishments but tends to be almost twice as high in hotels and guesthouses. Finally, discrimination on the grounds of ethnic origin is highly prevalent in guesthouses and campsites but not significant in hotels. Discriminatory behaviour also differs by region. The organization of the article is as follows. The first section describes the experimental protocol for identifying discriminatory behaviour. In Section 2, we present and discuss the results.

2. EXPERIMENTAL DATA COLLECTION PROTOCOL

The discrimination testing method is currently widely used in many countries, including France, to investigate whether some people have greater difficulty in accessing a range of retail services, based on one or more criteria (Bertrand and Duflo (2017); Neumark (2018). This method consists in sending fictitious applications to real establishments. The applications are identical in all respects except for the potential source(s) of discrimination that are tested. This section details the fictitious candidate profiles used and the email messages sent to report these characteristics. We present the direct and cross-effects that can be identified using this protocol, and describe the establishments tested.

2.1. *Type and location of accommodation facilities tested*

From April to June 2015 we sent fictitious applications to 1,433 establishments located in three French regions, Provence, Loire and Brittany, for three main types of establishment: campsites, guesthouses and hotels. Table I shows their respective distribution. More than 45% of the establishments tested were guesthouses, 30% campsites, and 25% hotels. They were distributed along approximately the same lines in the three selected regions.
According to the Ministry of Tourism[3] , 33% of tourist stays are in commercial accommodation. The main types of commercial accommodation chosen are rentals in a cottage or bed and breakfast (40%), camping (25%) and hotels (15%). We kept these proportions when selecting our sample, by slightly overestimating the hotels. In terms of destination, Rhône-Alpes is the tourist region preferred by the French (20.3 million trips), ahead of Provence (16.8 million), Loire region (14.2 million), Ile-de-France (13.7 million) and Brittany (13.5 million). In terms of number of overnight stays, Provence (118 million), Rhône-Alpes (104 million), Languedoc-Roussillon (97 million) and Brittany (81 million) are the preferred destinations. We used three regional guidebooks to identify and locate our target establishments: the Petit Futé, the Michelin Guide, and the Guide du Routard.
For the purposes of our research, we included accommodation facilities located only in the Provence, Loire and Brittany regions because the majority of stays in the Rhône-Alpes region are at ski resorts, which did not match our timeframe for sending out bookings (in the spring). Furthermore, the Paris region is foremost an international destination. Figure A1 in the appendix shows the geographical distribution of the establishments.
These three regions do not have the same level of tourist offer. As Provence is on the Mediterranean coast, the cost of stays is generally higher than in Brittany and even more so than in Loire region. We noted that online bookings play a crucial role: in 2012, 65% of French people used the internet to book their trips in France. Most real customers make their booking via email.

2.2. *Chosen profiles*

Table II presents the six fictitious individual variables profiles selected, distinguished only by their age, sex, origin indicated by the consonance of their first and last names, and the reputation of their place of residence, which for some was a disadvantaged area

[3]https://www.entreprises.gouv.fr/etudes-et-statistiques/bilan-tourisme-2012

identified by national public policy as a priority area (QPV: *Quartier Prioritaire de la politique de la Ville*).
These six fake applicants all sent similar requests by email to the same establishments. As shown in Table III, a comparison of the responses to these six applicants, considered in pairs, highlights possible discrimination on the grounds of several criteria: age, gender, inferred ethnic origin, and place of residence. Our protocol helps to identify the direct effects and some intersecting effects of these potential sources of discrimination.

2.3. *Sending and content of messages*

We sent the six messages from our fake applicants in the same week and in random order to each of the 1,433 target establishments, that is, 8,598 emails. Every time, the establishments received short messages from each of the six fake applicants, requesting a reservation as well as further information. The emails revealed four distinctive features for each applicant: age, gender, ethnic origin, and place of residence. The emails contained no other significant differentiating element. Discrimination could thus be evidenced if, on average, the target establishments failed to follow up the booking requests of all fake applicants in the same way. We switched messages between applicants over the course of the testing, so that unequal treatment could not be attributed to any qualitative difference in the message. The six fake applicants said they lived in Paris. By way of illustration, the message sent to hotels by the fake customer in his forties, having a French sounding name and living in a neutral neighborhood, was as follows:

> Hello,
> I would like to book a room for 2 people for week 36 (from midday on 29 August to midday on 5 September).
> Do you have any rooms available, how much do they cost and how should I book? By the way, we are in our forties so what sort of activities are on offer in the surrounding area?
> We will be driving so can we park our car easily?
> Thank you. Here are details of how to contact me (preferably by email).
>
> Christophe LEROY
> Email: XXX
> 14 boulevard Arago 75013 PARIS
>
> *(No words appear in bold in the original message)*

The message sent by the young customer with a French sounding name and living in a QPV was as follows:

Hello,
I would like to know if I could book a room for 2 people from 29 August to 5 September 2015.
We both have youth discount cards.
Could you give me details of available rooms, the cost of rooms and parking and activities on offer during the period (festivals, sports, excursions...)?
Thanking you in advance.
Florian Roux
Email: XXX
121 Boulevard Barbès 75018 Paris

Using a surname from which ethnic origin may be inferred is the subject of much discussion in the existing literature. As Fryer Jr and Levitt (2004) point out, making use of names to indicate ethnic background can pose a problem in the precise identification of the effect of ethnic background since surnames reflect both origin and social status, even the intersecting effect of both identifiers. In strict logic, our protocol tests differences linked to being called Florian Roux or Laura Durand compared to being called Désiré Sambou or Grace Goudiaby and not, strictly speaking, differences linked to African ethnic origin[4]. Note that the last two surnames used to suggest a non-Muslim African ethnic origin were chosen because they frequently occur amongst the Diola ethnic group in Senegal. This is a Catholic community whose members also often have Christian-sounding names[5]. The French-sounding surnames used for applicants are very common in France, and the first names are among the ten most frequently given to newborn babies in the year of their birth.

3. FINDINGS

Of the 1,433 establishments tested[6], 1,254 responded to at least one of the six fictitious clients, which is a response rate of 87.5%. A response is considered negative when the supplier does not respond to the fictitious customer's message or explicitly indicates that the transaction will not be possible. In other cases, the answer is considered not to be negative. The distribution of the number of responses per establishment tested and for each of the 6 fictitious clients is given in Table IV. Overall, the non-negative response rate is higher for hotels (95%) than for campsites (92%). Guesthouses appear to be much more selective since they respond to only at least one candidate in 81% of cases. There are also significant differences according to the geographical location of the establishments. The response rate is more favourable in the Provence region (92%) than in Brittany (87%) or

[4]To ensure that skin colour is the only factor taken into account, Doleac and Stein (2013), Ayres, Banaji, and Jolls (2015) and Kakar, Voelz, Wu, and Franco (2018) suggest an alternative methodology based on using photos when sending messages. In the context of our study, using this method was not feasible.

[5]http://www.planete-senegal.com/senegal/noms et prenoms senegal.php

[6]We eliminated from the initial sample of 1,483 establishments, 50 which expressed surprise at the similarity of requests from many of our fake applicants.

in the Loire region (84%). While the non-negative response rate was very high overall for the establishments tested, which responded significantly less positively to all fictitious clients (see Table A1). In one in five cases, they answered in no negative to all six potential clients and in almost one in three cases they answered in no negative to only one or two potential clients. The guesthouses and establishments located in the Loire region seem to be the ones that select their customers the most.

This selection process is certainly due to the large number of booking requests received. Faced with a multitude of requests, it is normal that the establishment is unable to respond positively to all of them. In the absence of discrimination, this process should be random. However, the chances of obtaining a non-negative response differ significantly depending on the characteristics of the fictitious clients (Table IV and Table A2). Thus, when the establishment chose to send a non-negative answer to only one of our six fictitious individuals, in 34% of the cases the individual was in their forties, and in only 6% of the cases they were young, with a name suggesting French origin, and residing in a QPV. This is why a 40-year-old client whose name suggests French origin and who resides in a neutral neighborhood receives an average of 63% non-negative responses, compared to 46% for a young client who resides in a QPV and whose name also suggests French origin. Note that this selection is costly for establishments. In Table A5 we calculate the financial loss of earnings of the selective establishments. The cost of refusal is overall the highest for hotels and the lowest for camping sites. This result is related to Hedegaard and Tyran (2018).

3.1. *Direct and intersecting effects*

From the differences in the rate of non-negative responses addressed to the six fictitious clients, it is possible to identify the extent of the different sources of direct and cross-discrimination listed in Table III. A test of the significance of these effects is carried out each time using the bootstrap method. The results presented in Table V clearly identify the existence of statistically significant discrimination based on age and on origin, suggested by name and reputation of place of residence. Gender is significant only for clients of French origin, and in this case makes a very small difference. For clients of African origin, this dimension is no longer statistically significant.

While being young and having a name suggesting African origins seems to have similar negative effects in the search for leisure accommodation (between 6 and 7 percentage points), living in a disadvantaged neighbourhood (QPV) penalizes our fictitious clients even more (on average by 10.5 percentage points).

Table V also shows the extent of the cross effects of these different sources of discrimination. Penalties related to age and origin increase the probability of receiving a non-negative response. Thus, a young fictional client with an African-sounding name has almost 14 percentage points less chance of receiving a non-negative response than a 40-year-old client of seemingly French origins.

This gap even reaches 16.5 points for young people residing in a QPV. Thus, to obtain 10 non-negative answers to his reservation requests, a young resident in a neighbourhood with a bad reputation must send 6 more messages (22 against 16) to leisure accommodation establishments than a forty-year-old resident in a neutral neighbourhood, that is, nearly 40% more applications.

The testing method has the advantage of perfectly controlling the characteristics of clients wishing to rent leisure accommodation since they are fictitious individuals. However, this

method does not control for observable differences that may exist between the establishments tested. In order to take this into account, it is necessary to reason "all other things being equal" using a regression analysis.

3.2. *Effects taking into account observable characteristics*

We wanted to interview three types of campsites, hotels and bed and breakfast establishments located in three distinct regions: Brittany, Provence, and Loire. Apart from these controlled characteristics, the establishments surveyed differ in several observable respects: their size, their rates, the number of stars attributed to the establishment by the different tourist guides, and the type of guest. Our grouping of the establishments by category of rates was calculated independently for campsites, hotels and guesthouses, because the prices charged by these establishments were difficult to compare.

To identify the gender of the owners we proceeded as follows: if for each of the non-negative responses sent to our customers the gender identified in the message is identical, we assign it to the landlord. When this is not indicated or varies from one answer to another, we classify it in a "mixed" category. In addition, even if the order in which the 6 fictitious customers sent their fictitious bookings was randomly switched during the testing, it is likely that this order had an impact on the landlords' responses. To control this potential effect, this dimension is also introduced in the control variables.

Table A4 provides descriptive statistics on these elements and indicates the average non-negative response rate. Table VI shows the impact of the characteristics of fictitious customers and control variables on the probability of obtaining a non-negative response at the time of booking. To do this, a linear probabilistic model is used. In order to take into account the non-independent nature of the applications, since they were sent each time in groups of 6 to the same establishment, the standard deviations are classified.

Two models are successively estimated in Table VI. Model 1 presents the results when only characteristics of fictitious clients are introduced as explanatory variables, while Model 2 introduces control variables in addition to the estimate. The estimated coefficients are directly interpreted as marginal effects on the probability of obtaining a non-negative response. As expected, the coefficients obtained using Model 1 correspond to those in Table V. For example, a young person whose name suggests African origins has 13.7 percentage points less chance (-0.062 + -0.075) of getting a non-negative response from a landlord.

When observable characteristics are taken into account, these differences vary significantly (Model 2). First of all, the gender effect of the candidate is no longer statistically significant when one considers "all other things being equal". Thus, being a young woman no longer penalizes our candidates. It is also noted in this specification that the penalty associated with being young is almost halved from 6.2 points to 3.3 percentage points.

On the other hand, the penalty borne by a young candidate from a disadvantaged neighbourhood (QPV) remains broadly the same. In the case of an African-sounding name, the disadvantage decreased only slightly (from 7.5 points to 5.9 points). The rest of Table VI shows the influence of the observable characteristics of the offers on the dependent variable.

Establishments whose advertisements are based on the Michelin Guide or those offering the highest prices have a statistically higher probability of responding favourably to fictitious candidates. For the location and type of accommodation, we find the trend identified

in Table IV, that is, establishments located in the Provence region as well as campsites have a higher probability of responding positively to customers. Finally, the sending order significantly and very strongly affects the response probabilities. A candidate arriving in 6th position is penalized by about 34 points in his or her probability of receiving a positive answer.

Thus, the results obtained indicate that discrimination against the clients of leisure accommodation establishments mainly concerns young people of apparent African origin, regardless of their gender, as well as young men from disadvantaged neighborhoods (QPV). Unfortunately, our testing does not identify whether young women from these neighborhoods are penalized in the same proportions.

Finally, there do not seem to be any differences according to the lessor's gender. In addition, although this result is not shown in Table IV, we tested whether the lessor's gender, crossed with the fictitious client's gender, affected the probability of receiving a non-negative response. The estimated coefficients are in this case all insignificant. On the basis of this result, we refute the hypothesis of homogamy in this market. These non-significant cross variables were not included in Model 4.

3.3. *Effects per geographic location and type of establishment*

In order to check the stability of findings set out in the preceding section, we will now examine whether the discrimination identified varies according to the type of establishment (hotels, guesthouses, campsites) and their geographical location (Provence, Brittany and Loire region). The graphs in Figure 1 present the calculated mean deviations and 95% confidence interval bounds obtained by the bootstrap method for the various direct and cross effects without introducing control variables. Age discrimination appears to be insignificant in hotels. On the other hand, it is highest in guesthouses and in establishments located in the Loire region. Among young people, discrimination related to the reputation of the place of residence occurs in all three types of establishment, but generally to a lesser extent at campsites. It is found more in establishments located in the Provence region and is only slightly significant for those located in Brittany.

Finally, the discrimination linked to African origin suggested by the name is not significant in hotels, but it is practised extensively by guesthouses and campsites and by establishments located in the Loire region.

The cross effects coupling ethnic origin with age, or the reputation of the residential area with age, are greater for guesthouses and for establishments located in the Provence region or even in the Loire region.

Tables 7 and 8 aim to verify whether these raw results are robust to a control on the observable characteristics of the establishments. Model 3 and Model 5 show that the penalty suffered by young clients is not evidenced at all residential facilities or in all regions. This penalty is statistically significant only for guesthouses and for establishments located in the Loire region. On the other hand, at campsites and hotels, being a young customer does not significantly reduce the probability of obtaining a non-negative answer when making a reservation.

Another noteworthy result is that, although there does not seem to be any discrimination against young women, these clients are at an advantage in establishments located in the Loire region. In other words, young men, regardless of their ethnic origin suggested by their name, less frequently receive non-negative responses for rentals in this region.

The penalty associated with the neighbourhood's reputation is almost twice as high in the Provence region as in other areas. Hotels also seem to discriminate more against this population, while they tend to discriminate less against guests who suggest an African origin. According to Model 4, the latter two results remain statistically more fragile.

3.4. *Effects according to prestige of establishments*

Finally, we examine whether there are different discriminatory behaviours depending on the level of prestige of the establishments. According to Neumark, Bank, and Van Nort (1996), it is possible to use the prices charged as an indication (proxy) of their prestige. In Table A3 we compare the non-negative response rates of the six fictitious candidates for establishments in the first and third quartile in our sample. First, we compare the discriminatory practices of campsites, according to the prices they charge. The cheapest 25% do not discriminate significantly, while strong discrimination on all grounds occurs in the most expensive 25%. Hotels, on the other hand, discriminate on the basis of place of residence regardless of pricing. Those with the highest rates also discriminate on the basis of origin. Finally, guesthouses discriminate against young people and women of immigrant background, regardless of the prices charged, and only those with the lowest prices also discriminate on the basis of place of residence.

However, when testing the robustness of these results by controlling by observable characteristics, none of these effects are statistically significant. This specific result can be explained by a power deficit in our tests due to the size of our sample when we reason at such a detailed level. Finally, taking into account the number of stars of the tested establishments does not affect our results.

4. CONCLUSION

This article examines the extent of discrimination in the leisure accommodation industry in France. Our experimental database makes it possible to measure discrimination on the grounds of age, and among young people, on the grounds of sex, supposed origin and reputation of the place of residence. It also enables us to specify whether these results are stable according to the type of accommodation (campsites, hotels and guesthouses) and to the tourist region (Provence, Brittany and Loire region).

Our results, although partial, limited and localized, as are all analyses using the testing method, highlight several statistically robust messages. First, there is strong discrimination regardless of the type and location of accommodation, based on suggested ethnic origin and reputation of the neighborhoods where clients reside. Since ethnic origin is inferred on the basis of the candidate's name, it is not possible to distinguish whether the differences observed are related to the origin or socio-economic status suggested by this name, or even simultaneously to both effects.

Second, discrimination on the basis of clients' gender or age is either insignificant or small, with the exception of guest houses, which tend to exclude young candidates more regularly.

Two types of mechanism can be used to interpret these results. First, managers of leisure accommodation can take into account in their decisions what they believe to be the preferences of their usual clientele. They will refuse a recreational rental to a young person

TABLE I

NUMBER OF ESTABLISHMENTS CONTACTED ACCORDING TO THEIR LOCATION AND THE TYPE OF ACCOMMODATION.

	Provence-Alpes-Côtes d'Azur (PACA)	Loire region	Brittany	Total
Campsites	134	155	144	433
Guesthouses	209	224	214	647
Hotels	145	109	99	353
Total	488	488	457	1,433

Source: Testing TEPP-CNRS, DIAMANT, leisure accommodation market

living in a deprived neighborhood because they have stereotypical beliefs about the social skills of these people and fear that they will inconvenience their clientele. This is a form of customer discrimination such as that highlighted by the well-known study by Neumark, Bank, and Van Nort (1996). Another mechanism is information-based discrimination, akin to that highlighted by Arrow-Phelps. Leisure rental managers refuse some clients because they anticipate a risk of default. They associate living in a deprived area or being of foreign origin with low income and thus lower ability to pay.

Our findings do not allow us to strictly identify the mechanism at work. But most of our results seem to be compatible with the existence of statistical discrimination against supposedly less well-off clients. Discrimination is most pronounced in relation to place of residence in a QPV which is a strong signal of low income. It is less pronounced in campsites where the loss of income for the owner is not as high, but more pronounced in hotels and in Provence where average prices are higher (see Table A5 in the appendix).

Even if it can be justified on economic grounds, discrimination in access to recreational housing, as in many other areas, is an offence in the eyes of the law. It is necessary to combat it through appropriate public action. Our results suggest that awareness-raising among managers of leisure facilities, consisting of reminders of the legal framework, would be useful to limit discrimination. As Edelman, Luca, and Svirsky (2017) indicate in their study on discriminatory practices in AirBnB rentals, it would be useful to promote the development of an ethical guide in the leisure accommodation industry so that professionals become aware of their sometimes unconscious discriminatory behaviour and so that they put in place procedures to remedy these legally reprehensible practices.

Finally, we wish to emphasize that this study tests only formal discrimination in the tourist accommodation market. It would be relevant to reproduce this type of research on a large sample in order to analyse the informal dimension of discrimination in this industry and even extend it to the catering industry.

TABLE II

ATTRIBUTES OF THE 6 FAKE CUSTOMERS

#	First and last names	Address	Age	Gender	Ethnic origin inferred by the surname	Reputation of the neighborhood
A	Christophe LEROY	14 Bd Arago, 75013 Paris	In his forties	Man	French	Neutral
B	Kevin PETIT	137 Av. de la République, 75011 Paris	Less than 25 years old	Man	French	Neutral
C	Laura DURAND	66 Bd du Montparnasse, 75015 Paris	Less than 25 years old	Woman	French	Neutral
D	Désiré SAMBOU	35 Av. du Maine, 75014 Paris	Less than 25 years old	Man	African (non-muslin)	Neutral
E	Florian ROUX	121 Bd Barbès, 75018 Paris	Less than 25 years old	Man	French	Located in Disadvantaged Neighborhood*
F	Grace GOUDIABY	285 Av. Daumesnil, 75012 Paris	Less than 25 years old	Woman	African (non-muslin)	Neutral

Notes: * located in neighborhood labeled Quartier Prioritaire de la politique de la Ville

Comments: Sambou and Goudiaby are family names frequently used in the Diola ethnic group in Senegal. This is a Catholic community whose members most often bear Christian names. The surnames of individuals suggesting French origins are among the most widespread in France; their first names are among the ten most frequently given to newborns during the year of their birth.

To highlight the discrimination linked to the reputation of the place of residence, we also created the profile of a young man of French origin mentioning in his message a residential address located in a Quartier Prioritaire de la politique de la Ville (121 Bd Barbès, 75018 Paris). The QPV are characterized by a significant economic and social development gap with the rest of the urban agglomeration in which they are located.

TABLE III

DISCRIMINATION EFFECTS ASSESSED

Comparison of the rates of success of the individuals in pairs	Effects revealed
Simple effects	
A/B	Age effect for the subpopulation of men with French origin
B/C et D/F	Gender effect for the subpopulation of young individual according their origin
B/D et C/F	Origin effect for the subpopulation of young individual according their gender
B/E	Effect of disadvantaged neighborhood (QPV) for the subpopulation of young men
Cumulated effects	
A/C	Age and gender cumulative effect for the subpopulation of individuals with French origin
A/D	Age and origin cumulative effect for the subpopulation of young men
B/ F	Gender and origin cumulative effect for the subpopulation of young individual
A/E	Age and reputation of the neighborhood cumulative effect for the subpopulation of young men
A/F	Age, gender and origin cumulative effect

TABLE IV

NUMBER AND RATE OF NON-NEGATIVE REPLIES DISTRIBUTION ACCORDING TO THE LOCATION AND THE TYPE OF ACCOMMODATION

	Total	Hotels	Guesthouses	Campsites	Provence	Loire region	Brittany
Total rate of non-negative replies							
At least one non-negative reply to one of the 6 fake customers	87.5	94.6	80.8	91.7	91.6	83.8	87.1
No reply at all	12.5	5.4	19.2	8.3	8.4	16.2	12.9
Rate of non-negative replies for each customer							
Young woman with French sounding name	54.2	58.3	44.5	65.3	55.3	52.9	54.5
Young woman with African sounding name	47.8	56.4	37.3	56.6	54.3	44.9	44.0
Man on in his forties with French sounding name	63.0	63.7	57.3	70.9	71.9	59.5 57.3	
Young man with French sounding name	56.8	63.7	47.1	65.6	68.3	49.0	52.9
Young man with French sounding name located in disadvantaged neighborhood (QPV)	46.3	50.7	34.8	60.0	51.5	39.3 48.4	
Young man with African sounding name	49.3	61.2	37.4	57.3	58.0	38.3	51.7
Number of tested establishments	1,433	353	647	433	488	488	457

Source: Testing TEPP-CNRS, DIAMANT, leisure accommodation market.

TABLE V

DIFFERENCES IN THE RATE OF NON-NEGATIVE REPLIES FOR THE SAME ACCOMMODATION

	Gap in rate of non-negative replies (in % pts)	P-value
Age effect (young versus in his forties)	-6.20***	0.00
for the subpopulation of men with French sounding name		
Gender effect (woman versus man)	-2.03**	0.05
Gender effect (woman versus man)	-2.58*	0.09
for the subpopulation of French sounding name candidate		
Gender effect (woman versus man)	-1.47	0.30
for the subpopulation of African sounding name candidate		
Origin effect (African versus French)	-6.95***	0.00
Origin effect (African versus French)	-7.54***	0.00
for the subpopulation of young men		
Origin effect (African versus French)	-6.43***	0.00
for the subpopulation of young women		
Reputation of the neighborhood (poor reputation versus neutral reputation)	-10.47***	0.00
for the subpopulation of young men with a French sounding name		
Cumulative effects		
Age and gender cumulative effect (young woman versus man in his forties)	-8.80***	0.00
for the subpopulation of individuals with French origin		
Age and origin cumulative effect (young man with African sounding name versus man in his forties with French sounding name)	-13.78***	0.00
Gender and origin cumulative effect (young woman with African sounding name versus young man in his forties with French sounding name)	-9.02***	0.00
Age, gender and origin cumulative effect	-15.20***	0.00
Age and reputation of the neighborhood cumulative effect	-16.69***	0.00

Notes: The Student statistics and the standard deviations have been calculated by the bootstrap method carried out on 10,000 replicates. *** significant at the 1% threshold ** significant at the 5% threshold, *significant at the 10% threshold.

Source: Testing TEPP-CNRS, DIAMANT, leisure accommodation market

TABLE VI

ESTIMATES OF THE PROBABILITY TO RECEIVE A POSITIVE RESPONSE (CLUSTERED BY ESTABLISHMENT)

	Model 1		Model 2	
	Coef.	Sd.	Coef.	Sd.
Young (Yg)	-0.062***	0.015	-0.033**	0.014
African origin (Ao) × Yg	-0.075***	0.016	-0.059***	0.015
Woman (Wo)× Yg	-0.026*	0.015	-0.006	0.014
QPV × Yg	-0.105***	0.015	-0.102***	0.015
Ao × Yg × Wo	0.011	0.022	0.002	0.020
Owner's gender (ref: unknown or mixt)				
Man			0.209***	0.027
Woman			0.180***	0.019
Accommodation location (ref : Brittany)				
Provence			0.053**	0.024
Loire region			-0.034	0.022
Type of accommodation (ref: Campsites)				
Guesthouses			-0.207***	0.020
Hotels			-0.068***	0.023
Standard level				
Four stars and more			0.027	0.023
Price in the higher quartile			0.039*	0.021
Sending order (ref: rank 1)				
Rank 2			-0.020	0.014
Rank 3			-0.114***	0.015
Rank 4			-0.214***	0.015
Rank 5			-0.262***	0.016
Rank 6			-0.321***	0.015
Origin of advertisement (ref: Futé)				
Michelin			0.086***	0.031
Pages jaunes			0.055	0.036
Routard			-0.011	0.022
Constant	0.630***	0.013	0.825***	0.033
F Statistic	31.65***		61.26***	
Akaike information criterion	12,347		11,124	
R2	0.0134		0.1477	

Notes: QPV: Quartier Prioritaire de la politique de la Ville, which is a particularly deprived neighborhood. LYg: Young candidate:less than 25 years old. Ao: African origin. Fe: Female. PACA: Provence-Alpes-Côte d'Azur Region (South East of France). LR: Loire Region (West of France).

Standard errors are clustered at the accommodation level. *** significant at the 1% threshold ** significant at the 5% threshold, *significant at the 10% threshold.

Source: Testing TEPP-CNRS, DIAMANT, leisure accommodation market

Figure 1: Simple and cumulative discrimination effects according the location and the type of accommodation

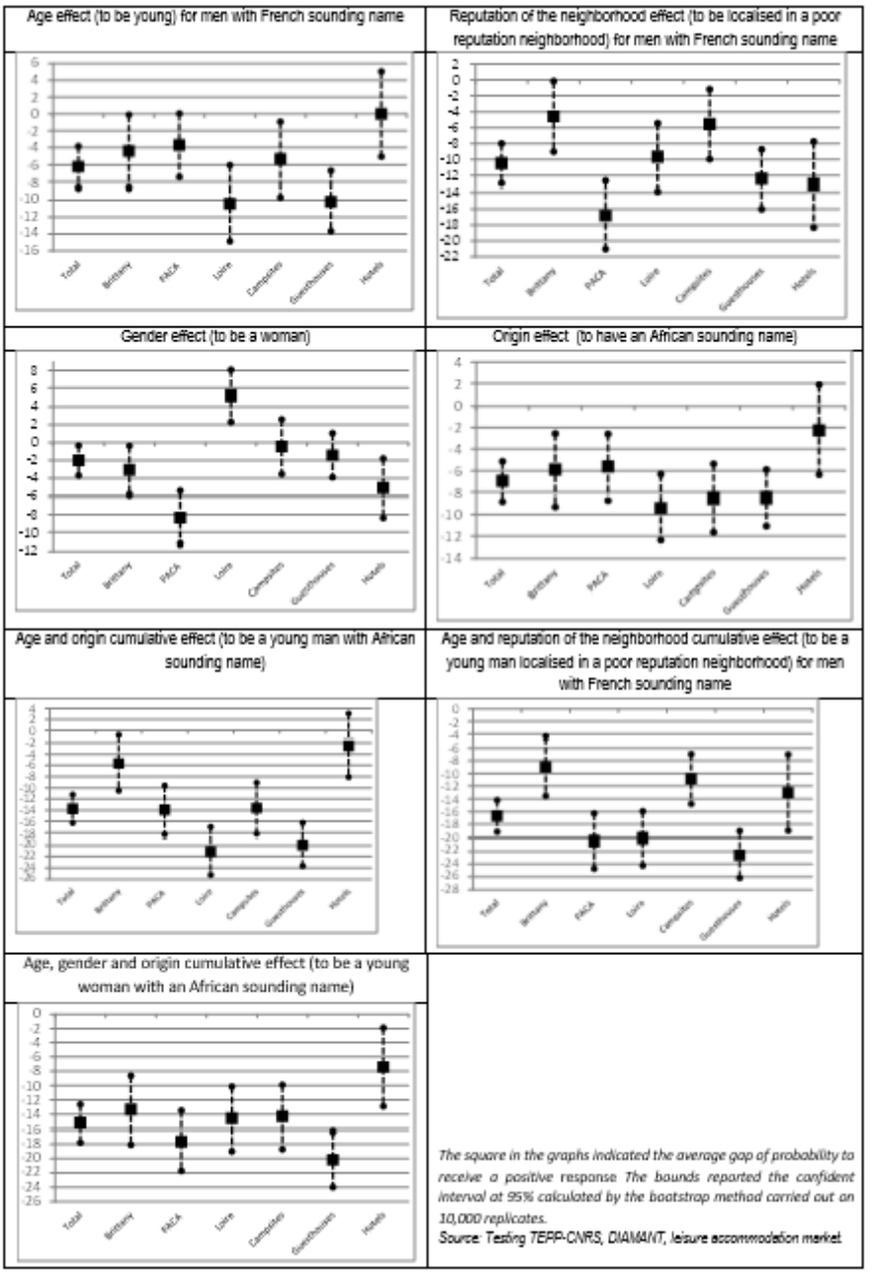


TABLE VII

NUMBER AND RATE OF NON-NEGATIVE REPLIES DISTRIBUTION ACCORDING TO THE LOCATION AND THE TYPE OF ACCOMMODATION

	Model 2		Model 3		Model 4	
	Coef	Sd	Coef	Sd	Coef	Sd
Customers' attributes						
Young (Yg)	-0.033**	0.014	-0.019	0.023	-0.012	0.025
African origin (Ao) × Yg	-0.059***	0.015	-0.059***	0.015	-0.059***	0.015
Female (Fe) × Yg	-0.006	0.014	-0.005	0.014	-0.019	0.021
QPV × Yg	-0.102***	0.015	-0.068***	0.023	-0.075***	0.025
Ao × Yg × Fe	0.002	0.020	0.001	0.020	0.001	0.02
Crossed variables						
GH× Yg		-0.066**	0.027	-0.078***	0.029	
H × Yg		0.059*	0.032	0.052	0.035	
GH × QPV × Yg		-0.042	0.027	-0.030	0.030	
H × NDR × Yg		-0.059*	0.032	-0.052	0.035	
GH × Fe × Yg				0.014	0.027	
H × Fe × Yg				0.024	0.023	
Types of accommodation (ref: campsites)						
Guesthouses (GH)	-0.207***	0.020	-0.149***	0.028	-0.152***	0.028
Hotels (H)	-0.068***	0.023	-0.109***	0.033	-0.103***	0.033
Others control variables	YES		YES		YES	
F Statistics	61.26***		53.45***		51.47***	
Akaike information criterion	11,124		11,115		11,114	
R2	0.1477		0.1494		0.1496	

Notes: QPV: Quartier Prioritaire de la politique de la Ville, which is a particularly deprived neighborhood. QPV: Located in Disadvantaged Neighborhood. Yg: Young candidate:less than 25 years old. Ao: African origin. Fe: Female. PACA: Provence-Alpes-Côte d'Azur Region (South East of France) LR: Loire Region (West of France). Others control variables: Quartile of prices per establishment type (4 categories), Stars and-label (2 categories) Origin of advertisement (2 categories), rank of the candidates and host's gender (see Table VI model 2).
Standard errors are clustered at the accommodation level. *** significant at the 1% threshold ** significant at the 5% threshold, *significant at the 10% threshold.
Source: Testing TEPP-CNRS, DIAMANT, leisure accommodation market.

APPENDIX A: ADDITIONAL RESULTS

TABLE A1

DISTRIBUTION OF THE RATE OF NON-NEGATIVE REPLIES FOR THE 6 FAKE CANDIDATES ACCORDING THE LOCATION AND THE TYPE OF ACCOMMODATION.

	Total	Hotels	Guesthouses	Campsites	Provence	Loire region	Brittany
Number of non-negative replies (in %)							
1	12.8	10.5	16.3	10.1	9.4	16.6	12.6
2	18.3	17.7	25.2	9.6	15.7	21.3	18.1
3	16.7	15.0	18.5	15.6	15.4	14.7	20.1
4	16.9	18.9	15.7	16.9	16.8	17.4	16.6
5	16.6	20.1	11.1	20.9	18.3	14.4	16.8
6	18.8	18.0	13.2	27.0	24.4	15.6	15.8
At least 1	87.5	94.6	80.8	91.7	91.6	83.8	87.1
Rate of non-negative replies per candidate (in %)							
Young woman with French sounding name	54.2	58.3	44.5	65.3	55.3	52.9	54.5
Young woman with African sounding name	47.8	56.4	37.3	56.6	54.3	44.9	44.0
Man on in his forties with French sounding name	63.0	63.7	57.3	70.9	71.9	59.5	57.3
Young man with French sounding name	56.8	63.7	47.1	65.6	68.3	49.0	52.9
Young man with French sounding name located in disadvantaged neighborhood	46.3	50.7	34.8	60.0	51.5	39.3	48.4
Young man with African sounding name	49.3	61.2	37.4	57.3	58.0	38.3	51.7
Gap (in % points) in non-negative replies in comparison with the young man with French sounding name							
Young woman with French sounding name	-2.6*	-5.4*	-2.6	-0.3	-12.9***	4.0	1.5
Young woman with African sounding name	-9.0***	-7.4**	-9.8***	-9.02***	-14.0***	-4.1	-9.0***
Man on in his forties with French sounding name	+6.2***	+0.01	+10.2***	+5.34**	+3.7	+10.5***	+4.4*
Young man with French sounding name	-10.5***	-13.1***	-12.4***	-5.55**	-16.8***	-9.6***	-4.6*
Young man with French sounding name located in disadvantaged neighborhood	-7.5***	-2.6	-9.75***	-8.30***	-10.3***	-10.7***	-1.3

Notes: The Student statistics and standard deviations have been calculated by the bootstrap method carried out on 10,000 replicates. *** significant at the 1% threshold ** significant at the 5% threshold, *significant at the 10% threshold.
Source: Testing TEPP-CNRS, DIAMANT, leisure accommodation market.

TABLE A2

DISTRIBUTION OF THE RATE OF NON-NEGATIVE REPLIES FOR THE 6 FAKE CANDIDATES ACCORDING TO THE NON-NEGATIVE NUMBER OF REPLIES OF THE ESTABLISHMENT

	Rate of non-negative replies		Conditional rate of non-negative replies according the non-negative number of replies of the establishment											
			1		2		3		4		5		At least 1	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Young woman with French sounding name	777	54.2%	27	16.9%	74	32.3%	107	51.2%	147	69.3%	186	89.4%	777	62.0%
Young woman with African sounding name	685	47.8%	12	7.5%	59	25.8%	75	35.9%	141	66.5%	162	77.9%	685	54.6%
Man on in his forties with French sounding name	903	63.0%	54	33.8%	121	52.8%	145	69.4%	160	75.5%	187	89.9%	903	72.0%
Young man with French sounding name	814	56.8%	31	19.4%	86	37.6%	130	62.2%	146	68.9%	185	88.9%	814	64.9%
Young man with French sounding name located in disadvantaged neighborhood	664	46.3%	10	6.3%	58	25.3%	81	38.8%	122	57.5%	157	75.5%	664	53.0%
Young man with African sounding name	706	49.3%	26	16.3%	60	26.2%	89	42.6%	132	62.3%	163	78.4%	706	56.3%
Number of establishments	1,433		160		229		209		212		208		1,254	

Source: Testing TEPP-CNRS, DIAMANT, leisure accommodation market.

TABLE A3

DISTRIBUTION OF THE RATE OF NON-NEGATIVE REPLIES FOR THE 6 FAKE CANDIDATES ACCORDING THE PRICES PROPOSED BY THE ESTABLISHMENTS

	Law prices				High prices			
	Total	Hotels	Guesthouses	Campsites	Total	Hotels	Guesthouses	Campsites
Rate of non-negative replies								
Young woman with French sounding name	53.2	50.6	44.9	67.8	56.7	66.6	43.5	67.0
Young woman with African sounding name	45.0	49.5	33.2	59.3	53.8	64.2	41.3	62.8
Man on in his forties with French sounding name	58.5	57.8	51.7	69.5	69.9	77.3	64.5	71.2
Young man with French sounding name	50.9	54.6	40.5	63.5	65.8	73.8	51.4	79.8
Young man with French sounding name located in disadvantaged neighborhood	40.5	43.4	26.9	58.5	53.8	58.3	45.5	61.7
Young man with African sounding name	47.3	55.6	36.6	56.7	56.0	61.9	47.2	63.9
Gap (in % points) in non-negative replies in comparison with the young man with French sounding name								
Young woman with French sounding name	+2.3	-4.2	+4.5	+4.2	-9.2*	-7.2	-8.0	-12.8**
Young woman with African sounding name	-5.9	-5.3	-7.3*	-4.2	-12.0	-9.6	-10.1**	-17.1***
Man on in his forties with French sounding name	+7.6	3.2	11.2***	5.9	4.1	3.5	13.1***	-8.4*
Young man with French sounding name	-10.4**	-11.5*	-13.5***	-5.0	-12.0**	-15.5**	-5.8	-18.2***
Young man with French sounding name located in disadvantaged neighborhood	-3.6	1.1	-3.9	-6.8	-9.8**	-11.9*	-4.2	-16.0***

Notes: The Student statistics and standard deviations have been calculated by the bootstrap method carried out on 10 000 replicates. *** significant at the 1% threshold ** significant at the 5% threshold, *significant at the 10% threshold.
Source: Testing TEPP-CNRS, DIAMANT, leisure accommodation market.

TABLE A4

CHARACTERISTICS OF TESTED ESTABLISHMENTS

	Rate of non-negative replies	Tested establishments Number	%
Quality level			
Stars and-label			
None	77.5	302	21.1
Some label of quality	76.6	443	9.8
From 1 to 3 stars	91.8	1221	54.3
Up to 4 stars	93.4	1433	14.8
Accommodation facilities (catering services, parking, Wifi, swimming pool)			
Law	81.6	337	23.5
Intermediate	88.1	427	29.8
High	89.1	494	34.5
Very high	93.1	175	12.2
Location Near the down-town or the beach (inf 10km) 92.8	363	25.3	
Prices*			
Unknowed	100.0	10	0.7
Low prices (<Q1)	84.3	383	26.7
Intermediate (Q1-Q2)	85.1	388	27.1
High (Q2-Q3)	89.9	336	23.5
Very high (>Q3)	91.5	316	22.1
Owner's characteristics			
Gender Female	92.9	687	47.9
Male	95.1	101	7.1
Unknown	80.6	645	45.0
Origin of advertisement			
Futé 88.4%	320	22.3%	
Michelin	93.9%	163	11.4%
Pages jaunes / hors guide	89.4%	132	9.2%
Routard	85.6%	818	57.1%
Total	87.5%	1,433	100.0%

Notes: * The rank of the prices is computed for each type of accommodation: campsites, hotels and guesthouses.

Source: Testing TEPP-CNRS, DIAMANT, leisure accommodation market.

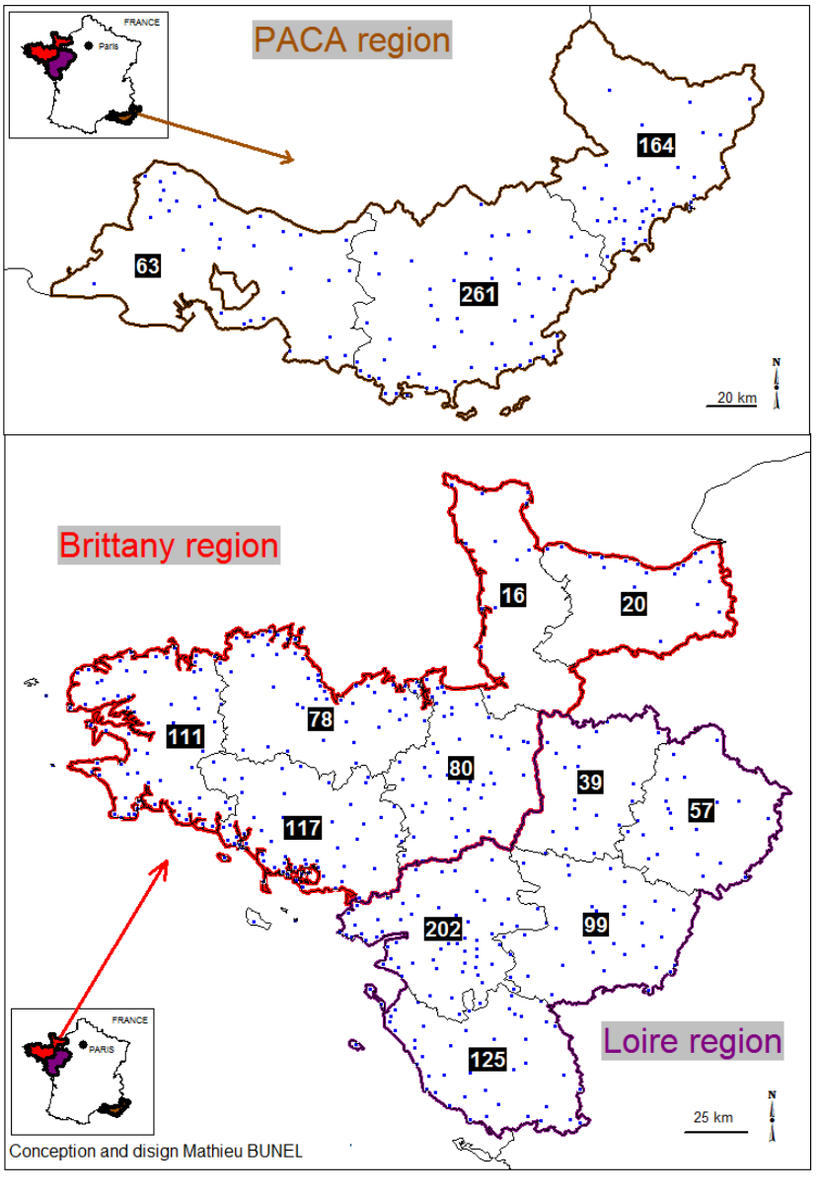
TABLE A5

SELECTION FINANCIAL LOSS ANALYSIS

		Campsites	Guesthouses	Hotels
Selective establishments*	N	1,710	2,712	1,632
	Average price	20,6 €	78,9 €	80,0€
	Financial loss due to selection **	70,3€	219,7€	271,2€
Non- selective establishments	N	852	1,158	474
	Average price	21,5€	74,1€	86,0€

Notes: * establishments which do not give the same response to all applications; ** The average loss is obtain by multiplying the number of candidates without answer by the price of the service. For 60 establishments the price information is not available.
Reading: each time a selective campsite rents a place at an average price of €20.6, it gives up the equivalent of €70.3 by refusing other applicants.
Source: Testing TEPP-CNRS, DIAMANT, leisure accommodation market.

Figure A1: Location of tested establishments



Notes: The figures provide the number of tested establishments in every county. Each point identifies the location of the tested establishments. Source: Testing TEPP-CNRS, DIAMANT, leisure accommodation market

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