

# Has France a Problem with Muslims?

## Evidence from a Field Experiment in the Labour Market.

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### **Abstract**

Relying on a correspondence study conducted in France before the 2015 attacks, this paper compares the callback rates of Muslim and Christian immigrants of the same national origin whose religiosity varies, from non-religious to religious. Based on responses to over 6,200 job ads, the results reveal an insignificant disadvantage for Muslims when they are not religious. However, Muslims further lose ground when they stress their religiosity, while the reverse occurs for Christians. Consequently, religious Muslims must submit twice as many applications as religious Christian before being called back by the recruiters.

*Keywords:* Islam, France, Discrimination, Labour market, Correspondence study.

*JEL:* A12, C90, D03, J15, J71, Z12.

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The fact that there is a problem with Islam is true. Nobody doubts that.

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French President F. Hollande, in  
*A President Shouldn't Say That*  
(October 12, 2016)

## 1 Introduction

Since January 2015, France has been suffering a wave of Islamic violence that is more intense and lethal than any other seen in the west following the 9/11 attacks.<sup>1</sup> It would be misleading to explain this French exception by the lower education and employment rate that, on average, characterize France's nearly 5 million Muslims (Aeberhardt et al. (2010) and Aeberhardt, Coudin and Rathelot (2017)). There is indeed growing and consistent evidence that uneducated or impoverished people are *not* more likely to support or engage in terrorist activity than better-educated or higher-income individuals (e.g. Krueger (2008), Blattman and Ralston (2015)).

But a consensus has been emerging among experts on radical Islam in France<sup>2</sup> and beyond<sup>3</sup> that anti-Muslim discrimination works as a catalyst in the radicalization process. This view was clearly expressed by French President Emmanuel Macron in the aftermath of the Paris attacks of November 13, 2015: “Discrimination is not the main cause of jihadism – that is down to the madness of men, and the totalitarian and manipulating spirit of certain people. But it provides a fertile ground”.<sup>4</sup>

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<sup>1</sup>From 7 January 2015 to 9 January 2015, terrorist attacks killed a total of 17 people in four shootings (including the shooting at the headquarters of the satirical newspaper *Charlie Hebdo* and at the Hypercacher kosher supermarket). In November 2015, a series of coordinated terrorist attacks killed 130 people. In July 2016, a truck was deliberately driven into crowds celebrating Bastille Day on the Promenade des Anglais in Nice, thereby killing 86 people. These three series of attacks led to a total of 233 deaths and 824 injured people.

<sup>2</sup>For instance, Khosrokhavar (2016) insists on Muslims’ “economic and social exclusion” that makes them “prime targets for jihadist propaganda”. Even Gilles Kepel and Olivier Roy, known to quarrel on whether France is facing a “radicalization of Islam” (Kepel) or an “Islamization of radicalism” (Roy) provide convergent views on the important role of anti-Muslim discrimination. Kepel (2015) acknowledges that the Salafi dynamic from abroad is most likely to spread among French Muslims who endure discrimination. And Roy (2016) points out that the generational revolt by a very specific category of Muslim youth (mainly second-generation Muslim immigrants) flows from their anger of seeing their parents’ religion being marginalized in France: “they are reclaiming, on their own terms, an identity that, in their eyes, their parents have debased”.

<sup>3</sup>Verwimp (2016) shows that the economic exclusion of Muslims is correlated with radical Islam in European countries.

<sup>4</sup>This remark was uttered in French on November 21, 2015 when Emmanuel Macron was the French Minister of Economy, Industry and Digital Affairs. Excerpts from the speech are available at <https://www.theguardian.com/world/2015/nov/22/unpopular-francois-hollande-modest-poll-boost-paris-attacks> (last accessed on May 20, 2017).

It is striking that all these accounts assume that Muslims *qua* Muslims are discriminated against in France, although this surmise has not been thoroughly tested yet. This paper aims to fill the gap by exploring whether Muslims are unfairly treated *in their access to employment*. Failure to integrate in the labour market has indeed been shown to compromise integration broadly speaking, by notably engendering criminal behavior (Fougère, Kramarz and Pouget (2009)) and unhappiness (Hetschko, Knabe and Schöb (2014)).

Identifying anti-Muslim hiring discrimination constitutes a challenge for two reasons. First, it requires disentangling a religious culture effect from a geographic origin effect.<sup>5</sup> Save for Albania, Muslim-majority countries are located outside of Christian-majority regions. Individuals originating from Muslim-majority countries may therefore activate a particularly intense xenophobic feeling among the host populations in these regions. Isolating a Muslim effect also entails addressing an additional confounding factor: religiosity. Relying on the World Values Survey, Fish (2011) shows that the average Muslim respondent worldwide attaches more importance to God than the average Christian respondent, a general finding that is confirmed when attention is restricted to France (Brouard and Tiberj (2011) and Adida, Laitin and Valfort (2016a)). Yet, no study to date has disentangled a Muslim effect from a religiosity effect. This paper is the first to fill this gap.

More precisely, to identify anti-Muslim discrimination, this paper compares the callback rates of fictive applicants of Christian and Muslim culture who are identical in every respect save the religion they grew up in (*Islam vs Christianity*). Notably, for only religion to be at play, the national origin of the applicants is held constant: they emigrated from a country widely known for its religious pluralism and for the first time used to identify anti-Muslim discrimination, Lebanon. Additionally, the experimental setup randomizes the religiosity of the applicants in adulthood (*non-religious vs religious*), on top of their gender (*female vs male*) and quality (*good vs outstanding*).

The results reveal that Muslims *qua* Muslims are discriminated against in France: the callback rate of applicants of Muslim culture (11.7%) is 6.7 percentage points lower than that of their Christian

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<sup>5</sup> As an illustration, a plethora of correspondence studies (see Jowell and Prescott-Clarke (1970)) have revealed that nationals with Muslim North African or Middle Eastern sounding first and last names face strong hiring discrimination as compared to nationals with no recent immigrant background in Christian-majority countries (e.g. Booth et al. (2012) in Australia, Baert et al. (2015) in Belgium, Oreopoulos (2011) in Canada, Duguet et al. (2010) in France, Kaas and Manger (2012) in Germany, Blommaert et al. (2013) in the Netherlands, Carlsson and Rooth (2007) in Sweden, Widner and Chicoine (2011) in the US). Yet, these correspondence studies fail to isolate a Muslim effect. Consider the correspondence study conducted by Duguet et al. (2010). The name of the “minority” candidate, “Yassine Mokraoui”, sends to the recruiter two pieces of information: the applicant’s region of origin (North Africa) and the applicant’s religious culture (Islam). Therefore, differences in callback rates between Yassine Mokraoui and Clément Meunier (the native) cannot be attributed to differences in religion only. They may also reflect that these applicants differ with respect to geographic origin.

counterparts (18.4%). But this general finding masks substantial variation along religiosity, gender and quality. Although non-religious Muslims show consistently lower callback rates than non-religious Christians (12.9% vs 16.1%), this difference is modest and not statistically significant. But Muslims further lose ground when they stress their religiosity, unless they show an outstanding profile. This “religiosity penalty” leads religious Muslims to be discriminated against relative to non-religious Christians. This gap further widens when religious Muslims are compared to *religious* Christians. While the signal of religiosity constitutes a penalty for Muslims, it works as a premium for Christians: their callback rate is boosted when they are religious, in contexts where their application may not be fully reassuring to the recruiters. Consequently, religious Muslims must submit twice as many applications as religious Christians before being called back by the recruiters. This result is largely driven by male applicants, due to the strong “religiosity premium” experienced by Christian men: the callback rate of religious Muslim men (4.9%) is nearly four times lower than that of their Christian counterparts (17.9%).

These findings suggest that anti-Muslim hiring discrimination is statistical: recruiters discriminate against religious Muslims unless they are outstanding. This pattern is consistent with religious Muslims being associated to a risk of problematic behavior in the workplace that leads to discrimination when the quality of their CV is not sufficient to counterbalance this risk. By contrast, and consistent with the fact that stereotypes are context dependent (Bordalo et al. (2016)), the signal of religiosity helps Christians convince the recruiters. But additional results indicate that anti-Muslim discrimination is also likely taste-based outside the hiring process. More precisely, focusing on recruiters’ behavior toward applicants *once* they have made the choice of *not* hiring them reveals that applicants of Muslim culture are less likely to be notified of a negative response. Moreover, the tone of the negative response, when notified, is less affable to them.

Anti-Muslim hiring discrimination is robust to alternative measures of the callback rate and religiosity. It is also robust to taking into account the possibility that recruiters hold different beliefs not only on the mean but also on the variance of Christians’ and Muslims’ unobserved productivity (Heckman and Siegelman (1993) and Neumark (2012)). Finally, data on fictive applicants of Jewish culture reveal that the disadvantage experienced by applicants of Muslim culture *does* capture a Muslim effect and not just a religious minority effect.

To date, five correspondence studies have sought to isolate a Muslim effect. But their features either introduce new confounds or provide a measure of religious discrimination that remains partial. More precisely, in the field experiments conducted by Wright et al. (2013), Wallace, Wright Hyde

(2014) and Acquisiti and Fong (2015) in the US, the fictive applicants whose religious affiliation is randomized bear first names or last names that are typically Anglo-Saxon (the associated last names and first names being not readily identifiable with a particular religion or ethnicity). In other words, these candidates signal no recent immigrant background. It is therefore a possibility that those who report a Muslim faith are perceived as converts. In this context, differences in callback rates across Christian and Muslim candidates might not only reflect differences in their religious affiliation, but also differences in the way they affiliated (family transmission *versus* conversion). There is indeed tentative evidence that Muslim converts are more likely to radicalise than those people who were born Muslims (e.g. Kleinmann (2012)).

To avoid this “religious conversion” confound, it is important to involve fictive Christian and Muslim candidates who emigrated from a region with *historic* Christian and Muslim populations. Adida, Laitin and Valfort (2010) as well as Pierné (2013) follow this approach, by focusing on French citizens of Senegalese and North African origin respectively. But none of these previous studies analyzes how anti-Muslim discrimination varies with applicants’ religiosity.

This paper departs from previous studies in at least five ways. First, it aims to provide a comprehensive analysis of the Muslim effect by randomizing its two components: (i) the religion they grew up in; (ii) their religiosity in adulthood. More precisely, this paper uses *real* associations that *all* disclose information on the level of religiosity of the applicant (from non-religious to religious), for *both* candidates of Christian and Muslim culture. Put differently, the experimental setup allows disentangling a “Muslim by culture but not religious practice” effect (comparing the callback rates of non-religious adults who were born in a Muslim *versus* Christian family), from a “Muslim by culture and religious practice” effect (comparing the callback rates of Muslims *versus* Christians who practice the religion they inherited from their parents).<sup>6</sup>

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<sup>6</sup>By contrast, Adida, Laitin and Valfort (2010) do not vary the religiosity in adulthood of the applicants of Christian and Muslim culture: both are involved in a *religious* association in adulthood. Pierné (2013) goes a step further by introducing, on top of applicants of North African background involved in a Christian or Muslim association, candidates with North African roots who are engaged in an association that reveals no information on their religiosity. He shows that these latter candidates (who are surely perceived by recruiters as being of Muslim culture since North Africa is a Muslim-majority region) have a 50% higher chance of being invited to a job interview than are their counterparts engaged in a Muslim association. However, this result does not necessarily mean that applicants of Muslim culture are penalized when they stress their religiosity. Rather, this finding may reflect that disclosing one’s religiosity in a job application is seen as inappropriate, irrespective of the candidate’s religious denomination (see Weichselbaumer (2016) for another illustration of this confound). Another concern resides in that the Muslim association chosen by Pierné (2013) is fictitious. It is therefore impossible to surmise the level of religiosity that recruiters attach to this association, which leaves the difference in callback rates between the religious and the “secular” applicant of Muslim culture difficult to interpret. Finally, Pierné’s experimental setup does not include “secular” applicants of North African background and Christian culture. The religiosity effect among applicants of Muslim culture therefore cannot be compared to what this effect would be among applicants of Christian culture.

The second dimension that this paper seeks to improve upon is related to gender. Adida, Laitin and Valfort (2010) restrict their attention to female candidates, while Pierné (2013) concentrates on male applicants. By contrast, this paper is the first to include both male and female applicants and, hence, address whether anti-Muslim discrimination (if any) varies with gender. Third, the previous studies do not randomize the quality of the fictive job applications, thereby limiting the exploration of whether anti-Muslim hiring discrimination is statistical. Fourth, this correspondence study is the first to test for taste-based discrimination outside the hiring process by analyzing the probability that the recruiters notify their negative response as well as the tone of this negative response. Fifth, this paper is unique by including fictive applicants of Jewish culture in order to disentangle whether anti-Muslim discriminated is directed at Muslims *qua* Muslims or at any religious minority.

The paper proceeds as follows. Section 2 provides some background on why French recruiters would discriminate against Muslim applicants. Section 3 describes the experimental setup. Section 4 presents the main findings. Section 5 provides robustness checks. Finally, Section 6 concludes and highlights avenues for future research.

## 2 Background

Why would French recruiters discriminate against Muslim applicants? According to economic theory, anti-Muslim discrimination could be taste-based (Becker (1957)) and/or statistical (Phelps (1972), Arrow (1973), Aigner and Cain (1977)). Taste-based anti-Muslim discrimination refers to a situation in which employers, workers and/or consumers host a weaker taste (or stronger distaste) toward Muslims than toward a reference group. This unequal treatment is irrational to the extent that it unfolds irrespective of Muslims' productive characteristics. As such, it should be directed indifferently at any person who is perceived as Muslim.

Anti-Muslim taste-based discrimination in France is much expected, given human beings' tendency to irrationally favour their ingroup over their outgroup (see the seminal papers of Tajfel (1970), Billig and Tajfel (1973) or Locksley, Ortiz et Hepburn (1980) and the more recent studies of Chen and Li (2009) or Currarini and Mengel (2016)). Although secularization has yielded a continuous decrease in their proportion among the French population, Christians (who are overwhelmingly Catholic in France) still account for a majority: according to IFOP (2010), individuals who self-identify as Catholic stand for 64% of the French population in 2010 (as opposed to 81% in 1952), the remainder of the population being broken down between those with no religion (28%), who mainly

are of Catholic root, and those with other religions (8%). Put differently, Christians constitute an ingroup and Muslims an outgroup for a majority of French citizens.

But anti-Muslim discrimination can be statistical as well. Statistical discrimination emerges due to a lack of precise information about candidates' productivity. In this context, recruiters rely on their beliefs about how unobserved productive individual characteristics correlate, on average, with group membership. When the recruiters' beliefs are correct, this approach leads to discriminating against atypical members of the disadvantaged groups, i.e. those members who are more productive than members of the advantaged group. When these beliefs are wrong, this risk calculation leads to discriminating against all members of the disadvantaged groups.

Survey-based evidence suggests that anti-Muslim statistical discrimination is at work. Such discrimination would flow from recruiters' beliefs that religiosity increases the risk of transgressive behaviour in the workplace when it emanates from Muslims rather than from Christians. According to Harris Interactive (2013), only 26% of a representative sample of French respondents hold a “very good” or “quite good” image of Islam, compared to 69% for Catholicism. This difference is mainly driven by a large majority of interviewees (63%) considering that “Islamic practice is not compatible with French Republican laws”.

### 3 Experimental setup

The experimental setup implements the good practices set by earlier correspondence studies with respect to (i) creating the fictitious applications, (ii) responding to job ads, and (ii) measuring recruiters' responses (e.g. Bertrand and Mullainathan (2004), Lahey (2008), Oreopoulos (2011), Kroft et al. (2013), Eriksson and Rooth (2014), Bartos et al. (2016), Deming et al. (2016) or Neumark, Burn and Button (2016)). It is unique, however, in its way of devising the “religious culture” treatment and the “religiosity” treatment given that no previous study has tried to disentangle their effects. Moreover, the experimental setup departs from previous research by *not* implementing a matched-pairs design, whereby multiple types of applications are sent to the same job ad. Matched pairs obviously allow for reaching sufficient power with a smaller pool of job postings. Yet, this approach comes with several drawbacks (Lahey and Beasley (2016)). Notably, it entails a risk of detection by the recruiters and, thus, of bias in the way they deal with the applicants.<sup>7</sup> Moreover,

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<sup>7</sup>In the case of detection, the recruiters may respond more favorably to the minority applicants than they otherwise would for fear of “naming and shaming”. Consequently, discrimination would be underestimated.

matched pairs avoid creating exactly symmetric applications across treatments. Finally, matched pairs exacerbate the ethical concerns associated with correspondence studies since they make greater use of employers' time without their consent.

### 3.1 Creating the fictitious applications

In order to produce a set of realistic applications, the general template used in this correspondence study derives from resumes of actual job seekers downloaded on the website of Pôle Emploi, the French national employment agency. The scope of the study is restricted to accounting clerk jobs and accountant jobs for two reasons. First, the accountancy sector is known<sup>8</sup> to show low sensitivity to economic recession, an important condition for the success of a correspondence study in a period of economic downturn (since, otherwise, the callback rates might not have risen much above zero for any of the applicants). Second, accountancy jobs are relevant for a wide range of economic sectors, thereby increasing the external validity of the results.

The applicants are between 25 and 26 at the time of the correspondence study. They obtained their senior high school diploma (*Baccalauréat*) in the field of management science and technology (*STG, Sciences et Technologies de la Gestion*) from the senior high school *Emile Dubois* in the 14th district of Paris. The accountants earned a technical degree taken at end of two-year higher education course (*BTS, Brevet de technicien supérieur*) in accountancy and organizational management (*CGO, Comptabilité et gestion des organisations*), while the accounting clerks show a certificate qualifying them for the position of “managerial assistant in small and medium-sized business and industry” (*Assistant(e) de gestion PME/PMI*). The applicants have each had about four years of work experience, which they got in Paris and the surrounding region (the Ile-de-France) by working on successive fixed-term contracts varying in length from six to 18 months.<sup>9</sup>

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<sup>8</sup>As an illustration, here is what could be read on French recruitment websites or in French economic newspapers at the time when the correspondence study was conducted: “Against a gloomy economic backdrop and rising unemployment, the auditing, accountancy, and finance sector is experiencing stable recruitment. A small rise in intentions to hire, 4%, was even observed for 2013. Supply remains steady, and applicants do not have trouble finding jobs.” (Source: “Audit, compta, finance: Des métiers qui ne connaissent pas la crise,” on regionsjob.com, last accessed on January 24, 2017). See also Vincent Bouquet, “La finance et la comptabilité d’entreprise recrutent toujours,” in *Les Echos* (October 16, 2014): “Every business has to keep track of its accounts, control its costs, and steer its financial performance,’ notes the recruiting firm [Robert Half] to explain the resilience of the labor market in finance and accountancy.”

<sup>9</sup>The maximum duration for a fixed-term contract (*CDD, contrat à durée déterminée*) is 18 months. Source: “Quelle peut être la durée maximale d’un CDD?”, site vosdroits.service-public.fr, last accessed on January 24, 2017.

## 3.2 The treatments

In order to identify a “Muslim by culture” effect, the applicants are identical in every respect save their religious culture. Notably, they show the same national origin: they were born Lebanese citizens in Beirut in 1988. As an illustration of this common national origin, all the candidates bear the same last name: “Haddad,” which means “blacksmith” in Arabic. This last name is as common in Lebanon as the surname “Smith” is in the English-speaking world, and it may be borne indifferently by a Christian or a Muslim.

The fictive applicants arrived in France at the start of senior high school (*lycée*) in 2003 and acquired French citizenship in 2008. The latter information reveals their good integration. In addition to conditions concerning the age of the applicants and their period of residency in France (conditions that are all fulfilled by the fictive candidates), naturalization indeed requires that the applicants are proficient in French. Moreover, they must show a good knowledge of French history and culture, as well as of the rights and duties of French citizens. Finally, applicants must have demonstrated their loyalty toward French institutions.<sup>10</sup>

The experimental setup randomizes three characteristics, on top of applicants’ religious culture: their religiosity in adulthood (non-religious *vs* religious), their gender (female *vs* male), and their quality (good *vs* outstanding). The sections below describe these four treatments.

### 3.2.1 The “religious culture” treatment

The “religious culture” treatment consists of randomizing the religion the applicants grew up in. Two pieces of information are manipulated to convey this culture. First, the applicants’ first names, based on the Name Frequency Dataset (*Fichier des prénoms*) managed by the French national institute of statistics and economic studies (*Institut national de la statistique et des études économiques (INSEE)*). This dataset uses birth certificates to calculate, for each first name and each year since 1946, the number of babies who were registered with this first name. This information permits identifying, for each gender, the five most frequent Christian and Muslim first names.<sup>11</sup> One first name among this top five is then randomly selected to produce distinctively Christian and Muslim identities: “Michel” and “Nathalie” for Christians, and “Mohammed” and “Samira” for Muslims are

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<sup>10</sup>See “Naturalisation par décret” (<http://www.prefecturedepolice.interieur.gouv.fr/>, last accessed on January 24, 2017).

<sup>11</sup>A Christian first name is defined as a first name of Hebrew or Latin origin that has become common in France, i.e. that is part of the French Christian culture. A Muslim first name is defined as a first name of Arabic origin.

the result of this random draw.<sup>12</sup>

The second piece of information used to convey the religious culture of the applicants relates to the religious denomination of the junior high school (*collège*) from which they graduated in Beirut. Michel and Nathalie obtained their middle-high-school diploma (*brevet*) at the “private bilingual French-Arab Catholic secondary school Notre-Dame-de-Nazareth (Beirut)” while Mohammed and Samira did so at the “private bilingual French-Arab Muslim secondary school Amilieh (Beirut).” Of course, these establishments are *real* junior high schools in Lebanon.<sup>13</sup>

Stressing that *both* the Christian and the Muslim applicants went to a distinguished French-Arab bilingual school allows annihilating one potential source of statistical discrimination against Muslims: recruiters’ beliefs that Christians are more proficient in French (i) because of their schooling in Christian establishments in Lebanon where French is more likely to be used for teaching purposes, and (ii) because of their frequentation in France of Christian places of worship where French is more likely to be the language of prayer than it is in mosques. It is important to note that the mastery of French by the Christian and Muslim applicants is emphasized not only in their CV, but also in their letters of application where recruiters read: “I wish to stress that although I was born Lebanese of Lebanese parents, I command French perfectly, having been schooled in Lebanon up until the time I arrived in France (at the start of senior high school) in establishments that were bilingual in French and Arabic.”

### 3.2.2 The “religiosity” treatment

The “religiosity” treatment consists of randomizing the type, either non-religious or religious, of the scouting association in which the applicants are engaged as educators. This information appears under the heading “outside interests” in their CV. More precisely, the CV of the religious applicants stresses that Michel and Nathalie “train young people in the *Catholic* scouting association *Scouts and Guides of France*<sup>14</sup>,” and that Mohammed and Samira do so in “the *Muslim* scouting association *Muslim Scouts of France*<sup>15</sup>. ” By contrast, the CV of the non-religious applicants indicates that they are engaged in the “*laïc* [a synonym for “non-religious” in French] scouting association *Girl and*

<sup>12</sup>The top 5 for (i) Christian male first names is “Jean”, “Philippe”, “Michel”, “Alain” and “Nicolas;” (ii) Christian female first names is “Marie”, “Nathalie”, “Isabelle”, “Sylvie” and “Catherine;” (iii) Muslim male first names is “Mohamed/Mohammed”, “Mehdi”, “Karim”, “Amine” and “Rachid;” (iv) Muslim female first names is “Malika”, “Yasmine/Yasmina”, “Kenza”, “Samia” and “Samira.” The top 5 for Muslim first names is obtained after excluding dual gender first names (“Ali”, “Sofiane” and “Yassine/Yacine”).

<sup>13</sup>See their websites: <http://www.ndn.edu.lb/> and <http://www.amilieh.org/>.

<sup>14</sup>See <https://www.sgdf.fr/>.

<sup>15</sup>See <http://scoutsmusulmans.fr/#Home>.

*Boy Scouts of France.*” Individuals engaged in this association should be perceived as non-religious not only due to the term “laïc” but also because scouting is historically a religious movement. Explicitly departing from this tradition by joining the *Girl and Boy Scouts of France*<sup>16</sup> should signal an attachment to non-religiosity.

Together with their Jewish and Protestant counterparts, the three above-mentioned scouting associations form the Federation of French scouting. This federation is part of the World Organization of the Scout Movement known for contributing “to the education of young people (...) to help build a better world where people are self-fulfilled as individuals and play a constructive role in society”.<sup>17</sup> And, indeed, scouting conveys a positive image among the general public in France. According to a poll conducted in January 2014 by Opinionway among a representative sample of 1,061 interviewees, 63% of the respondents report having a good opinion on this movement, with more than 75% of the sample considering that individuals involved in scouting are respectful of others. This pattern notably implies that people affiliated to religious scouting associations should not be viewed as fundamentalists willing to impose their views on the rest of the society but, rather, as religious people valuing prosocial behavior.

This overall good perception explains why scouting alumni are encouraged by human resources managers and recruitment consulting firms to disclose their past engagement. As an illustration, the Forbes Magazine published in 2016 an article entitled “Why hire someone who has been a Scout” whose conclusion is clear-cut: “If you have been a Scout and Scout educator, include it in your CV and talk about it during your job interview. If you are looking for talent, don’t miss the competitive advantages of being a Scout.” In fact, this article considers that “the same as ‘proficiency’ validates a high level of English language knowledge, to find that a person has been a Scout in a personal CV guarantees that the person has essential skills to deal with the current job market.”<sup>18</sup> France is no exception, with scouting being regularly presented as a valuable asset throughout one’s career.<sup>19</sup> Put differently, signaling one’s membership in one of the French main scouting associations is unlikely considered as inadequate by the recruiters. This is an important requirement for the external validity

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<sup>16</sup>See <http://www.eedf.fr/>.

<sup>17</sup>See <https://www.scout.org/mission>.

<sup>18</sup>In particular, scouting alumni are described as people who (i) know how to work in teams; (ii) are creative; (iii) know how to lead and how to be led; (iv) have empathy for others; (v) value effort; (vi) know how to set goals and how to evaluate them; (vii) are generous; (viii) advocate against injustice; (ix) are resourceful. See <https://www.scout.org/why-to-hire-someone-who-has-been-a-scout>, last accessed on May 23, 2017.

<sup>19</sup>See for instance “Le scoutisme, un tremplin vers la vie professionnelle” (“Scouting, a springboard for one’s career”) published in 2011 by *La Croix*, a prominent Catholic daily or “Ces salariés qui font progresser l’entreprise” (“These employees that help the firm make progress”) published in 2015 by *L’Express*, a weekly news magazine with a centre-right political stance.

of the correspondence study.

### 3.2.3 The “gender” treatment

As it is apparent above, the correspondence study involves candidates whose gender (female or male) is randomized. This feature allows testing for the first time whether anti-Muslim hiring discrimination (if any) varies with the gender of the fictive applicant.

### 3.2.4 The “quality” treatment

The “quality” treatment consists of randomizing whether an application is “good” or “outstanding”. Compared to the good CVs, the outstanding ones signal the excellence of the applicant under every heading. More precisely, the outstanding applicants are distinctive along five dimensions: (i) they made the honors list when they graduated from high school, whereas good applicants received no special mention; (ii) they show an accumulated job experience of 4.5 years which exceeds that of the good applicants by one year: they need less than two months to find a new job, as opposed to almost six months for the good applicants; (iii) they proffer a *confirmed* level of mastery of four different accounting/payroll/ management software systems valued by recruiters, whereas the good profiles signal an *intermediate* level of mastery of just one of them; (iv) their level of English is “fluent (reading +++, writing +++, spoken +++)” as opposed to “beginner (reading +, writing +, spoken +)”; (v) they practice one of their extra-curricular activities, Sudoku, at competition level.

The “quality” treatment aims to explore the source of anti-Muslim discrimination (statistical and/or taste-based). Evidence suggests that the screening process is more efficient as the skill level of the applicant increases (see Arcidiacono, Bayer and Hizmo (2010) or Lang and Manove (2011)). Put differently, the disappearance of anti-Muslim hiring discrimination when fictive applicants are outstanding would be consistent with such discrimination being statistical.

### 3.2.5 Summary

Overall, the correspondence study involves 30 types of applications that fall into three categories. The first category, composed of Christians and Muslims, includes 16 types of applications, i.e.  $(2 \text{ religious cultures}) \times (2 \text{ levels of religiosity}) \times (2 \text{ sexes}) \times (2 \text{ levels of quality})$ . The second and third categories are devised for robustness checks purposes. The second category (6 types of applications) tests whether the religiosity penalty for Muslims and religiosity premium for Christians hold with an alternative measure of religiosity (see Section 5.2). The third category (8 types of applications)

allows investigating whether Muslims are discriminated against due to their Muslim culture or simply due to their religious minority status (see Section 5.4).

These applications are spread out across the 96 *départements* in metropolitan France.<sup>20</sup> Put differently, the postal address that appears on the CVs and letters of application differ from one *département* to another. More precisely, the applicants reside in the *chic* downtown quarter of whatever city serves as the administrative capital (*préfecture*) of the *département* in which they are applying for a job.<sup>21</sup> These addresses were selected via Google Street View to ensure that (i) the street and the number exist; (ii) they coincide with a residential building (not with a vacant lot or an official building). However, given that recruiters do not contact job applicants by mail anymore but rely, instead, on the phone and/or on emails, none of the postal addresses was associated with a real mailbox including the first name and last name of the fictive candidates.

Obviously, recruiters located outside Paris might find it odd to receive applications from persons who, albeit now domiciled locally, completed their secondary schooling, earned their certificate and began their career in Paris. Therefore, for all the applicants domiciled outside Paris, a recent change of address is signaled by the note “new address from 1 September 2013” to their street address, 1 September 2013 being just before the date the correspondence study was launched. The template for the CV and letter of application of accountants are presented in the Appendix (the CV and letter of application of accounting clerks are available upon request).

### 3.3 Responding to job ads

The correspondence study unfolded over a period of one year. The first applications were sent out on Monday 23 September 2013, and the last ones on Friday 19 September 2014. The tally of the responses of recruiters was completed on Monday 1 December 2014.<sup>22</sup> For the sake of external validity, the experimental setup consists in responding to *all* offers in accountancy that were posted on the website of *Pôle Emploi*, the national employment agency.<sup>23</sup> As such, it focuses on a set of recruiters that are likely more open to diversity than recruiters who rely on social networks to fill

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<sup>20</sup>At the time of the correspondence study, metropolitan France was divided into 22 regions that were themselves subdivided into 96 *départements*.

<sup>21</sup>Assigning the fictive candidates to distinguished places of residence should contribute to boost their callback rates. Based on a correspondence study conducted in the Paris region, Bunel, L'Horty and Petit (2016) show that a posh postal address triples one's chances of being invited to a job interview.

<sup>22</sup>The last recruiters to whom applications were sent thus had six weeks to respond. This timeframe far exceeds the average response time (17 days) measured for the sample of employers during the whole period of the correspondence study.

<sup>23</sup>By contrast, Adida, Laitin and Valfort (2010) focus on France's main cities and Pierné (2013) on the Parisian region.

a vacancy.<sup>24</sup> The recruitment channel used in this correspondence study therefore presumably runs against measuring anti-Muslim discrimination.

Two special precautions were taken. First, only job ads that allowed the application to be sent directly to the establishment posting a vacancy were treated. The experimental setup thus excludes job offers posted by such intermediaries as temporary employment agencies, recruitment consulting firms, or counselors at Pôle Emploi. The recruiting behavior of such employment intermediaries do not necessarily reflect that of the establishments looking to hire, while it is the latter entities that have the last word about whom they choose to recruit. Second, in order to keep recruiters from detecting the presence of a correspondence study, the experimental setup also bars from responding to more than one job offer posted by the same firm, even if these offers concern branches in different localities.

For each job ad in each French *département*, one of the 30 types of applications is selected *at random* and sent to the recruiter by email. More precisely, an email account was created for each of the eight<sup>25</sup> first names used in the correspondence study, with each applicant having an email address of this kind: [firstname].haddad1988@gmail.com. The cover letter reads as follows:<sup>26</sup>

*Sir or Madam,*

*Please find enclosed my CV and my letter of motivation in response to offer number [XXX] which appeared today at the website of Pôle Emploi. I trust you will find everything in order.*

*[First name] Haddad*

*List of enclosures: Curriculum Vitae.pdf and Letter of motivation.pdf*

The random selection of applications ensures that any difference in the callback rates between two types of applications cannot be attributed to external factors (characteristics of the job, of the firm, of the region, etc.) but, rather, to the different contents of these applications. Overall, each type of applications was sent to roughly 200 job ads, leading to the treatment of 6,231 job postings. In particular, each “religious culture by religiosity by gender” profile was sent to 400 job ads, a number chosen to ensure statistical significance at conventional confidence levels for the effect sizes found by Adida, Laitin and Valfort (2010) and Pierné (2013).

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<sup>24</sup>As shown by Currarini, Jackson and Pin (2009) or Hitsch, Hortacsdu and Ariely (2010), these networks are characterized by “homophily”, or the concept that individuals who are similar tend to come together (McPherson, SmithLovic and Cook (2001)).

<sup>25</sup>Two first names for each religious culture (Christianity, Islam and Judaism) and two first names that can be borne indifferently by Christians, Muslims and Jews.

<sup>26</sup>The subject line of the email is “Application (job offer number [XXX]).”

### 3.4 Measuring recruiters' responses

Recruiters do not only rely on emails to contact job applicants. They can also call them on the phone. Therefore, like for the email addresses, a cellphone number was created for each of the eight first names used in the correspondence study. The greeting for each voicemail inbox consists of the applicant stating his or her first and last names. The same male voice recorded the greetings for the voicemail of the male applicants, and the same female voice recorded the greetings for the voicemail of the female applicants. These voices betray no foreign accent.

The email and voicemail inboxes of all the applicants were checked daily. Out of respect for the recruiters who did issue an invitation to any applicant, and in order to limit the ethical concerns inherent to a correspondence study, the following email was sent on the day after they contacted the applicant:

*Sir or Madam,*

*I am very grateful for the interest you have taken in my application. Unfortunately, I am unable to follow it up, as I have just accepted an offer of employment on an open-ended contract. Please accept, Sir or Madam, my best regards.*

*[First name] Haddad*

## 4 Main results

The final sample for Christian and Muslim fictive applicants includes 3,331 applications submitted to 3,331 job ads. Table 1 reports descriptive statistics for the dependent and experimental variables, as well as for job, firm and region characteristics in this sample. Roughly 15% of applications received a positive callback from the recruiter, meaning that the recruiter contacted the fictive job candidates by phone and/or email in order to invite them to a job interview or collect additional information about their application.<sup>27</sup> Due to the randomization of candidates' religious culture as well as religiosity, gender and quality, the sample is divided equally across (i) candidates of Christian and Muslim culture; (ii) non-religious and religious candidates; (iii) female and male candidates; (iv) good and outstanding candidates.

Applications were as likely to be sent to ads for accounting clerk jobs as to ads for accountant jobs.

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<sup>27</sup>To the extent that recruiters typically express their interest in the candidates' application when they contact them for additional information, this type of answer is viewed as positive. It is worth stressing however that the results are robust with alternative measures of the callback rate (see Section 5.1).

Open-ended contracts (the so-called *Contrat à durée indéterminée (CDI)* in French) are slightly more common than fixed-term contracts (the so-called *Contrat à durée déterminée (CDD)* in French).

Firms are chiefly from the private sector. The public sector indeed primarily recruits through public entry examination in France. Firms also mainly stem from the tertiary sector, a consequence of the overrepresentation of this sector in the French economy.<sup>28</sup> Regarding firms' size, 93% of firms have less than 250 employees among those whose size is known. This is more than the 50% share that this category makes up in the French workforce (INSEE (2016)). The oversampling of small to medium size firms flows from the methodological imperative to respond to no more than one job ad per firm, so as to avoid detection. It is important to note that this restriction offers the advantage of providing a sample that better reflects the distribution of firms by size, since firms with less than 250 employees stand for roughly 99% of firms in France (INSEE (2016)).

Region characteristics encompass four items that may influence the difference in callback rates between Christian and Muslim applicants (see Section 4.3.3): (i) the average regional unemployment rate in 2013 (i.e. at the start of the correspondence study); (ii) the vote share of the *Front National* (the right-wing populist and nationalist political party in France) during the first round of the 2012 French presidential election; (iii) the average share of respondents who self-identify as Muslims in the few surveys that include a “religious denomination” question: the 1990, 1999 and 2008 rounds of the European Values Survey and the 2006 round of the World Values Survey; (iv) the share of immigrants from North Africa and Maghreb, as reported by INSEE for year 2013<sup>29</sup>.

Table 2 provides randomization tests. Due to the randomized design of the field experiment, Table 2 by and large confirms that the covariates reported in Table 1 are balanced across the “religious culture”, “religiosity”, “gender” and “quality” treatments.

## 4.1 Estimating the impact of being of Muslim vs Christian culture

Figure 1 reports the probability of a positive callback by religious culture. It reveals strong discrimination against Muslim applicants: their callback rate (11.7%) is 6.7 percentage points lower than that of Christians (18.4%), a difference that is statistically significant at the 99% confidence level. Put differently, applicants of Christian culture are 60% more likely to be called back by the recruiter.

<sup>28</sup>As of January 2014, the tertiary sector stands for 80% of French firms and employs more than three quarters of French workers (INSEE (2016)).

<sup>29</sup>See <https://www.insee.fr/fr/statistiques/2012727>.

Equation (1) provides the regression counterpart of this difference-of-means analysis:

$$y_{i,a} = \beta_0 + \beta_1 \mathbb{1}^M(i) + \beta_2 \mathbb{1}^R(i) + \beta_3 \mathbb{1}^m(i) + \beta_4 \mathbb{1}^o(i) + \mathbf{X}_a \boldsymbol{\Gamma}'_a + \epsilon_{i,a} \quad (1)$$

where  $y_{i,a}$  is a dichotomous variable that equals 1 if candidate of type  $i$  who applies to job ad  $a$  receives a positive callback from the recruiter. Given the randomized design of the field experiment, coefficients  $\beta_1$  to  $\beta_4$  provide unbiased estimates of the mean impact of (i) being of Muslim vs Christian culture (the dummy  $\mathbb{1}^M(i)$ ); (ii) being religious vs non-religious (the dummy  $\mathbb{1}^R(i)$ ); (iii) being male vs female (the dummy  $\mathbb{1}^m(i)$ ); (iv) being outstanding vs good (the dummy  $\mathbb{1}^o(i)$ ). Vector  $\mathbf{X}_a$  denotes a set of features of job ad  $a$  that encompasses job and firm characteristics as well as month and region fixed effects. Finally,  $\epsilon_{i,a}$  is an error term.

Columns 1 to 6 of Table 3 report the marginal probit estimates of Equation (1) when the controls are entered stepwise and the standard errors are clustered at the *département* level. The results confirm the findings from Figure 1: the callback rate of applicants of Muslim culture is between 6.7 and 6.9 percentage points lower than that of their Christian counterparts. These estimates remain unchanged with an OLS approach (Column 7 of Table 3).

Table 3 provides interesting additional findings. Being religious has no impact on the probability of callback. A preview of the results helps explain this pattern. Only Muslims are penalized for appearing as religious. By contrast, Christians gain ground by stressing their involvement in a Christian scouting association (see Section 4.2.1 for further details).

Male applicants are discriminated against relative to female applicants: their callback rate is 9.4 percentage points lower (Column 7). This result is in line with the literature on gender-based discrimination: it reveals that discrimination against women increases with the level of responsibility attached to the occupation they apply for, while the reverse occurs for men. More precisely, women are discriminated against in access to high-responsibility jobs (Baert, de Pauw and Deschacht (2016)), especially when their age puts them at risk of maternity (Petit (2007)). But they are favored in access to lower-responsibility jobs (Riach and Rich (2006) and Booth and Leigh (2010)). Yet, although accountant jobs involve more autonomy and complexity than accounting clerk jobs, they still belong to the category of lower-responsibility jobs. Consistent with discrimination against women (resp. men) increasing (resp. decreasing) with the job's level of responsibility, fictive male applicants are less discriminated against when they apply for accountant rather than accounting clerk jobs, although this difference is not statistically significant. Additionally, the 2013 and 2014 rounds of the French

Labour Force Survey confirm a negative correlation between the job's level of responsibility and the proportion of women among accountancy jobs: this proportion is 81% for accounting clerk jobs, 67% for accountant jobs, and 46% for accounting manager jobs. (Results available upon request.)

As expected, being outstanding increases the callback rate by nearly 5 percentage points (Column 7). As for vector  $\mathbf{X}_a$ , two of its components turn out statistically significant: candidates are less likely to be called back when they apply (i) for an open-ended contract, (ii) in the private sector. This result could reflect lower ethnic-based hiring discrimination among fixed-term contracts as well as in the public sector (e.g. Cahuc et al. (2017)), in a context where all fictive candidates originate from the Middle East.

It is important to stress that the magnitude of anti-Muslim discrimination identified in Figure 1 and Table 3 could obviously depend on the region of origin used in the experimental setup, i.e. Middle East North Africa. Although the impact of being of Muslim vs Christian culture would still be meaningful in this case since the bulk of Muslims in France stem from this region, it is worthwhile investigating, for the sake of their external validity, whether they can be extended to other regions of origin. Among the previous correspondence studies that have sought to isolate a Muslim effect, only Adida, Laitin and Valfort (2010) focus on applicants that are comparable to a subset of the applicants used in this paper, in terms of religiosity, gender, quality and jobs they apply for. More precisely, Adida, Laitin and Valfort (2010) rely on religious Christian and Muslim female candidates of good quality who apply as accounting clerks or accountants.<sup>30</sup> Adida, Laitin and Valfort (2010) find that a woman is 2.5 times less likely to be invited to a hiring interview when she is perceived as Muslim rather than Catholic, which is very close to the ratio of 2.2 revealed by Figure 5a for religious female applicants of good quality. Put differently, the hypothesis that the magnitude of anti-Muslim discrimination is robust to applicants of sub-Saharan African origin cannot be rejected. Yet, further research is needed to test whether this magnitude is also robust to an Asian or European origin (Bosnia-Herzegovina would be the ideal country of origin in this case).

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<sup>30</sup>These candidates are French citizens of Senegalese background. Their religious culture is signaled by their first name: Marie (Diouf) for the Christians and Khadija (Diouf) for the Muslims. Their religiosity is conveyed by their involvement in a denominational scouting association, as it is the case for the fictive applicants of Lebanese background.

## 4.2 Heterogeneous effects by religiosity, gender and quality

Tables 4a to 4d analyze whether the “Muslim vs Christian culture” effect varies by religiosity, gender and quality. These tables rely on the following linear probability model:<sup>31</sup>

$$y_{i,a} = \beta_0 + \beta_1 \mathbb{1}^M(i) + \beta_2 \mathbb{1}^M(i) \times \mathbb{1}^k(i) + \beta_3 \mathbb{1}^R(i) + \beta_4 \mathbb{1}^m(i) + \beta_5 \mathbb{1}^o(i) + \mathbf{X}_a \boldsymbol{\Gamma}'_a + \epsilon_{i,a} \quad (2)$$

where  $k = R$  in Tables 4a and 4b (heterogeneous effects by religiosity),  $k = m$  in Table 4c (heterogeneous effects by gender), and  $k = o$  in Table 4d (heterogeneous effects by quality).

### 4.2.1 Heterogeneous effects by religiosity

Figure 2 reports the callback rates of Christian and Muslim applicants depending on whether they appear as non-religious or religious. Panel A of Table 4a constitutes its regression counterpart: it provides the OLS estimates of Equation (2) when the “Muslim vs Christian culture” dummy (denoted by  $\mathbb{1}^M(i)$ ) is interacted with the “religious vs non-religious” dummy (denoted by  $\mathbb{1}^R(i)$ ). The magnitude and statistical significance of the effects are summarized in Table 4b.

Figure 2 reveals that anti-Muslim discrimination increases with religiosity. This finding is confirmed by Panel A of Table 4a. The coefficient on row (1) indicates a small and statistically insignificant disadvantage for non-religious Muslims relative to non-religious Christians. But this gap widens and becomes statistically significant at the 99% confidence level when these applicants are religious (see the sum of coefficients on row (b) in Panel A of Table 4b). In this case, the probability of callback for religious Muslims is more than 10 percentage points lower than that of religious Christians, meaning that they must submit twice as many applications before being called back by the recruiter. This pattern derives from two opposite trends: signaling one’s religiosity boosts the callback rate of Christians (row (c) in Panel A of Table 4b) but undermines that of Muslims (row (d)), the difference between these two effects being statistically significant at the 99% confidence level (row (e)). It is interesting to note that the religiosity penalty for Muslims leads them to be discriminated against even when they are compared to *non-religious* Christians (row (f)).

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<sup>31</sup> Although the dependent variable is binary, OLS are used because of concerns about interaction effects in probit regressions (Ai and Norton (2003)). Yet, as it is already apparent in Table 3, probit estimates yield similar findings as OLS estimates. (Results available upon request.)

#### 4.2.2 Heterogeneous effects by gender

Figure 3 shows that the difference in callback rates between applicants of Christian and Muslim culture is greater among men (14.3% vs 6.0%) than women (22.3% vs 17.3%). Distinguishing between non-religious and religious applicants reveals that this gap is driven by religious applicants: while the “Muslim vs Christian culture” effect does not vary by gender among non-religious applicants, this effect is statistically significant among religious applicants, and greater among religious men (-13.2 percentage points) than religious women (-7.1 percentage points). More precisely, the fact that religious applicants of Muslim culture must submit twice as many applications than their Christian counterparts before being called back by the recruiters (see Figure 2 and Panel A of Tables 4a and 4b) is largely driven by male applicants: the callback rate of religious Christian women is 40% higher than that of religious Muslim women, while the callback rate of religious Christian men is nearly four times as high as that of religious Muslim men.

Panels A to C of Table 4c confirm these findings. The interaction term in Equation (2) between the “Muslim vs Christian culture” dummy (denoted by  $\mathbb{1}^M(i)$ ) and the “male vs female” dummy (denoted by  $\mathbb{1}^m(i)$ ) is statistically significant (and, in this case, negative) only when one focuses on religious applicants.

#### 4.2.3 Heterogeneous effects by quality

Anti-Muslim discrimination is expected to decrease with applicants’ quality. Yet, Figure 4 indicates that Muslim applicants of outstanding quality are *not* less likely to be discriminated against than Muslim applicants of good quality, should one focus on the whole sample of applicants or on religious applicants only (recalling that anti-Muslim discrimination does not emerge among non-religious applicants). Panels A to C of Table 4d confirm this finding: the interaction term in Equation (2) between the “Muslim vs Christian culture” dummy (denoted by  $\mathbb{1}^M(i)$ ) and the “outstanding vs good” dummy (denoted by  $\mathbb{1}^o(i)$ ) is never statistically significant.

#### 4.2.4 Heterogeneous effects by religiosity, gender and quality

Figures 5a to 5d report the callback rates of Christian and Muslim applicants depending on whether they appear as non-religious or religious, among the following groups defined by gender and quality: female applicants of good quality (Figure 5a), female applicants of outstanding quality (Figure 5b), male applicants of good quality (Figure 5c) and male applicants of outstanding quality (Figure 5d).

These figures reveal that the “religiosity premium” for Christians is driven by female applicants of good quality and male applicants of outstanding quality. The signal of religiosity allows boosting the callback rate of Christian women of good quality (from 15.2% to 23.5%, an increase that is statistically significant at the 95% confidence level) close to that of non-religious Christian women of outstanding quality (27.6%). For these outstanding profiles, being religious or not does not make a difference, thereby suggesting that the signal of religiosity works toward reassuring the recruiters when the application of Christian women is not outstanding. By contrast, the signal of religiosity fails to influence the callback rate of non-religious Christian men of good quality, which is consistent with the male penalty emphasized in Section 4.1: their fit with employers’ expectations when they seek to fill a lower-responsibility position may be too low for the religiosity signal to be influential. However, this signal is powerful at shooting out the callback rate of Christian men of *outstanding* quality: this rate rises from a low of 9.4% to a high of 26.4% (an effect that is statistically significant at the 99% confidence level and greater than the religiosity premium experienced by Christian women of good quality).

The signal of religiosity has an opposite impact on the callback rate of Muslim applicants: while it constitutes a premium for Christians, this signal works as a penalty for Muslims. This negative effect is particularly strong for non-outstanding applicants: when they appear as religious, the callback rate of Muslim applicants of good quality decreases from 15.4% to 10.9% for women (not statistically significant) and from 8.3% to 4.2% for men (statistically significant at the 90% confidence level). This pattern suggests that, unless it is counterbalanced by an information that stresses the outstanding quality of the applicant, the signal of religiosity increases the risk of transgressive behaviour in the workplace that is associated with applicants of Muslim culture.

Figures 5a to 5d obviously illuminate why anti-Muslim discrimination is largely driven by male applicants (see Section 4.2.2): the religiosity premium is greater for male than female Christian applicants (Figures 5a and 5d), while the religiosity penalty primarily affects male Muslim applicants (Figure 5c). But Figures 5a to 5d also help elucidate why anti-Muslim discrimination is unrelated to applicants’ quality (see Section 4.2.3). While Figures 5a and 5b indicate that such discrimination disappears among female religious applicants as soon as they are outstanding, Figures 3c and 3d reveal that anti-Muslim discrimination skyrockets among outstanding male religious applicants.<sup>32</sup> This

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<sup>32</sup>It is interesting to observe that the “outstanding” signal fails to influence the callback rate of non-religious men of both Christian and Muslim culture. This outcome is again consistent with the male penalty emphasized in Section 4.1: the fit of male applications with employers’ expectations when they seek to fill a lower-responsibility job position may be too low for the “outstanding” signal to make a difference.

latter finding is driven by the huge religiosity premium experienced by outstanding male Christian applicants. In this setting, anti-Muslim discrimination does not vary by quality since the effects of the “outstanding” signal run in opposite direction among female and male religious applicants.

Panels B to E of Tables 4a and 4b constitute the regression counterparts of Figures 5a to 5d. They confirm that (i) the religiosity premium for Christians is driven by female applicants of good quality and male applicants of outstanding quality (see row (c) in Panels B and E of Table 4d); (ii) the religiosity penalty for Muslims is mainly driven by male and female applicants of good quality, although it is statistically significant only among the former applicants (see row (d) in Panels B and D of Table 4d).

### 4.3 Heterogeneous effects by job, firm and region characteristics

Tables 5a to 5d analyze whether the “Muslim vs Christian culture” effect varies by job, firm and region characteristics. These tables rely on the following linear probability model:

$$y_{i,a} = \beta_0 + \beta_1 \mathbb{1}^M(i) + \beta_2 \mathbb{1}^M(i) \times x_a^k + \beta_3 \mathbb{1}^R(i) + \beta_4 \mathbb{1}^m(i) + \beta_5 \mathbb{1}^o(i) + \mathbf{X}_a \boldsymbol{\Gamma}'_a + \epsilon_{i,a} \quad (3)$$

where  $k = j$  in Tables 5a and 5b (heterogeneous effects by *job* characteristics),  $k = f$  in Table 5c (heterogeneous effects by *firm* characteristics), and  $k = r$  in Table 5d (heterogeneous effects by *region* characteristics).

#### 4.3.1 Heterogeneous effects by job characteristics

Does anti-Muslim discrimination vary with the level of responsibility attached to the job the candidates apply for? Panel A of Table 5a addresses this question by estimating Equation (3) when the “Muslim vs Christian culture” dummy is interacted with whether the candidate applies to an accountant job, as opposed to an accounting clerk job. Panel A reveals anti-Muslim discrimination both when applicants apply as accounting clerks and accountants, although it is stronger in the latter case: the statistically significant negative difference in callback rates between Muslim and Christian candidates decreases from -4.4 percentage points among accounting clerks to -8.7 percentage points among accountants, an effect that is statistically significant at the 95% confidence level (see the coefficient on row (2) of Panel A). Anti-Muslim discrimination therefore appears robust to focusing on low-responsibility (accounting clerks) as well as middle-responsibility jobs (accountants). However, further research is needed to confirm it holds if the fictive candidates apply for high-responsibility

jobs instead (e.g. as accounting managers).

Panel B of Table 5a tests for variation in anti-Muslim discrimination along the length of the job contract. It is a possibility that recruiters take less risks, and so discriminate more, when the hire is for an open-ended term. But this surmise is not confirmed: applicants of Muslim culture are as likely to be discriminated against for fixed-term contracts than for open-ended contracts. This result might flow from fixed-term contracts being already too long for recruiters to give up statistical discrimination, with a median duration equal to 5 months. Unfortunately, it is not possible to test for a decrease in anti-Muslim discrimination for contracts that do not exceed few days since such work arrangements concern only a handful of job ads.

#### 4.3.2 Heterogeneous effects by firm characteristics

Table 5b reports no variation in anti-Muslim discrimination across the private, public and non-profit sectors, or across the primary, secondary and tertiary sectors. Nor does it identify heterogeneous effects along firm's size. But these results may flow from the sample's imbalance along firm characteristics. As already noted, firms are chiefly from the private and tertiary sectors, and with less than 250 employees (see Table 1).

#### 4.3.3 Heterogeneous effects by region characteristics

Table 5c tests for variation in the “Muslim vs Christian culture” effect by region characteristics, i.e. unemployment rate, support to Front National and the share of Muslims.

**Unemployment rate** Hiring discrimination should be less costly to recruiters when unemployment rises. As explained by Biddle and Hamermesch (2013), an increasing ratio of job seekers to vacancies should give employers more scope to indulge discriminatory behaviors. One penalty of discriminating indeed consists in the opportunity cost of the longer expected wait until an acceptable worker arrives, and this cost decreases with unemployment due to the concomitant (i) lower value of output (unemployment being typically linked to economic downturn) as well as (ii) higher arrival rate of workers at vacancies. Baert et al. (2015) provides support to this mechanism. Relying on a field experiment, they find that ethnic-based hiring discrimination decreases with labour market tightness.

In a similar vein, Panel A of Table 5c investigates whether applicants of Muslim culture are more discriminated against in regions where unemployment is higher. It provides results that are

consistent with the literature. More precisely, Muslims are not discriminated against in regions with no unemployment (see the coefficient on row (1)). But they are increasingly penalized as the unemployment rate rises (see the coefficient on row (2)) up to suffering from a statistically significant penalty in regions that show the maximum level (14.6%) of unemployment rate (see the Wald test at the bottom of Panel A).

**Support to Front National** Does anti-Muslim discrimination vary with the vote share of the *Front National* during the first round of the 2012 French presidential election? Since being elected president of her party on 16 January 2011, Marine Le Pen has adopted an unambiguously anti-Muslim discourse. In her speech upon becoming leader, she “let it be understood that Europe and France were at risk of turning into ‘caliphates’, in other words territories subject to the spiritual and temporal power of Islam... The Front National now perceives immigration primarily through the filter of religious radicalization.” (Perrineau (2014), p 98). One therefore expects a stronger Muslim penalty in regions that show a higher political support to Front National. Panel B of Table 5c confirms this intuition. Muslims are not discriminated against in regions with no political support for Front National (see the coefficient on row (1)). But they are increasingly penalized as this support rises (see the coefficient on row (2)) up to suffering from a statistically significant disadvantage in regions where this support reaches its maximum value (25.0%) (see the Wald test at the bottom of Panel B).

**Share of Muslims** Anti-Muslim discrimination is supposed to vary with the local share of Muslims. This relationship may be negative. Intergroup contact theory indeed predicts that an increase in the relative size of Muslims provides contact opportunities with them, which in turn attenuates anti-Muslim taste-based discrimination (Allport (1954)). Moreover, individuals who harbour anti-Muslim sentiments are unlikely to choose to live in areas with a large proportion of Muslims (see Alesina, Baqir and Easterly (1999) and Bayer and McMillan (2012) for a discussion of this Tiebout-like sorting). But the correlation between anti-Muslim discrimination and the local share of Muslims may also be positive. Group threat theory predicts that an increase in the relative size of Muslims generates anti-Muslim taste-based discrimination because of the perception by the dominant group of a symbolic threat to one’s cultural integrity (Blalock (1967)). Additionally, an increase in the relative size of Muslims may undermine their incentives to adhere to secular laws (and, hence, feed statistical anti-Muslim discrimination), either as a response to anti-Muslim hostility if group threat

theory is at work (Gould and Klor (2016)) and/or because their size allows for their living on the margins of society.

Only a few studies have analyzed the relationship between attitudes and behaviours toward Muslims and the local share of Muslims. Survey-based evidence points to an increase in anti-Muslim sentiment in geographic areas where the proportion of Muslims is larger. Bowyer (2009) shows that residential proximity in the UK to Pakistanis and Bangladeshis, who are primarily Muslim, is associated with more negative attitudes toward them. Similarly, relying on survey data, Savelkoul et al. (2011) find that the local share of Muslims is related to anti-Muslim attitudes by Dutch citizens with no recent immigrant background. Adida, Laitin and Valfort (2016b) confirm these preliminary findings by relying on behavioural games. These games involve French with no recent immigrant background and Christians and Muslims immigrants of the same country of origin (Senegal). They show that French participants become less altruistic in their interactions with Muslims when the proportion of Muslims in the game session increases. By contrast, an increase in the proportion of Christians does not affect the manner in which they are dealt with by the same French persons.

Panel C of Table 5c confirms these “Hortefeux effects”.<sup>33</sup> Muslims and Christians are treated on an equal ground in regions with no Muslims (see the coefficient on row (1)). But their callback rate endures a statistically significant decline following an increase in the local proportion of Muslims at the regional level (see the coefficient on row (2)). As it is apparent in Panel D of Table 5c, these results are robust to an alternative measure of the local share of Muslims: the proportion of immigrants from the main Muslim-majority countries of origin (Algeria, Morocco, Tunisia and Turkey).

#### 4.4 Evidence of taste-based anti-Muslim discrimination?

Provided that the labour market is competitive, Becker’s model (1957) predicts that employers who engage in taste-based discrimination should be driven out of the market since they forfeit profits. The main results of this paper point to statistical hiring discrimination. As such, they are consistent with Becker’s model’s prediction as well as with previous studies that have sought to distinguish between statistical and taste-based discrimination in competitive markets (see List (2004), Zussman

<sup>33</sup>Adida, Laitin and Valfort (2016b) label their results in reference to the words uttered on 5 September 2009 by the French Minister of the Interior Brice Hortefeux at the summer gathering of the UMP (the main center-right political formation in France): “When there’s one, that’s OK; it’s when there’s a lot of them that there are problems.” The context of these remarks was an encounter between Brice Hortefeux and Hamid, a young UMP activist of north African origin. “He doesn’t match the prototype at all,” commented the Interior Minister about the young man, “who eats pork and drinks beer” according to other party members. Then Brice Hortefeux added: “You always need one. When there’s one, that’s OK; it’s when there’s a lot of them that there are problems.” Note that Panels C and D seek to control for regional sorting by including the vote share of National Front among the explanatory variables.

(2013), Doleac and Stein (2013) and Bryson and Chevallier (2015)).

Yet, this does not mean that anti-Muslim taste-based discrimination is not at work outside the hiring process. In a laboratory setting that seeks to mimic everyday interactions between strangers, Adida, Laitin and Valfort (2014) show that French with no recent immigrant background exhibit an unprovoked animus against Muslim immigrants that does not emerge when they interact with Christian immigrants from the same country of origin (Senegal).

To test for taste-based discrimination with data from a correspondence study, it seems promising to focus on recruiters' behavior toward applicants *once* they have made the choice of *not* hiring them. Indeed, their beliefs on applicants' productivity should not influence their behavior at that stage. By contrast, recruiters may be more prone to indulge their anti-Muslim animus (if any) since it is not detrimental for the firm's performance anymore. In this setting, any unequal treatment between applicants of Christian and Muslim culture should reflect taste-based rather than statistical discrimination.

Table 6 reports the OLS estimates of Equation (1) when the following alternative dependent variables are used: the probability of being notified when the recruiter's response is negative and the tone of the negative response. The tone of the negative response is measured by the sum of seven binary variables: (i) the "personalization" variable: =1 if the email of refusal is personalized (for example "Dear Mr/Mrs Haddad"), = 0 if not; (ii) the "thank you" variable: =1 if the recruiter thanks the applicant for applying, = 0 if not; (iii) the "explanation" variable: =1 if the recruiter gives a reason for the rejection (job already filled, inadequacy of the profile submitted, etc.), = 0 if not; (iv) the "reassurance" variable: =1 if the recruiter assures the applicant that the refusal does not reflect negatively on the quality of his or her profile, = 0 if not; (v) the "encouragement" variable: =1 if the recruiter encourages the applicant to keep on hunting for a job, = 0 if not; (vi) the "retention" variable: =1 if the recruiter states that he or she will keep the applicant's CV on file in case there is another opening, = 0 if not; (vii) the "politeness in closing" variable: =1 if the recruiter employs polite expressions in closing, = 0 if not.

Table 6 reveals that anti-Muslim discrimination is also likely taste-based outside the hiring process. Applicants of Muslim culture are less likely to be notified of a negative response (statistically significant at nearly the 90% confidence level, with a p-value equal to 0.113). Moreover, the tone of the negative response, when notified, is less affable to them (statistically significant at the 90% confidence level). These results are not driven by a specific type of applicant nor by a specific item that enters the sum used to measure the tone of the negative response. (Results available upon

request.)

## 5 Robustness checks

This section implements four types of robustness checks. First, it tests the robustness of the main results to alternative measures of the callback rate. It also explores whether the religiosity premium for Christians and religiosity penalty for Muslims hold with an alternative measure of religiosity. Additionally, it investigates whether anti-Muslim discrimination is robust to taking into account the possibility that recruiters hold different beliefs not only on the mean but also on the variance of Christians' and Muslims' unobserved productivity (Heckman and Siegelman (1993) and Neumark (2012)). Finally, it investigates whether Muslims are discriminated against due to their Islamic affiliation or simply due to their religious minority status.

### 5.1 Alternative measures of the callback rate

Thus far, the probability of receiving a positive callback from the recruiters is defined as taking the value 1 if the recruiters contact the fictive job candidates by phone and/or email in order to invite them to a job interview or collect more information about their application. It is equal to 0 if the recruiters contact the candidates to turn down their application or if the recruiters do not contact the candidates at all. As it has already been stressed, the recruiters typically express their interest in the candidates' application when they contact them to know more about their application. It would therefore be questionable to view this type of answer as negative.

Yet, Table 7a reports the OLS estimates of Equations (1) and (2) if cases when the recruiters wish to collect more information on the candidates are not viewed as a positive answer anymore. More precisely, Table 7a focuses on two alternative measures of the callback rate. The first alternative measure takes the value 1 if the recruiters contact the fictive job candidates by phone and/or email in order to invite them to a job interview, and 0 otherwise. The second alternative measure is categorical: it takes the value 1 if the recruiters contact the candidates to turn down their application or if the recruiters do not contact the candidates at all, the value 2 if the recruiters contact the candidates to collect more information about their application, and the value 3 if the recruiters contact the candidates by phone and/or email in order to invite them to a job interview.

Table 7a reveals that the main results are fully robust to these alternative measures of the callback rate. The only exception is the coefficient on row (3) in Panel B concerning the first alternative

measure of the callback rate. This coefficient estimates the religiosity effect for religious applicants of Christian culture. While it is still positive, it loses statistical significance as compared to an approach that relies on the original measure, or on the second alternative measure of the callback rate. Yet, a decomposition by type of candidates similar to that performed in Tables 4a and 4b reveal that all the results from these tables hold. (Results available upon request.) Notably, the “religiosity premium” for Christian women of good quality and for Christian men of outstanding quality remains unchanged.

## 5.2 An alternative measure of religiosity

The signal of religiosity has a non-symmetric impact on the callback rate of Muslim and Christian applicants: it is detrimental to Muslims (a result that is statistically significant for men of good quality) but it boosts the probability of a positive callback for Christian women of good quality and Christian men of outstanding quality. This section tests the robustness of these findings with an alternative measure of religiosity.

More precisely, it compares the callback rates of applicants of Christian and Muslim culture, depending on whether they bear a typical Christian or Muslim first name, or a Christian first name that can also be born by Muslims in France without questioning their Muslim culture.<sup>34</sup> This first name is “Adam” for the men and “Myriam” for the women. Although these first names do not conflict with a Muslim culture, they are likely perceived as signaling lower religiosity than typical Muslim first names. However, for the sake of this robustness check, it is critical that they be perceived as signaling lower religiosity among Christian applicants as well. Ensuring that their frequency in the French population is lower than the frequency of the typical Christian first names used in the experiment is therefore important. Unfortunately, it is not possible to meet this requirement for Christian women. According to the INSEE Name Frequency Dataset, “Adam” is much less frequent than “Michel” in France. But “Myriam” is nearly as common as “Nathalie”. The robustness check below therefore does not allow testing the robustness of the religiosity premium for Christian women.

To avoid lengthening the period over which the correspondence study unfolds, applications endowed with the first name “Adam” or “Myriam” were created for only one type of applications picked at random, among the four possible types defined by religiosity and quality:<sup>35</sup> religious applications

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<sup>34</sup>There is no Muslim first name that can also be born by Christians in France without questioning their Christian culture.

<sup>35</sup>These four possible types are: non-religious applications of good quality, non-religious applications of outstanding quality, religious applications of good quality and religious applications of outstanding quality.

of outstanding quality. Indeed, irrespective of the applicants' religiosity and quality, their callback rate should vary with the extent to which their first name is typical of their religious culture, at least for the profiles whose religiosity turns out being consequential in the main findings. More precisely, one expects that (i) Christian men gain ground by calling themselves “Michel” rather than “Adam”; (ii) Muslim women and Muslim men lose ground by calling themselves “Samira” rather than “Myriam” for women and “Mohammed” rather than “Adam” for men (with this effect being statistically significant among Muslim men). To be sure, identifying the religiosity penalty for Muslims among *outstanding* candidates constitutes a challenge since this penalty does not emerge among these candidates in the main findings. Yet, to the extent that the alternative signal of religiosity is more public than the original one (and is therefore more easily observed by the candidates' colleagues and customers in case of a hire), it may impact candidates' callback rates even when they are outstanding.

For each of the four groups of applicants defined by their religious culture and gender, Table 7b reports the OLS estimates of Equation (4):

$$y_{i,a} = \beta_0 + \beta_1 \mathbb{1}^{R'}(i) + \mathbf{X}_a \boldsymbol{\Gamma}'_a + \epsilon_{i,a} \quad (4)$$

where  $\mathbb{1}^{R'}(i)$  is a dummy that is equal to 1 if the applicant's first name is typical of his/her religious culture and 0 otherwise, i.e. “Nathalie” vs “Myriam” for Christian women, “Samira” vs “Myriam” for Muslim women, “Michel” vs “Adam” for Christian men and “Mohammed” vs “Adam” for Muslim men.

Table 7b confirms the substantial and statistically significant religiosity premium for Christian men. Moreover, it endorses the religiosity penalty for Muslims, a finding that is statistically significant only for Muslim men as it was the case when the original measure of religiosity was used.

### 5.3 Taking variance-based statistical discrimination into account

According to Heckman and Siegelman (1993), the difference in callback rates between a “majority” and a “minority” applicant might not only reflect employers' different preferences (taste-based discrimination) and/or beliefs on the mean of applicants' unobserved productivity (the classical notion of statistical discrimination). Provided that employers evaluate applications according to some threshold level of productivity, this difference may also translate employers' different beliefs on the variance of applicants' unobserved productivity.

It is important to identify whether employers perceive a group difference in the variance of un-

observed variables since variance-based statistical discrimination potentially threatens the external validity of the results. Indeed, if such discrimination is at work, the intensity of the overall penalty endured by Muslim applicants depends on the level at which the experimenter standardizes their observed characteristics. More precisely, if this level is situated below the threshold above which the recruiter calls back, then the recruiter favors applicants belonging to the group with the largest variance – for the probability that their productive characteristics lie above the threshold is higher within this group. By contrast, if this level exceeds the threshold above which the recruiter calls back, then the recruiter favors applicants belonging to the group with the smallest variance – for the probability that their productive characteristics lie above the threshold is higher within this group. Put differently, anti-Muslim discrimination might simply be an artifact of how the correspondence study is implemented, i.e. how the standardization of applications to particular values of the observables compares with the *actual* distribution of observables among real applicants to the jobs ads dealt with in the experiment (an information that the experimenter does not observe, unfortunately).

Neumark (2012) develops a statistical procedure that allows disentangling the share of differences in callback rates that is attributable to differences in preferences and/or beliefs on the first moment of unobservables (i.e. mean of productivity), and the share that is attributable to differences in beliefs on the second moment of unobservables (i.e. variance of productivity). This approach requires estimating an heteroskedastic probit model, since this model allows the variance of the error term to vary across groups. For identification purposes, the model must control for at least one job-relevant characteristic whose effects on the callback rate of the majority and the minority applicants are *similar*. Under this assumption, if the estimated coefficients of this characteristic differ across groups, group differences in standard deviations have been pinpointed.

Based on Section 4, the “Muslim vs Christian culture” effect shows substantial variation across religiosity, gender and quality. It also varies with whether the fictive candidates apply as accounting clerks or accountants, as well as with region characteristics. In fact, the length of the job contract is the only characteristic that both shows substantial variation across the sample (which is not the case of firm characteristics) and does not differentially impact the callback rate of Christian and Muslim applicants. Moreover, this variable is one of the few that is consequential in the hiring process, another important requirement for identifying variance-based statistical discrimination: it exerts a statistically significant negative impact on the applicants’ callback rate (see Table 3).

Table 7c implements Neumark’s statistical procedure. Panels A and B report the marginal “Muslim vs Christian culture” effect when one controls for the length of the job contract and relies on a

probit model (Panel A) or on an heteroskedastic probit model (Panel B). These marginal effects are nearly equivalent: they reveal that the callback rate of applicants of Muslim culture is statistically lower by 6.7 (Panel A) or 6.6 (Panel B) percentage points. This similarity suggests that recruiters do not perceive a group difference in the variance of unobserved variables. This surmise is confirmed by the next two rows of Panel B: the standard deviation of unobservables for Muslims is only 1.131 higher than that for Christians, a difference that falls short of statistical significance.

Decomposing the overall marginal effect from the heteroskedastic probit model shows that the effect through the level is more negative. By contrast, the effect through the variance is positive. Although none of these sub-effects is statistically significant (which is consistent with the absence of variance-based statistical discrimination), it is important to note that they do not threaten the external validity of the main results if they are taken at their face value. Indeed, coupled with a higher estimated variance of the unobservables for Muslims, these effects are consistent with a low level of standardization of the observables.<sup>36</sup> Yet, the overall magnitude of anti-Muslim discrimination at this level is the same as that reported in Table 3, and would be even higher if standardization had occurred at a high level, i.e. one that exceeds the threshold above which the recruiters call back. Put differently, anti-Muslim discrimination is fully robust to the possibility that the recruiters hold different beliefs on the variance of applicants' unobserved productivity.

## 5.4 A Muslim effect or a religious minority effect?

To investigate whether Muslims are discriminated against due to their Islamic affiliation or simply due to their religious minority status, applicants of Jewish culture are introduced in the experimental setup. Similar to what was done for Christian and Muslim applicants, their religious culture is conveyed through two pieces of information. First, their first name. Based on the INSEE Name Frequency Dataset, one among the five most frequent Jewish first names<sup>37</sup> is randomly selected. The outcome of this random draw is “Dov” for Jewish men and “Esther” for Jewish women.<sup>38</sup> Contrary

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<sup>36</sup>This result is not surprising. Although the quality of the fictitious applications is objectively good, it may still lie below that of the *real* applicants who applied to the same job ads for at least two reasons: (i) the short work experience of the fictive candidates due to their young age and (ii) the high competition among job candidates in a period of economic downturn.

<sup>37</sup>A Jewish first name is defined as a first name of Hebrew origin that has not become common in France, i.e. that has not become part of the French Christian culture.

<sup>38</sup>The top 5 for (i) Jewish male first names is “Joshua/Josue”, “Isaac”, “Solal”, “Jacob” and “Dov/Dove”; (ii) Jewish female first names is “Rachel/Rachelle”, “Deborah”, “Esther”, “Rebecca” and “Hannah”. These top 5 are obtained after excluding (i) dual gender first names (e.g. “Noah/Noa”, “Noam”, “Yael”); (ii) the male first names “Israel” and “Levy” since “Israel” would not allow distinguishing between attitudes toward Jews and attitudes toward Israel and “Levy” is primarily a last name in France.

to applicants of Christian and Muslim culture, the second signal of religious culture for Jews does not concern the religious denomination of the junior high school from which they graduated in Beirut. Dov and Esther also graduated from a private bilingual French-Arab secondary school. However, it is not denominational given that there is no Jewish school in Beirut. Rather, the second signal of religious tradition for Dov and Esther relates to the “language skills” section of their CV. They are the only candidates who show a second mother tongue, Hebrew, on top of Arabic which is a mother tongue for all the candidates. To annihilate the possibility that this particularity provides an advantage to Jewish applicants, the CV of Dov and Esther emphasizes that they are proficient in speaking Hebrew, not in writing or reading it.

Like for applicants of Christian and Muslim culture, applicants of Jewish culture are either not religious or religious, and either good or outstanding. The signal of non-religiosity, as well as the quality treatment for Jews are the same as for applicants of other religious culture. Only the signal of religiosity differs, since this signal is specific to each religious culture. Dov and Esther indicate that they “train young people in the *Jewish* scouting association *Israelite Girl and Boy Scouts of France*”.<sup>39</sup>

Table 7d tests whether the two main results of the correspondence study apply to applicants of Jewish culture. More precisely, it investigates (i) whether these applicants are discriminated against relative to applicants of Christian culture ; (ii) whether the religiosity penalty for applicants of Jewish background is as strong as that experienced by their Muslim counterparts. Panel A of Table 7d reports the OLS estimates of Equation (1) when  $\mathbf{1}^M(i)$  is replaced by  $\mathbf{1}^J(i)$ , a dummy equal to 1 if the applicant is of Jewish culture and 0 if he or she is of Christian culture. Contrary to Table 3, it reveals no anti-Jew hiring discrimination. Panel B of Table 7d goes a step further by displaying the OLS estimates of Equation (2) when  $\mathbf{1}^M(i)$  is replaced by  $\mathbf{1}^J(i)$  and interacted with the “religiosity” dummy. It indicates that the religiosity penalty for applicants of Jewish culture is lower than the religiosity penalty experienced by their Muslim counterparts. As an illustration, Jews and Muslims are not discriminated against when they are not religious. But Muslims lose ground when they are religious to a greater extent than Jews: the probability of a positive callback for religious Muslims is 5.8 percentage points lower than that of non-religious Christians (statistically significant at the 99% confidence level – see row (f) in Panel A of Table 4b), while the difference in callback rates between religious Jews and non-religious Christians is not significant, neither statistically or in magnitude (see row (c) in Panel B of Table 7d).

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<sup>39</sup>See <https://www.eeif.org/>.

Table 7e complements Panel B of Table 7d by presenting the OLS estimates of Equation (4) when the dummy  $\mathbb{1}^{R'}(i)$  takes the value 1 if the applicant's first name is typically Jewish and 0 otherwise, i.e. "Esther" vs "Myriam" for Jewish women and "Dov" vs "Adam" for Jewish men. This alternative measure of religiosity has no impact on the callback rate of Jewish men, while it exerts a statistically significant negative effect on the callback rate of Muslim men (see Table 7b). This series of results suggest that Muslims are not discriminated against simply due to their religious minority status.

## 6 Conclusion

Relying on a correspondence study conducted in France before the 2015 attacks, this paper compares the callback rates of Muslim and Christian immigrants of the same national origin whose religiosity varies, from non-religious to religious. The results reveal that Muslims *qua* Muslims are discriminated against in France: the callback rate of applicants of Muslim culture (11.7%) is 6.7 percentage points lower than that of their Christian counterparts (18.4%). But this general finding masks substantial variation along religiosity, gender and quality. Although non-religious Muslims show consistently lower callback rates than non-religious Christians (12.9% vs 16.1%), this difference is modest and not statistically significant. But Muslims further lose ground when they stress their religiosity, unless they show an outstanding profile. This religiosity penalty leads religious Muslims to be discriminated against relative to non-religious Christians. This gap further widens when religious Muslims are compared to *religious* Christians. While the signal of religiosity constitutes a penalty for Muslims, it works as a premium for Christians: their callback rate is boosted by the disclosure of their religiosity in contexts where their application may not be fully reassuring to the recruiters. Consequently, religious Muslims must submit twice as many applications as religious Christians before being called back by the recruiters. This result is largely driven by male applicants, due to the strong religiosity premium experienced by Christian men: the callback rate of religious Muslim men (4.9%) is nearly four times lower than that of their Christian counterparts (17.9%).

Anti-Muslim discrimination is robust to alternative measures of the callback rate and religiosity. It also holds after taking into account that recruiters may have different beliefs not only on the mean but also on the variance of Christians' and Muslims' unobserved productivity. Finally, introducing fictive applicants of Jewish culture in the experimental setup shows that Muslims are discriminated against due to their Islamic affiliation, not due to their religious minority status.

One potential limitation of these findings resides in the incapacity of a correspondence study to

measure eventual differences in the rates at which individuals from different groups get *hired*. To detect those, it would be necessary to prolong the correspondence study (and the fiction) by an audit study, i.e. sending fake applicants, the “auditors”, to the job interviews.<sup>40</sup> Cédiey and Foroni (2008) are the only researchers to have combined a correspondence study and an audit study in France. These authors show that minority applicants (French persons of North African or sub-Saharan African origins) are subjected to discrimination throughout the recruitment process in comparison to majority applicants (French persons with no recent immigrant background). Their chance of being invited to a hiring interview is lower, as is their chance of being offered the job once the interview has taken place. These conclusions suggest that this paper’s main findings are conservative: they risk underestimating anti-Muslim discrimination, not overestimating it.

This paper contributes to explain the strong hiring discrimination against French applicants of North African and Middle Eastern origin (relative to French applicants with no recent immigrant background) that a series of correspondence studies have been consistently revealing since their inception in France, in the mid-2000s. Indeed, applicants of North African and Middle Eastern origin are spontaneously associated with Islam by the recruiters (IMS-Entreprendre pour la Cité survey (2014)).

How to combat such discrimination? This paper suggests that anti-Muslim hiring discrimination is statistical: recruiters discriminate against religious Muslims unless they are outstanding. This finding is consistent with religious Muslims being associated to a risk of problematic behavior in the workplace that leads to discrimination when the quality of their CV is not sufficient to counterbalance this risk (a pattern that is surely becoming even more pervasive after the 2015 attacks<sup>41</sup>). Yet, although the large majority of requests of a religious nature that HR managers and staff report to tackle emanate from Muslim employees, the 2013 to 2016 OFRE/Randstad surveys indicate that only a minority (less than 10%) of these requests result in “a stalemate or a conflict” (i.e. the manager is opposed to the employee’s request although this request is legal or the employee maintains his/her

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<sup>40</sup> Although audit studies have become popular in the early 1990s (Cross et al. (1990), Turner, Fix and Struyk (1991) and Bendick, Jackson and Reinoso (1994)), they have soon been subject to serious criticism. First, despite efforts to match auditors on several characteristics, differences that are potentially critical for the recipients of their applications inevitably remain. Second, auditors obviously know the purpose of the study they are part of. This can lead them to consciously or subconsciously behave in a way consistent or inconsistent with their beliefs about how different groups are treated. Third, audit studies are extremely expensive, which precludes researchers from generating large samples (Bertrand and Mullainathan (2004)).

<sup>41</sup> As an illustration, the proportion of a representative sample of French respondents who perceive Muslims in France as a threat has increased between the period before and the period after these attacks: this proportion was equal to 43% in 2012 but reaches 47% in 2016 (IFOP (2016)).

request although this request is illegal<sup>42</sup>). A way to reduce anti-Muslim statistical discrimination would consist in curtailing this proportion through spreading out instructional guides that recall employers, employees as well as job seekers the legal barriers to the expression of religious convictions in the workplace. This approach was recently supported by the French Ministry of Labour with the publication in January 2017 of an official guide on dealing with religious issues within French firms.<sup>43</sup> It remains however to evaluate whether such a guide is indeed effective at reducing anti-Muslim discrimination France.

But anti-Muslim discrimination is not only statistical. Consistent with previous studies, this paper suggests that it is also taste-based outside the hiring process. Here, prejudice-reducing interventions as early as primary school might be the adequate strategy, one that Emmanuel Macron has committed to implement during his presidency.<sup>44</sup> Unfortunately, little is known on how these interventions must be devised to maximize their impact and its persistence (Broockman and Kalla (2016)). All in all, it is urgent to identify policies that could improve the fate of Muslims in France. Anti-Muslim discrimination indeed generates a discriminatory equilibrium (Adida, Laitin and Valfort (2016), Glover, Pallais and Parienté (2017)) that has the potential to seriously hamper France's social cohesion.

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<sup>42</sup>The only legal barriers to the expression of religious convictions are what the anti-discrimination authority in France calls “the protection of individuals” (i.e. the practice of one’s religion cannot extend to proselytizing at work, or get in the way of safety requirements and the requirements of hygiene in the workplace) and “the proper functioning of the firm” (i.e. religious practice (i) does not negatively affect one’s ability to perform one’s assigned tasks, (ii) does not create organizational problems that hamper teamwork, and (iii) does not undermine the firm’s commercial prospects). In this setting, requests for an adaptation of the work schedule for religious purposes, to miss work for religious festivals, or to pray during breaks are legal. By contrast, requests to pray during working hours, to no work with a woman, to work only with co-religionists or to not perform specific tasks that are part of the employee’s mission are illegal.

<sup>43</sup>See <http://travail-emploi.gouv.fr/droit-du-travail/relations-au-travail/pouvoir-de-direction/guide-du-fait-religieux-dans-les-entreprises-privees/>.

<sup>44</sup>See the following excerpt from his electoral platform:

<https://en-marche.fr/article/reussir-dans-nos-quartiers-propositons>

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## Tables

**Table 1:** Descriptive statistics for the sample composed of applicants of Christian and Muslim culture

	N	Mean	Std. dev.	Min	Max
<b>Dependent variable</b>					
Positive callback from the recruiter	3,331	0.151	0.358	0	1
<b>Main experimental variables</b>					
Muslim (vs Christian) religious culture	3,331	0.491	0.500	0	1
Religious (vs non-religious)	3,331	0.496	0.500	0	1
<b>Other experimental variables</b>					
Male (vs female)	3,331	0.493	0.500	0	1
Outstanding (vs good)	3,331	0.498	0.500	0	1
<b>Job characteristics</b>					
Accountant (vs accounting clerk) job	3,331	0.515	0.500	0	1
CDI (vs CDD)	3,329	0.567	0.496	0	1
<b>Firm characteristics</b>					
<i>Sector of activity</i>					
Private	3,325	0.860	0.347	0	1
Public	3,325	0.072	0.258	0	1
Non-profit	3,325	0.068	0.252	0	1
Primary	3,323	0.007	0.083	0	1
Secondary	3,323	0.077	0.266	0	1
Tertiary	3,323	0.916	0.277	0	1
<i>Size</i>					
Less than 250 employees	3,331	0.816	0.388	0	1
More than 250 employees	3,331	0.060	0.238	0	1
Unknown	3,331	0.124	0.330	0	1
<b>Region characteristics</b>					
Unemployment rate	3,331	0.096	0.015	0.069	0.146
Vote share of National Front	3,331	0.172	0.044	0.123	0.250
Share of EVS/WVS respondents who self-identify as “Muslim”	3,331	0.023	0.014	0.003	0.042
Share of immigrants from North Africa and Turkey	3,331	0.035	0.019	0.007	0.059

**Table 2:** Randomization tests

	“Religious culture” treatment			“Religiosity” treatment		
	Sample mean		P-value of test of equality	Sample mean		P-value of test of equality
	Christian	Muslim		Non-religious	Religious	
Accountant (vs accounting clerk job)	0.511	0.519	.643	0.518	0.510	.588
CDI (vs CDD)	0.563	0.570	.719	0.569	0.560	.489
Private sector	0.856	0.864	.521	0.871	0.850	.040**
Public sector	0.071	0.073	.858	0.065	0.076	.134
Non-profit sector	0.073	0.064	.286	0.064	0.073	.196
Primary sector	0.007	0.007	.892	0.004	0.007	.333
Secondary sector	0.079	0.075	.644	0.072	0.080	.254
Tertiary sector	0.914	0.919	.628	0.924	0.913	.172
Less than 250 employees	0.824	0.807	.203	0.818	0.803	.172
More than 250 employees	0.058	0.062	.589	0.062	0.068	.330
Unknown firm’s size	0.118	0.131	.269	0.121	0.129	.372
Unemployment rate	0.096	0.096	.661	0.096	0.096	.965
Vote share of National Front	0.172	0.172	.979	0.172	0.172	.729
Share of EVS/WVS respondents who self-identify as “Muslim”	0.023	0.023	.942	0.023	0.023	.507
Share of immigrants from North Africa and Turkey	0.035	0.035	.808	0.035	0.034	.494
----- “Gender” treatment -----						
	“Gender” treatment			“Quality” treatment		
	Sample mean		P-value of test of equality	Sample mean		P-value of test of equality
	Female	Male		Good	Outstanding	
Accountant (vs accounting clerk) job	0.507	0.512	.701	0.502	0.526	.087*
CDI (vs CDD)	0.559	0.559	.978	0.556	0.573	.236
Private sector	0.858	0.863	.547	0.859	0.862	.717
Public sector	0.070	0.070	.970	0.068	0.073	.482
Non-profit sector	0.073	0.068	.435	0.073	0.064	.226
Primary sector	0.008	0.004	.037**	0.006	0.005	.376
Secondary sector	0.075	0.078	.682	0.075	0.078	.712
Tertiary sector	0.917	0.918	.851	0.919	0.918	.905
Less than 250 employees	0.805	0.816	.263	0.807	0.814	.551
More than 250 employees	0.066	0.060	.326	0.061	0.069	.291
Unknown firm’s size	0.129	0.124	.548	0.132	0.118	.134
Unemployment rate	0.096	0.096	.132	0.096	0.096	.241
Vote share of National Front	0.173	0.172	.264	0.173	0.171	.365
Share of EVS/WVS respondents who self-identify as “Muslim”	0.023	0.023	.686	0.024	0.023	.233
Share of immigrants from North Africa and Turkey	0.034	0.035	.443	0.035	0.035	.737

Note: This table reports means across subsamples of the experimental sample and presents simple randomization tests based on comparing the means across the subsamples. \*, \*\* and \*\*\* indicate statistical significance at the 90%, 95% and 99% confidence levels respectively.

**Table 3:** Probability of a positive callback, by religious culture: Marginal probit and OLS analysis

	Dependent variable: Probability of a positive callback						
	Marg. probit (1)	Marg. probit (2)	Marg. probit (3)	Marg. probit (4)	Marg. probit (5)	Marg. probit (6)	OLS (7)
(1) Muslim (vs Christian) religious culture	-0.067*** (0.018)	-0.069*** (0.017)	-0.068*** (0.017)	-0.067*** (0.017)	-0.067*** (0.017)	-0.067*** (0.017)	-0.066*** (0.017)
(2) Religious (vs non-religious)		0.011 (0.013)	0.009 (0.013)	0.008 (0.013)	0.007 (0.013)	0.008 (0.013)	0.009 (0.013)
(3) Male (vs female)		-0.096*** (0.015)	-0.095*** (0.015)	-0.095*** (0.015)	-0.095*** (0.015)	-0.094*** (0.015)	-0.094*** (0.015)
(4) Outstanding (vs good)		0.046*** (0.013)	0.047*** (0.013)	0.049*** (0.013)	0.048*** (0.013)	0.048*** (0.013)	0.049*** (0.013)
(5) Accountant (vs accounting clerk) job			0.018 (0.011)	0.018* (0.010)	0.017* (0.010)	0.016 (0.010)	0.017 (0.010)
(6) CDI (vs CDD)				-0.057*** (0.015)	-0.054*** (0.015)	-0.054*** (0.015)	-0.055*** (0.015)
(7) Private (vs public) sector					-0.053** (0.021)	-0.054*** (0.021)	-0.058*** (0.022)
#	(8) Non-profit (vs public) sector				0.024 (0.028)	0.022 (0.028)	0.015 (0.028)
	(9) Primary (vs secondary) sector				-0.037 (0.066)	-0.038 (0.065)	-0.039 (0.065)
	(10) Tertiary (vs secondary) sector				-0.007 (0.020)	-0.006 (0.020)	-0.007 (0.021)
	(11) $\leq$ 250 employees (vs unknown)				-0.010 (0.020)	-0.010 (0.020)	-0.010 (0.020)
	(12) > 250 employees (vs unknown)				-0.037 (0.028)	-0.038 (0.028)	-0.041 (0.028)
<u>Control for:</u>							
“Religious culture” treatment	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Other treatments	No	Yes	Yes	Yes	Yes	Yes	Yes
Job characteristics	No	No	Yes	Yes	Yes	Yes	Yes
Firm characteristics	No	No	No	Yes	Yes	Yes	Yes
Month fixed effects	No	No	No	No	Yes	Yes	Yes
Region fixed effects	No	No	No	No	No	Yes	Yes
(Pseudo-)R <sup>2</sup>	0.010	0.038	0.046	0.052	0.055	0.062	0.051
Observations	3,331	3,331	3,329	3,321	3,321	3,321	3,321

Note: Standard errors between parentheses are clustered at the *département* level. \*, \*\* and \*\*\* indicate statistical significance at the 90%, 95% and 99% confidence levels respectively.

**Table 4a:** Heterogeneity of the “Muslim vs Christian culture” effect, by religiosity: OLS analysis

(1) Muslim (vs Christian) religious tradition	<b>Panel A: All</b>
(2) Muslim (vs Christian) religious tradition × Religious (vs non-religious)	-0.034 (0.022)
(3) Religious (vs non-religious)	-0.065** (0.025)
	0.041** (0.020)
	R <sup>2</sup> = 0.053; N=3,321
(1) Muslim (vs Christian) religious tradition	<b>Panel B: Female applicants of good quality</b>
(2) Muslim (vs Christian) religious tradition × Religious (vs non-religious)	-0.005 (0.041)
(3) Religious (vs non-religious)	-0.124** (0.048)
	0.083** (0.041)
	R <sup>2</sup> = 0.076; N=830
(1) Muslim (vs Christian) religious tradition	<b>Panel C: Female applicants of outstanding quality</b>
(2) Muslim (vs Christian) religious tradition × Religious (vs non-religious)	-0.071 (0.044)
(3) Religious (vs non-religious)	0.048 (0.059)
	-0.045 (0.043)
	R <sup>2</sup> = 0.078; N=854
(1) Muslim (vs Christian) religious tradition	<b>Panel D: Male applicants of good quality</b>
(2) Muslim (vs Christian) religious tradition × Religious (vs non-religious)	-0.046* (0.027)
(3) Religious (vs non-religious)	-0.016 (0.032)
	-0.035 (0.029)
	R <sup>2</sup> = 0.078; N=837
(1) Muslim (vs Christian) religious tradition	<b>Panel E: Male applicants of outstanding quality</b>
(2) Muslim (vs Christian) religious tradition × Religious (vs non-religious)	-0.039 (0.026)
(3) Religious (vs non-religious)	-0.173*** (0.038)
	0.174*** (0.034)
	R <sup>2</sup> = 0.117; N=800
For all panels, control for:	
“Religious culture” treatment	Yes
Other treatments	Yes
Job characteristics	Yes
Firm characteristics	Yes
Month fixed effects	Yes
Region fixed effects	Yes

*Note:* The dependent variable is the probability of receiving a positive callback from the recruiter. Standard errors between parentheses are clustered at the *département* level. \*, \*\* and \*\*\* indicate statistical significance at the 90%, 95% and 99% confidence levels respectively.

**Table 4b:** Heterogeneity of the “Muslim vs Christian culture” effect, by religiosity:  
Magnitude and statistical significance, based on Table 4a

(a) “Non-religious Muslim vs non-religious Christian” effect: coef. (1)	<b>Panel A: All</b>
(b) “Religious Muslim vs religious Christian” effect: coefs. (1)+(2)	-0.034 (p-value: .129)
(c) “Religious Christian vs non-religious Christian” effect: coef. (3)	-0.099*** (p-value: .000)
(d) “Religious Muslim vs non-religious Muslim” effect: coefs. (2)+(3)	+0.041** (p-value: .042)
(e) Difference-in-difference (b)-(a) or (d)-(c): coef. (2)	-0.024 (p-value: .154)
(f) “Religious Muslim vs non-religious Christian” effect: coefs. (1)+(2)+(3)	-0.065** (p-value: .012)
	-0.058*** (p-value: .003)
(a) “Non-religious Muslim vs non-religious Christian” effect: coef. (1)	<b>Panel B: Female applicants of good quality</b>
(b) “Religious Muslim vs religious Christian” effect: coefs. (1)+(2)	-0.005 (p-value: .894)
(c) “Religious Christian vs non-religious Christian” effect: coef. (3)	-0.129*** (p-value: .001)
(d) “Religious Muslim vs non-religious Muslim” effect: coefs. (2)+(3)	+0.083** (p-value: .045)
(e) Difference-in-difference (b)-(a) or (d)-(c): coef. (2)	-0.041 (p-value: .250)
(f) “Religious Muslim vs non-religious Christian” effect: coefs. (1)+(2)+(3)	-0.124** (p-value: .011)
	-0.046 (p-value: .154)
(a) “Non-religious Muslim vs non-religious Christian” effect: coef. (1)	<b>Panel C: Female applicants of outstanding quality</b>
(b) “Religious Muslim vs religious Christian” effect: coefs. (1)+(2)	-0.071 (p-value: .112)
(c) “Religious Christian vs non-religious Christian” effect: coef. (3)	-0.023 (p-value: .569)
(d) “Religious Muslim vs non-religious Muslim” effect: coefs. (2)+(3)	-0.045 (p-value: .294)
(e) Difference-in-difference (b)-(a) or (d)-(c): coef. (2)	+0.003 (p-value: .950)
(f) “Religious Muslim vs non-religious Christian” effect: coefs. (1)+(2)+(3)	+0.048 (p-value: .416)
	-0.068 (p-value: .154)
(a) “Non-religious Muslim vs non-religious Christian” effect: coef. (1)	<b>Panel D: Male applicants of good quality</b>
(b) “Religious Muslim vs religious Christian” effect: coefs. (1)+(2)	-0.046* (p-value: .095)
(c) “Religious Christian vs non-religious Christian” effect: coef. (3)	-0.062*** (p-value: .003)
(d) “Religious Muslim vs non-religious Muslim” effect: coefs. (2)+(3)	-0.035 (p-value: .223)
(e) Difference-in-difference (b)-(a) or (d)-(c): coef. (2)	-0.051* (p-value: .034)
(f) “Religious Muslim vs non-religious Christian” effect: coefs. (1)+(2)+(3)	-0.016 (p-value: .617)
	-0.097*** (p-value: .001)
(a) “Non-religious Muslim vs non-religious Christian” effect: coef. (1)	<b>Panel E: Male applicants of outstanding quality</b>
(b) “Religious Muslim vs religious Christian” effect: coefs. (1)+(2)	-0.039 (p-value: .139)
(c) “Religious Christian vs non-religious Christian” effect: coef. (3)	-0.212*** (p-value: .000)
(d) “Religious Muslim vs non-religious Muslim” effect: coefs. (2)+(3)	+0.174*** (p-value: .000)
(e) Difference-in-difference (b)-(a) or (d)-(c): coef. (2)	+0.001 (p-value: .972)
(f) “Religious Muslim vs non-religious Christian” effect: coefs. (1)+(2)+(3)	-0.173*** (p-value: .000)
	-0.038 (p-value: .100)

*Note:* This table reports the coefficients or the sum of some of the coefficients reported in Table 4a, as well as their p-value. The p-values are determined based on a Wald test. \*, \*\* and \*\*\* indicate significance at the 90%, 95% and 99% confidence levels.

**Table 4c:** Heterogeneity of the “Muslim vs Christian culture” effect, by gender: OLS analysis

	<b>Panel A: All</b>
(1) Muslim (vs Christian) religious tradition	-0.052* (0.026)
(2) Muslim (vs Christian) religious tradition $\times$ Male (vs female)	-0.029 (0.025)
(3) Male (vs female)	-0.080*** (0.023)
	$R^2 = 0.051; N=3,321$
	<b>Panel B: Non-religious applicants</b>
(1) Muslim (vs Christian) religious tradition	-0.036 (0.035)
(2) Muslim (vs Christian) religious tradition $\times$ Male (vs female)	0.003 (0.038)
(3) Male (vs female)	-0.107*** (0.030)
	$R^2 = 0.061; N=1,675$
	<b>Panel C: Religious applicants</b>
(1) Muslim (vs Christian) religious tradition	-0.068** (0.031)
(2) Muslim (vs Christian) religious tradition $\times$ Male (vs female)	-0.060* (0.034)
(3) Male (vs female)	-0.047 (0.029)
	$R^2 = 0.073; N=1,646$
For all panels, control for:	
“Religious culture” treatment	Yes
Other treatments	Yes
Job characteristics	Yes
Firm characteristics	Yes
Month fixed effects	Yes
Region fixed effects	Yes

*Note:* The dependent variable is the probability of receiving a positive callback from the recruiter. Standard errors between parentheses are clustered at the *département* level. \*, \*\* and \*\*\* indicate statistical significance at the 90%, 95% and 99% confidence levels respectively.

**Table 4d:** Heterogeneity of the “Muslim vs Christian culture” effect, by quality: OLS analysis

	<b>Panel A: All</b>
(1) Muslim (vs Christian) religious tradition	-0.055*** (0.020)
(2) Muslim (vs Christian) religious tradition × Outstanding (vs good)	-0.023 (0.023)
(3) Outstanding (vs good)	0.060*** (0.018)
	$R^2 = 0.051; N=3,321$
	<b>Panel B: Non-religious applicants</b>
(1) Muslim (vs Christian) religious tradition	-0.018 (0.025)
(2) Muslim (vs Christian) religious tradition × Outstanding (vs good)	-0.032 (0.029)
(3) Outstanding (vs good)	0.047** (0.021)
	$R^2 = 0.061; N=1,675$
	<b>Panel C: Religious applicants</b>
(1) Muslim (vs Christian) religious tradition	-0.088*** (0.024)
(2) Muslim (vs Christian) religious tradition × Outstanding (vs good)	-0.020 (0.028)
(3) Outstanding (vs good)	0.080*** (0.027)
	$R^2 = 0.072; N=1,646$
<hr/>	
For all panels, control for:	
“Religious culture” treatment	Yes
Other treatments	Yes
Job characteristics	Yes
Firm characteristics	Yes
Month fixed effects	Yes
Region fixed effects	Yes

*Note:* The dependent variable is the probability of receiving a positive callback from the recruiter. Standard errors between parentheses are clustered at the *département* level. \*, \*\* and \*\*\* indicate statistical significance at the 90%, 95% and 99% confidence levels respectively.

**Table 5a:** Heterogeneity of the “Muslim vs Christian culture” effect, by job characteristics: OLS analysis

	<b>Panel A: Accountant (vs accounting clerk) job</b>
(1) Muslim (vs Christian) religious tradition	-0.045** (0.018)
(2) Muslim (vs Christian) religious tradition × Accountant (vs accounting clerk) job	-0.043** (0.019)
(3) Accountant (vs accounting clerk) job	0.037** (0.016)
R <sup>2</sup>	0.051
Observations	3,321
	<b>Panel B: CDI (vs CDD)</b>
(1) Muslim (vs Christian) religious tradition	-0.082*** (0.022)
(2) Muslim (vs Christian) religious tradition × CDI (vs CDD)	0.027 (0.023)
(3) CDI (vs CDD)	-0.068*** (0.020)
R <sup>2</sup>	0.051
Observations	3,321
For all panels, control for:	
“Religious culture” treatment	Yes
Other treatments	Yes
Job characteristics	Yes
Firm characteristics	Yes
Month fixed effects	Yes
Region fixed effects	Yes

*Note:* The dependent variable is the probability of receiving a positive callback from the recruiter. Standard errors between parentheses are clustered at the *département* level. \*, \*\* and \*\*\* indicate statistical significance at the 90%, 95% and 99% confidence levels respectively.

**Table 5b:** Heterogeneity of the “Muslim vs Christian culture” effect, by firm characteristics: OLS analysis

	<u>Panel A: Private/non-profit (vs public) sector</u>
(1) Muslim (vs Christian) religious tradition	-0.059 (0.053)
(2) Muslim (vs Christian) religious tradition × Private (vs public) sector	-0.009 (0.055)
(3) Muslim (vs Christian) religious tradition × Non-profit (vs public) sector	0.007 (0.071)
(4) Private (vs public) sector	-0.053 (0.036)
(5) Non-profit (vs public) sector	0.015 (0.045)
R <sup>2</sup>	0.051
Observations	3,321
	<u>Panel B: Primary/tertiary (vs secondary) sector</u>
(1) Muslim (vs Christian) religious tradition	-0.095* (0.049)
(2) Muslim (vs Christian) religious tradition × Primary (vs secondary) sector	0.030 (0.150)
(3) Muslim (vs Christian) religious tradition × Tertiary (vs secondary) sector	0.031 (0.053)
(4) Primary (vs secondary) sector	-0.062 (0.113)
(5) Primary (vs tertiary) sector	-0.020 (0.037)
R <sup>2</sup>	0.051
Observations	3,321
	<u>Panel C: Less/more than 250 employees (vs unknown)</u>
(1) Muslim (vs Christian) religious tradition	-0.112*** (0.033)
(2) Muslim (vs Christian) religious tradition × Less than 250 employees (vs unknown)	0.054 (0.035)
(3) Muslim (vs Christian) religious tradition × More than 250 employees (vs unknown)	0.023 (0.067)
(4) Less than 250 employees (vs unknown)	-0.039 (0.031)
(5) More than 250 employees (vs unknown)	-0.062 (0.057)
R <sup>2</sup>	0.051
Observations	3,321
For all panels, control for:	
“Religious culture” treatment	Yes
Other treatments	Yes
Job characteristics	Yes
Firm characteristics	Yes
Month fixed effects	Yes
Region fixed effects	Yes

Note: The dependent variable is the probability of receiving a positive callback from the recruiter. Standard errors between parentheses are clustered at the *département* level. \*, \*\* and \*\*\* indicate statistical significance at the 90%, 95% and 99% confidence levels respectively.

**Table 5c:** Heterogeneity of the “Muslim vs Christian culture” effect, by region characteristics: OLS analysis

	<u>Panel A: Unemployment rate</u>
(1) Muslim (vs Christian) religious tradition	-0.024 (0.087)
(2) Muslim (vs Christian) religious tradition × Unemployment rate	-0.441 (0.826)
P-value of the Wald test: $(1)+0.146 \times (2) = 0$	.025**
R <sup>2</sup>	0.051
Observations	3,321
	<u>Panel B: Vote share of National Front</u>
(1) Muslim (vs Christian) religious tradition	-0.052 (0.073)
(2) Muslim (vs Christian) religious tradition × Vote share of National Front	-0.082 (0.383)
P-value of the Wald test: $(1)+0.250 \times (2) = 0$	.016**
R <sup>2</sup>	0.051
Observations	3,321
	<u>Panel C: Share of Muslims</u>
(1) Muslim (vs Christian) religious tradition	0.031 (0.076)
(2) Muslim (vs Christian) religious tradition × Share of Muslims	-2.004* (1.148)
R <sup>2</sup>	0.052
Observations	3,321
	<u>Panel D: Share of immigrants from North Africa/Turkey</u>
(1) Muslim (vs Christian) religious tradition	0.028 (0.076)
(2) Muslim (vs Christian) religious tradition × Share of immigrants from North Africa/Turkey	-1.424 (p-value: .104) (0.867)
R <sup>2</sup>	0.052
Observations	3,321
For all panels, control for:	
“Religious culture” treatment	Yes
Other treatments	Yes
Job characteristics	Yes
Firm characteristics	Yes
Month fixed effects	Yes
Region fixed effects	Yes

Note: The dependent variable is the probability of receiving a positive callback from the recruiter. Standard errors between parentheses are clustered at the *département* level. \*, \*\* and \*\*\* indicate statistical significance at the 90%, 95% and 99% confidence levels respectively.

**Table 6:** Exploring taste-based anti-Muslim discrimination: OLS analysis

	Dep. var.: Probability of being notified when the response is negative	Dep.var.: Tone of the negative response
Muslim (vs Christian) culture	-0.023 (p-value: .113) (0.014)	-0.176* (0.101)
R <sup>2</sup>	0.053	0.081
Observations	2,821	542
<u>Control for:</u>		
“Religious culture” treatment	Yes	Yes
Other treatments	Yes	Yes
Job characteristics	Yes	Yes
Firm characteristics	Yes	Yes
Month fixed effects	Yes	Yes
Region fixed effects	Yes	Yes

*Note:* Standard errors between parentheses are clustered at the *département* level. \*, \*\* and \*\*\* indicate statistical significance at the 90%, 95% and 99% confidence levels respectively.

**Table 7a:** Robustness checks: Alternative measures of the callback rate (OLS analysis)

	Original measure	Alternative measure 1	Alternative measure 2
<b>Panel A: Baseline</b>			
Muslim (vs Christian) religious tradition	-0.066*** (0.017) $R^2 = 0.051; N=3,321$	-0.045*** (0.012) $R^2 = 0.043; N=3,321$	-0.111*** (0.029) $R^2 = 0.049; N=3,321$
<b>Panel B: Heterogeneity by religiosity</b>			
(1) Muslim (vs Christian) religious tradition	-0.034 (0.022)	-0.019 (0.019)	-0.053 (0.040)
(2) Muslim (vs Christian) religious tradition $\times$ Religious (vs non-religious)	-0.065** (0.025)	-0.054** (0.023)	-0.119** (0.047)
(3) Religious (vs non-religious)	0.041** (0.020)	0.020 (0.018)	0.061* (0.037)
	$R^2 = 0.053; N=3,321$	$R^2 = 0.045; N=3,321$	$R^2 = 0.052; N=3,321$
<b>Panel C: Heterogeneity by gender</b>			
(1) Muslim (vs Christian) religious tradition	-0.052* (0.026)	-0.038** (0.018)	-0.090** (0.042)
(2) Muslim (vs Christian) religious tradition $\times$ Male (vs female)	-0.029 (0.025)	-0.014 (0.019)	-0.043 (0.041)
(3) Male (vs female)	-0.080*** (0.023)	-0.051*** (0.016)	-0.131*** (0.037)
	$R^2 = 0.051; N=3,321$	$R^2 = 0.043; N=3,321$	$R^2 = 0.050; N=3,321$
<b>Panel D: Heterogeneity by quality</b>			
(1) Muslim (vs Christian) religious tradition	-0.055*** (0.020)	-0.037** (0.016)	-0.091** (0.035)
(2) Muslim (vs Christian) religious tradition $\times$ Outstanding (vs good)	-0.023 (0.023)	-0.017 (0.021)	-0.040 (0.042)
(3) Outstanding (vs good)	0.060*** (0.018)	0.048*** (0.016)	0.108*** (0.033)
	$R^2 = 0.051; N=3,321$	$R^2 = 0.043; N=3,321$	$R^2 = 0.050; N=3,321$
For all panels, control for:			
“Religious culture” treatment	Yes	Yes	Yes
Other treatments	Yes	Yes	Yes
Job characteristics	Yes	Yes	Yes
Firm characteristics	Yes	Yes	Yes
Month fixed effects	Yes	Yes	Yes
Region fixed effects	Yes	Yes	Yes

Note: The dependent variable is the probability of receiving a positive callback from the recruiter. Standard errors between parentheses are clustered at the *département* level.  
 \*, \*\* and \*\*\* indicate statistical significance at the 90%, 95% and 99% confidence levels respectively.

**Table 7b:** Robustness checks: An alternative measure of religiosity (OLS analysis)

	Christian women	Christian men	Muslim women	Muslim men
Religious (vs neutral) first name	-0.038 (0.043)	0.106** (0.046)	-0.015 (0.043)	-0.047* (0.025)
R <sup>2</sup>	0.103	0.102	0.104	0.098
Observations	436	390	436	432
<u>Control for:</u>				
Job characteristics	Yes	Yes	Yes	Yes
Firm characteristics	Yes	Yes	Yes	Yes
Month fixed effects	Yes	Yes	Yes	Yes
Region fixed effects	Yes	Yes	Yes	Yes

*Note:* The dependent variable is the probability of receiving a positive callback from the recruiter. Standard errors between parentheses are clustered at the *département* level. \*, \*\* and \*\*\* indicate statistical significance at the 90%, 95% and 99% confidence levels respectively.

**Table 7c:** Robustness checks: Taking variance-based statistical discrimination into account (probit and heteroskedastic probit analysis)

	<u>Panel A: Probit model (marginal estimates)</u>
Muslim (vs Christian) religious tradition	-0.067*** (0.018)
	<u>Panel B: Heteroskedastic probit model (marginal estimates)</u>
Muslim (vs Christian) religious tradition	-0.066*** (0.019)
Standard deviation of unobservables, Muslim culture/Christian culture	1.131
Wald test statistic, null hypothesis that ratio of standard deviations = 1 (p-value)	.786
Marginal effect of race through level	-0.095 (0.098)
Marginal effect of race through variance	+0.029 (0.103)

*Note:* The dependent variable is the probability of receiving a positive callback from the recruiter. Standard errors between parentheses are clustered at the *département* level. \*, \*\* and \*\*\* indicate statistical significance at the 90%, 95% and 99% confidence levels respectively.

**Table 7d:** Robustness checks: “Muslim” effect vs “religious minority” effect, based on Equations (1) and (2) (OLS analysis)

<u>Panel A: Impact of being of Jewish vs Christian culture (Equation (1))</u>	
Jewish (vs Christian) culture	-0.018 (0.014) $R^2 = 0.044; N=3,288$
(1) Jewish (vs Christian) culture	0.008 (0.018)
(2) Jewish (vs Christian) culture $\times$ Religious (vs non-religious)	-0.053* (0.028)
(3) Religious (vs non-religious)	0.041** (0.020) $R^2 = 0.045; N=3,288$
(a) “Non-religious Jew vs non-religious Christian” effect: coef. (1)	0.008 (p-value: .638)
(b) “Religious vs non-religious Jew” effect: coeffs. (2)+(3)	-0.012 (p-value: .514)
(c) “Religious Jew vs non-religious Christian” effect: coeffs. (1)+(2)+(3)	-0.004 (p-value: .850)
For all panels, control for:	
“Religious culture” treatment	Yes
Other treatments	Yes
Job characteristics	Yes
Firm characteristics	Yes
Month fixed effects	Yes
Region fixed effects	Yes

*Note:* The dependent variable is the probability of receiving a positive callback from the recruiter. Standard errors between parentheses are clustered at the *département* level. \*, \*\* and \*\*\* indicate statistical significance at the 90%, 95% and 99% confidence levels respectively.

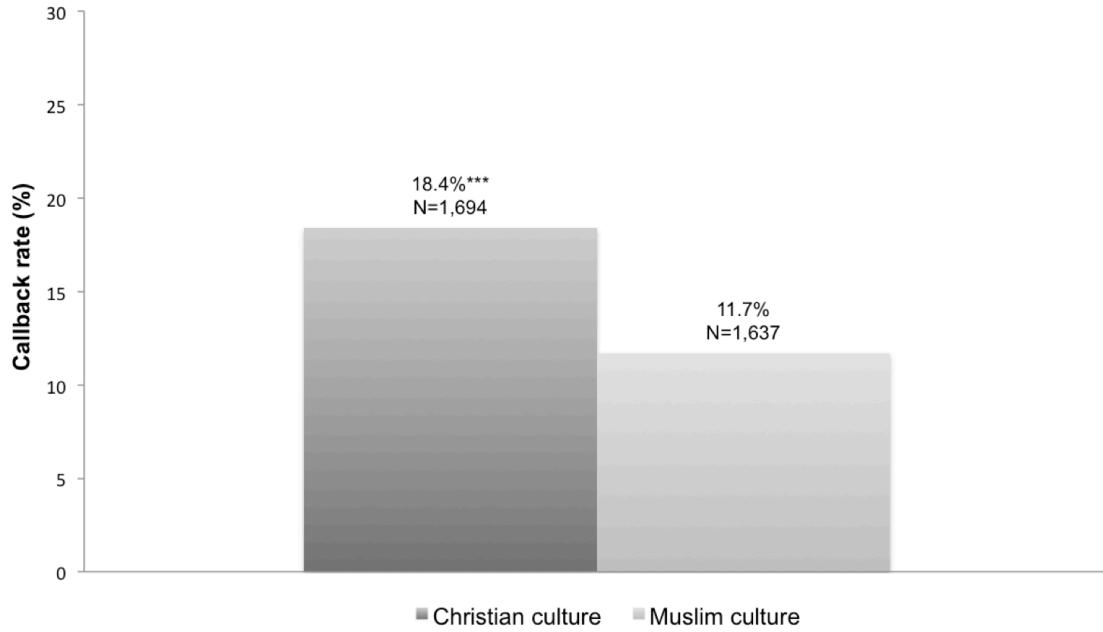
**Table 7e:** Robustness checks: “Muslim” effect vs “religious minority” effect, based on Equations (4) (OLS analysis)

	Jewish women	Jewish men
Religious (vs neutral) first name	-0.043 (0.046)	0.017 (0.047)
$R^2$	0.125	0.133
Observations	419	385
<u>Control for:</u>		
Job characteristics	Yes	Yes
Firm characteristics	Yes	Yes
Month fixed effects	Yes	Yes
Region fixed effects	Yes	Yes

*Notes:* The dependent variable is the probability of receiving a positive callback from the recruiter. Standard errors between parentheses are clustered at the *département* level. \*, \*\* and \*\*\* indicate statistical significance at the 90%, 95% and 99% confidence levels respectively.

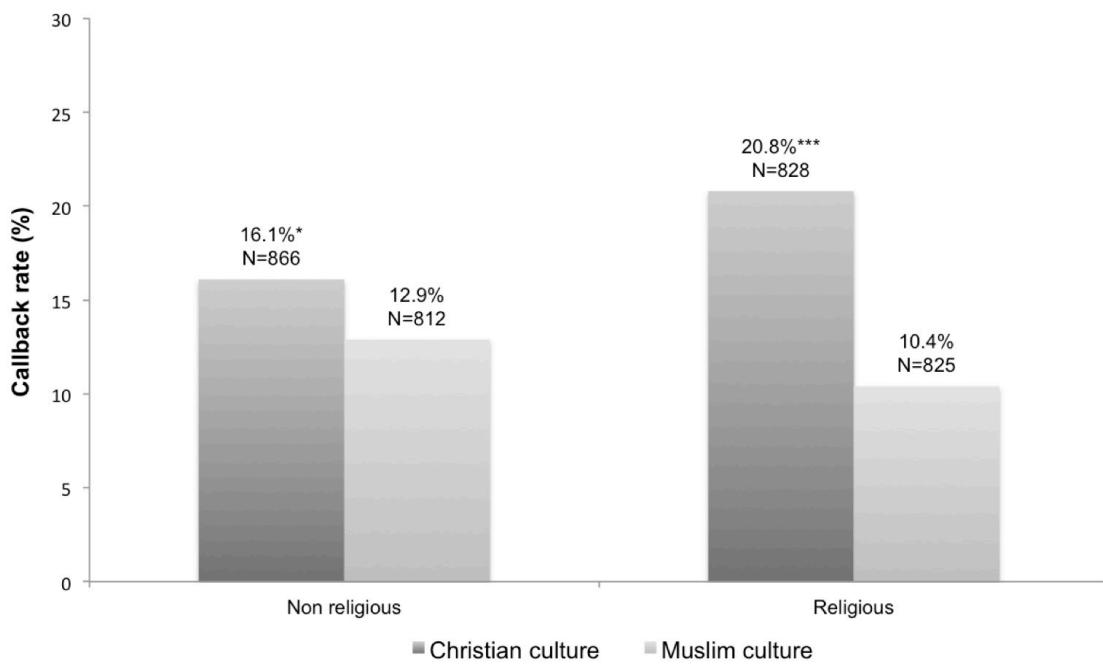
## Figures

**Figure 1:** Probability of a positive callback, by religious culture:  
Difference-of-means analysis



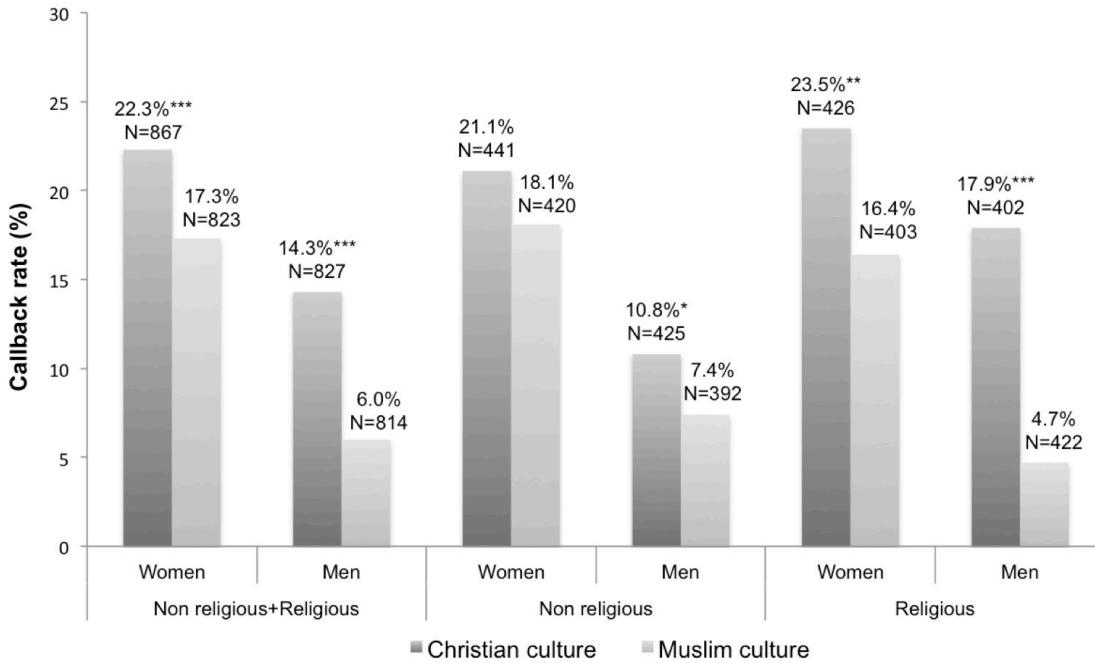
Note: \*, \*\* and \*\*\* indicate that the difference in callback rates between applicants of Christian and Muslim culture is statistically significant at the 90%, 95% and 99% confidence levels respectively.

**Figure 2:** Heterogeneity of the “Muslim vs Christian culture” effect, by religiosity:  
Difference-of-means analysis



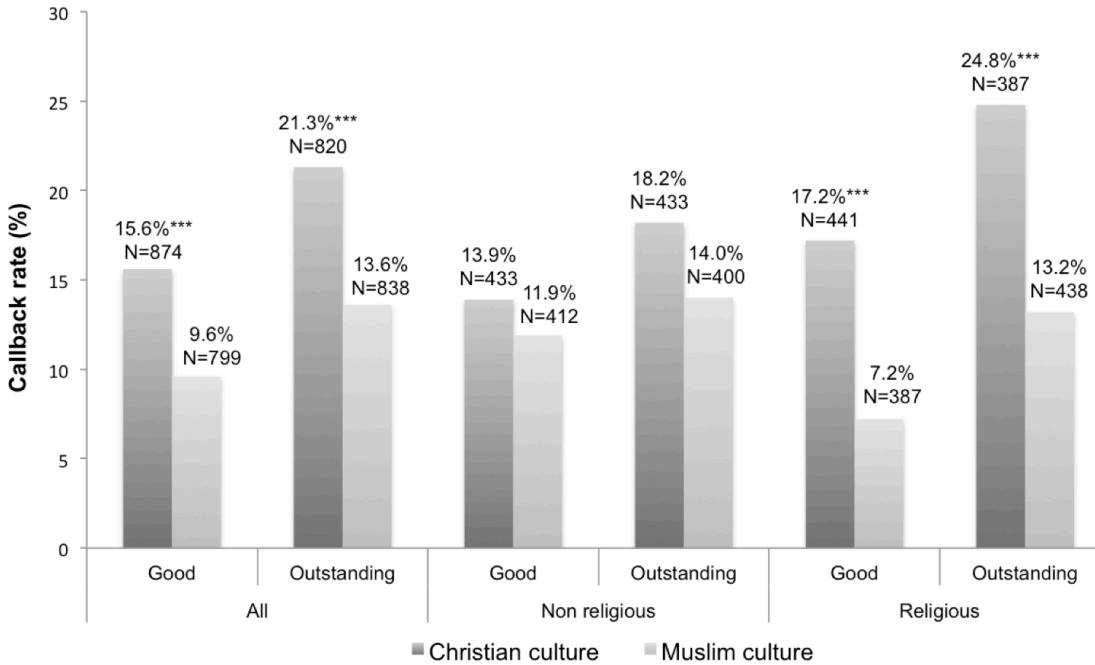
Note: \*, \*\* and \*\*\* indicate that the difference in callback rates between applicants of Christian and Muslim culture is statistically significant at the 90%, 95% and 99% confidence levels respectively.

**Figure 3:** Heterogeneity of the “Muslim vs Christian culture” effect, by gender:  
Difference-of-means analysis



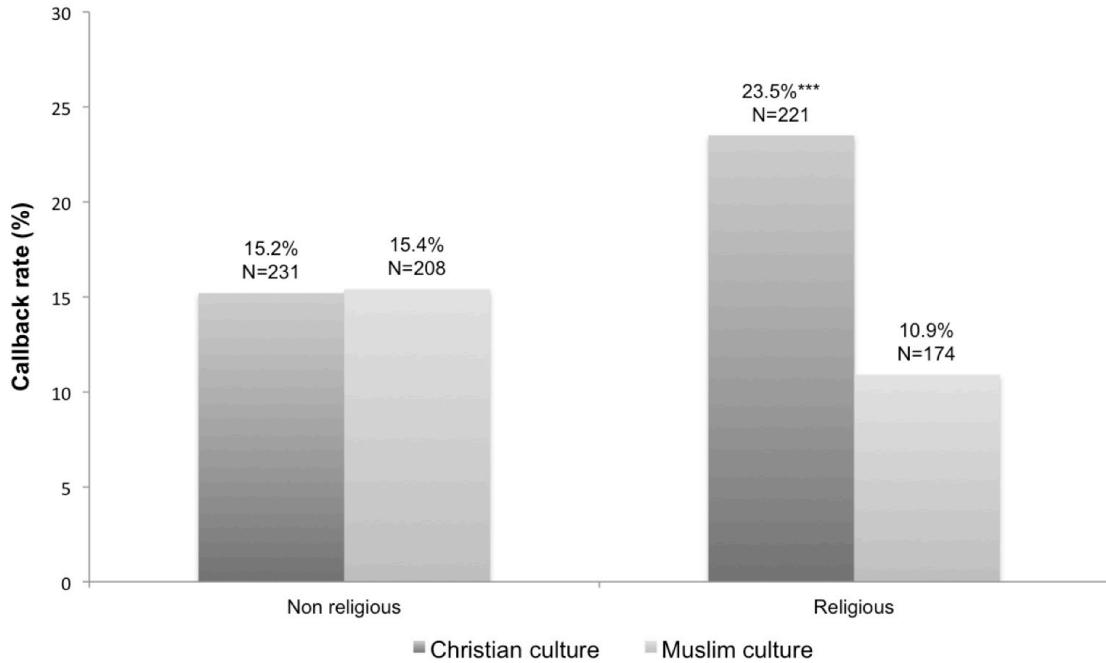
Note: \*, \*\* and \*\*\* indicate that the difference in callback rates between applicants of Christian and Muslim culture is statistically significant at the 90%, 95% and 99% confidence levels respectively.

**Figure 4:** Heterogeneity of the “Muslim vs Christian culture” effect, by quality:  
Difference-of-means analysis



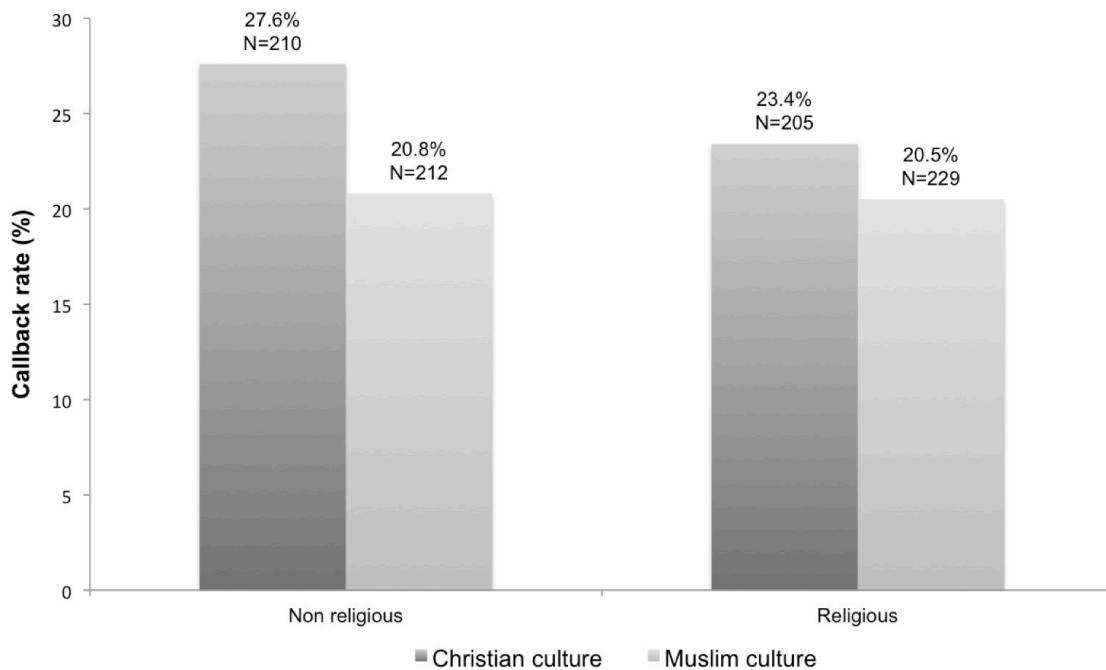
Note: \*, \*\* and \*\*\* indicate that the difference in callback rates between applicants of Christian and Muslim culture is statistically significant at the 90%, 95% and 99% confidence levels respectively.

**Figure 5a:** Heterogeneity of the “Muslim vs Christian culture” effect, by religiosity:  
The case of female applicants of good quality



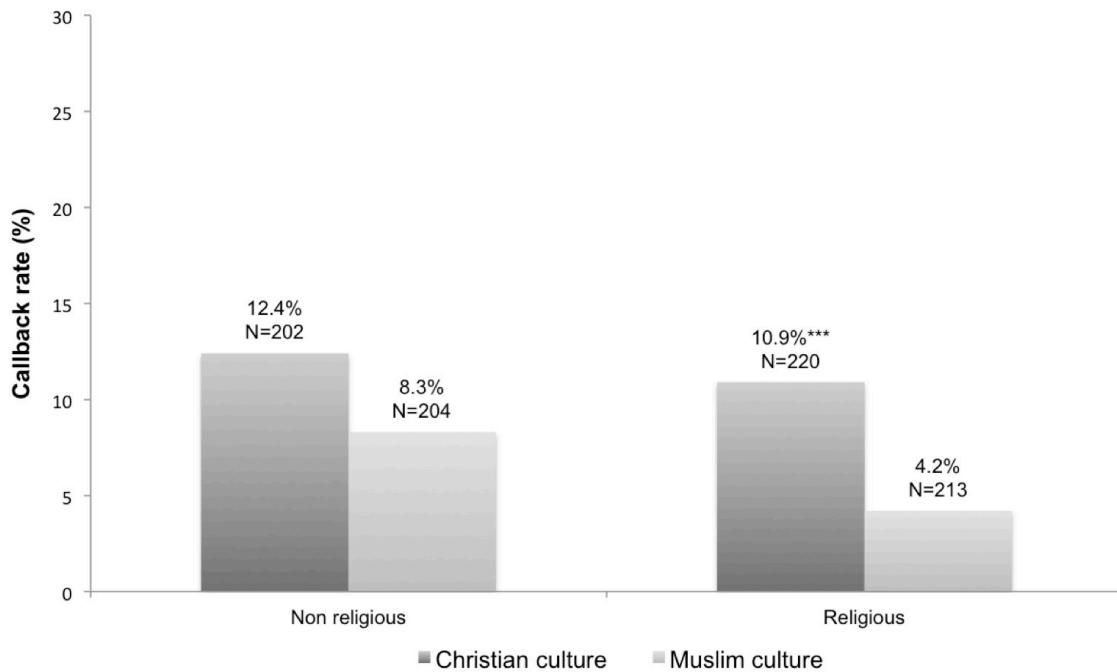
Note: \*, \*\* and \*\*\* indicate that the difference in callback rates between applicants of Christian and Muslim culture is statistically significant at the 90%, 95% and 99% confidence levels respectively.

**Figure 5b:** Heterogeneity of the “Muslim vs Christian culture” effect, by religiosity:  
The case of female applicants of outstanding quality



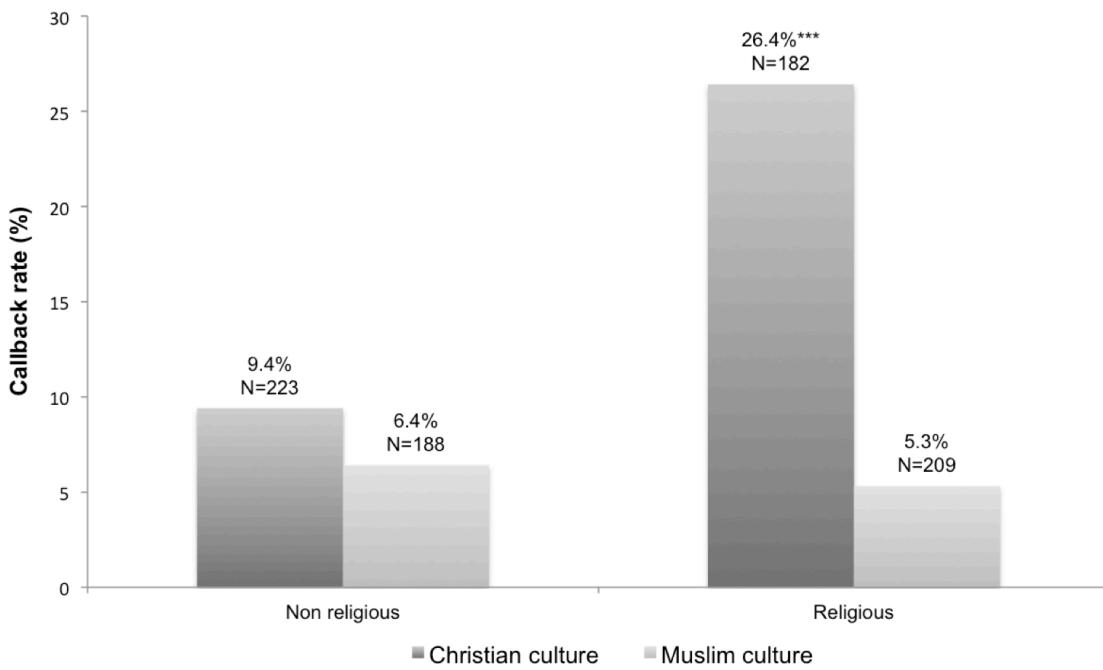
Note: \*, \*\* and \*\*\* indicate that the difference in callback rates between applicants of Christian and Muslim culture is statistically significant at the 90%, 95% and 99% confidence levels respectively.

**Figure 5c:** Heterogeneity of the “Muslim vs Christian culture” effect, by religiosity:  
The case of male applicants of good quality



Note: \*, \*\* and \*\*\* indicate that the difference in callback rates between applicants of Christian and Muslim culture is statistically significant at the 90%, 95% and 99% confidence levels respectively.

**Figure 5d:** Heterogeneity of the “Muslim vs Christian culture” effect, by religiosity:  
The case of male applicants of outstanding quality



Note: \*, \*\* and \*\*\* indicate that the difference in callback rates between applicants of Christian and Muslim culture is statistically significant at the 90%, 95% and 99% confidence levels respectively.