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Attitudes on past-in-present educational discrimination. Insights from a representative factorial survey

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Insights from a representative factorial survey

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Abstract

In this paper, we provide evidence on attitudes on past-in-present educational discrimination, i.e. educational discrimination that occurred in the past but has present-time negative effects on the probability of success in fair-in-form employment selection processes. To do so, we use an original factorial survey experiment, and collect data from a representative sample of the US population. We find that a significant majority of respondents support the costly compensation of past-in-present educational discrimination. Moreover, we find that respondents are as sensitive to past-in-present educational discrimination than to present-time employment discrimination. We find that causal effects on attitudes are stronger for the intentionality of the discrimination than for its financial consequences on the discriminated group. Last, attitudes appear to be more driven by the respondents' political perspective than by their own real-world identity.

Keywords: attitudes, educational discrimination, factorial survey, past-in-present discrimination

Résumé

Dans cet article, nous fournissons des preuves sur les attitudes à l'égard de la discrimination éducative passée dans le présent, c'est-à-dire la discrimination éducative qui a eu lieu dans le passé mais qui a des effets négatifs dans le présent sur la probabilité de réussite dans les processus équitables de sélection des emplois. Pour ce faire, nous utilisons une expérience d'enquête factorielle originale, et recueillons des données auprès d'un échantillon représentatif de la population américaine. Nous constatons qu'une majorité significative de répondants est favorable à une compensation coûteuse pour la discrimination passée et présente en matière d'éducation. En outre, nous constatons que les personnes interrogées sont plus sensibles à la discrimination passée et actuelle en matière d'éducation qu'à la discrimination professionnelle actuelle. Nous constatons que les effets causaux sur les attitudes sont plus forts pour l'intentionnalité de la discrimination que pour ses conséquences financières sur le groupe discriminé. Enfin, les attitudes semblent être déterminées davantage par la perspective politique des répondants que par leur propre identité dans le monde réel.

Mots-clef: attitudes, discrimination éducative, factorial survey, past-in-present discrimination

1 Introduction

Access to elite higher education tracks is a key determinant of future employment, wage outcomes, and access to high-stake jobs. Psacharopoulos and Patrinos, 2018 show that in advanced economies, the rate of return on investment per year of higher education is around 10% in earnings terms. Bordón and Braga, 2020 show that college graduates in Chile earn a 13% wage premium in their first year of the labour market, and up to 4% after 6 or more years of labor market experience. In the U.S., Smith, Goodman, and Hurwitz, 2020 show that enrolment in public four-year higher institutions boosts students' household income around age 30 by 20 percent, and has even larger impacts for those from low income high schools.

Among college graduates, prestigious programs provide a much higher return of investment. Jia and Li, 2009 find that, in China, students who score higher than the elite cut-off in the national college entrance exam have higher first-job wages after graduation and better social networks. In the U.S., Long, 2008 shows evidence of the positive effects of college quality on college graduation and household income. Hoekstra, 2009 reports that attending the most selective flagship state university causes earnings to be approximately 20% higher for white men. Anelli, 2020 find similar evidence and points to degree completion and peer quality as channels explaining these effects. Further, Rivera, 2011 shows evidence that although educational credentials are the most common criteria employers use to solicit and screen resumes, it is not the content of education that elite employers value, but rather its prestige.

From a moral point of view, equal, unbiased access to higher education is a key condition of a fair higher educational system. Following Mijs, 2016, educational inequalities can be presented as morally fair as long as the system is meritocratic, i.e. as long as differences in position only reflect individual effort and not structural biases based on gender, religion, handicap, sexual orientation or social, geographic and ethnic origin.

In reality, the ongoing controversy around the use of the Scholastic Assessment Test is a well known example of persisting *past-in-present educational discrimination* in the US higher education system. According to Feagin, 1977 *Past-in present discrimination* is a form of indirect institutionalized discrimination that happens when fair-in-form neutral practices reflect and perpetuate the effects of past intentional discriminatory practices, for example *penalizing minorities because they lack some ability or qualification intentionally denied to them in the past*" or having hiring standards that are (unintentionally) "*shaped to meet the distinctive physical or sub-cultural characteristics of dominant group employees in many organizations*".

In this paper, we study the moral acceptability of past-in-present educational discrimination using an original vignette-based factorial survey experiment[1]. Respondents were asked whether it was morally fair to adapt an elite job selection process that, although neutral, propagated past educational discrimination suffered by a target group of applicants, knowing that the adaptation would be costly for the agent. The adaptation of the selection process consisted in an equal-opportunity affirmative action policy[2], which eliminated the effect of the past discrimination.

The factorial survey was designed to study the causal effect of 4 factors on the acceptability of past-in-present discrimination: (i) the intention of the discrimination (whether in the past or in the present), (ii) the financial loss suffered by discriminated applicants, and (iii) the existence of sanctions for the discriminating employers. A scenario with direct, present-time employment discrimination was also introduced to study (iv) whether respondents considered differently past- and present-time discriminations. Additionally, we explored how the respondents' personal characteristics and identification to the agents involved in the selection process correlated with their attitudes on past-in-present educational discrimination.

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[1]The survey was administered between June 2019 and January 2020 on US respondents via the online platform SurveyMonkey and received 788 valid questionnaires. SurveyMonkey is a well-known panelist that is often used to administer online surveys: for recent examples, see Paredes et al., 2021 or Chen, Valliant, and Elliott, 2019.

[2]See Harrison et al., 2006 for a comprehensive typology of affirmative action policies.

The 4 main results of the paper are the following. First, we find that only a small majority of respondents are sensitive to past-in-present educational discrimination. More than half of the respondents are in favor of a costly adaptation of the selection process designed to compensate past educational discrimination. Further, their attitudes are not significantly different when considering past-in-present educational discrimination vs. direct present-time employment discrimination. Second, we find that the intention to harm voluntary the discriminated group impacts more the respondents' opinion than the financial consequences of discrimination for the discriminated group. Third, we find that information of government-sanctioned financial penalties against discriminating employers no significant effect on the respondents' attitudes. Fourth, we find some evidence that attitudes on the compensation of past-in-present discrimination are more strongly associated with the point of view they adopted when making their decision than their own identity (gender and ethnicity).

The paper is organized as follows. Section 2 briefly presents the literature on empirical evidence of past-in-present educational discrimination in the U.S. and on the opinions on compensatory policies. Section 3 discusses the methodological advantages of a factorial survey analysis vs. standard attitudinal surveys to account for attitudes on discrimination. Section 4 presents our original survey design and some descriptive statistics. Results are presented in Section 5. Section 6 concludes.

2   Past-in-present discrimination : evidence, policies and attitudes

2.1   Evidence of past-in-present educational discrimination in the US

In the US, access to higher education programs is a key determinant of future earnings and social status, but although the selection procedures to the most prestigious programs are apparently neutral, they actually perpetuate past educational biases against minorities.

In the US, Scholastic Assessment Test (SAT[3]) tests are accessible to anyone wishing to enter college. The test is of identical difficulty everywhere and relatively inexpensive (around USD 50). However, there is ample empirical evidence (see Alon, 2006, Geiser, 2017, Carnevale, Schmidt, and Strohl, 2020) of the role of the SAT in the reproduction of major social and racial inequalities. Rothstein, 2020 shows that much of the SAT's predictive power derives from its correlation with high school demographic characteristics[4] For instance, although 13% of SAT candidates are Black, they represent just 2% of the students achieving a score of more than 1,400 needed for admission to a top-rated university (College-Board, 2018). Moreover, according to Carnevale, Schmidt, and Strohl, 2020, the situation has been deteriorating: since 1988, the SAT scores of students whose parents have two years of higher education at most have fallen by around 27 points.

More generally, Stich, 2018 shows that elite honor tracks create unintended persistent stratification within standard "accessible" universities. Jerrim, Chmielewski, and Parker, 2015 show that high achieving disadvantaged children are much less likely to enter a high-status college than their more advantaged peers. Brey et al., 2018 report that the most prestigious programs and/or those with the highest earnings potential are biased in favor of White and Asian students, male students and students from high-income families. Further, Brezis and Hellier, 2018 model how access to 'elite' universities can be a key factor in generating permanent social stratification, social immobility and self-reproduction of the 'elite'.

In this paper, the mechanism that generates past-in-present discrimination is an unequal access to a specific supplementary training course. Shadow education (supplementary tutoring or training on educational, see Liu and Bray, 2017, for a review) has repeatedly been presented as having long-lasting effects in the propagation of socio-demographic educational inequalities. Alexander, Entwisle, and Olson, 2007 show that early out-of school summer learning differences across socio-economic statuses

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[3] The American College Test (ACT) is an equivalent and competing test.

[4] In 2019, a suit was filed against the University of California on the grounds that the SAT-based admission system discriminated against applicants on the basis of race, wealth, disability and mother tongue. In May 2020, the university decided to stop using SAT scores for admissions from the autumn semester of 2021 (Kroichick, 2020).

can substantially account for achievement-related differences in four-year college attendance. Rivera, 2011 shows the importance of extra-curricular activities that resonate with white, upper-middle class culture, and discusses how the way employers use and interpret educational credentials contributes to a social closure of elite jobs based on socio-economic status. C. Becker, Rouse, and Mingyu, 2016 show that summer programs destined to increase the diversity of minorities in PhD programs have a significant effect on minorities' PhD completion and academic career. As far as the SAT is concerned, numerous institutions offer SAT preparation courses for a cost of between USD 500 and 1,300[5] (Carnevale, Schmidt, and Strohl, 2020).

2.2 Compensating the labor market effects of past-in-present discrimination

Since the 1970s, many universities, but also public institutions and firms, have set up a wide variety of "affirmative action" policies destined to compensate for past social and educational inequalities or discrimination and achieve a degree of social diversity among their students and employees[6].

While empirical evidence shows that these policies had generally positive effects (Durlauf, 2008; Yagan, 2016; Grau, 2018), some adverse results were also found (Arcidiacono et al., 2013, Fallucchi and Quercia, 2018). In recent years, race-based affirmative action policies in higher education were severely curtailed or partially banned following a series of Supreme Court rulings[7]. Empirical evidence shows adverse effect of these rulings on under-represented minority students (Hinrichs, 2014), although differences across colleges have also been pointed out (Hinrichs, 2020). To broaden student diversity, universities have turned to alternative strategies. Some, like the Universities of Chicago, California and Texas, have set up a place-based affirmative action system to guarantee admission for students from high schools in all types of neighborhood (including Black and/or Hispanic). Ongoing research show evidence of the positive effects of these policies (Black, Denning, and Rothstein, 2020 ; Dur, Pathak, and Sönmez, 2020).

2.3 Attitudes on the compensation of past-in-present educational discrimination

These facts notwithstanding, the challenge of addressing educational inequalities and discrimination is still a fiercely debated issue in the United States (Moses, 2016), and the literature has striven to understand attitudes on discrimination.

Attitudinal surveys show that the existence of educational inequalities and discrimination is acknowledged by a vast majority of US citizens: according to a Gallup opinion poll, 55% of Americans think that a Black applicant is less likely to be admitted to a college than a White applicant with identical high-school grades (Newport, 2016). This belief does not seem to translate, however, to a shared support of affirmative action policies. For instance, from one survey to the next, the proportion of Americans in favor of affirmative action to increase the number of Black and minority students admitted to university ranges between 61 and 71 percent (Newport, 2016, Pew-Research-Center, 2019). Yet, at the same time, 70 percent of respondents consider that "*applicants should be admitted solely on the basis of merit even if that results in few minority students being admitted*" in contrast to the opinion whereby "*an applicant's racial or ethnic background should be considered to help promote diversity on college campuses, even if that means admitting some minority students who otherwise would not be admitted*" (Newport, 2016).

In social sciences, attitudes on affirmative action have long been explored using a wide variety of methodologies: both attitudinal and factorial surveys, as well as experimental designs (see Harrison et al., 2006, for a survey).

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[5]According to the Census Bureau, real median disposable income in the USA was around USD 2,800 per month in 2018.

[6]A full survey affirmative action programs is well beyond the scope of this paper. The paper focuses on one of these mechanisms. For an enlightening typology of affirmative action programs see Harrison et al., 2006. For comprehensive reviews, see Holzer H.J., 2006, Kellough, 2006, Hinrichs, 2012 and Hinrichs, 2014, Arcidiacono P., 2015, and Page and Scott-Clayton, 2016.

[7]Davis (1978), Grutter (2003), Parents v. Seattle and Meredith v. Jefferson (2007) and Fisher I & II (2013 ; 2016). See Wallace and Allen, 2016 for a discussion of these rulings.

Recent papers show that even if the principle of affirmative action is largely accepted, its weaker forms are preferred and the notion itself has become ideologically charged.

Saxena et al., 2020 show, based on online experiments, that the principle of affirmative action policies is well supported among competing fairness definitions. Among affirmative action policies, there is consistent evidence that people prefer 'weak' policies where other determinants, such as merit, are also considered over stronger, more prescriptive policies, where the weight assigned to group membership is greater. For example, the meta-analysis of Harrison et al., 2006 shows that equal opportunity affirmative action is preferred to more prescriptive affirmative action policies, such as tie-break, and weak and strong preferential treatment. Further, following Awad, 2013, Fugère et al., 2016 find experimental evidence that policies labelled *diversity policies* are rated more favorably than policies labelled *affirmative action*. This echoes Scarborough, Lambouths, and Holbrook, 2019 who argue that the notion of *affirmative action* itself has become a radicalized and gendered political buzzword. In line with these findings, in this paper we chose to study opinions about a moderately 'weak' affirmative action policy (equal opportunity affirmative action[8]) without making any mention of the notion of affirmative action itself.

Many studies also document that individual characteristics are strong predictors of affirmative action attitudes.

Ideological features are consistently associated with affirmative action attitudes. Studies show that conservatism is negatively correlated with the support of employment (Harrison et al., 2006, Haaland and Roth, 2017) and educational (Aberson, 2021) affirmative action policies. By contrast, racist and sexist attitudes predict a weaker support of employment affirmative action policies (Shteynberg et al., 2011, Fleischmann and Burgmer, 2020). Belief or knowledge about existing discrimination is correlated with a greater support of affirmative action policies (Haaland and Roth, 2017; Aberson, 2021). This is consistent with Scarborough, Lambouths, and Holbrook, 2019 who report lower levels of support for workplace affirmative action policies when these policies are framed as a mechanism to increase diversity than when they are framed as being needed to address discrimination.

Results are less clear-cut for identity characteristics. Many papers show that, in hiring contexts, women and under-represented minorities are more likely to support affirmative action policies than male or white respondents (Harrison et al., 2006, Scarborough, Lambouths, and Holbrook, 2019). By contrast, in educational contexts Aberson, 2021 finds that gender and political orientation do not uniquely predict support for educational affirmative action policies, and that models of support for affirmative action in hiring may not be wholly applicable in predicting support for affirmative action in educational admissions.

In line with the literature, in this paper we study the association between attitudes on the compensation of past-in-present educational discrimination and key individual characteristics: age, gender, income, political opinions.

3 Why factorial surveys are relevant to study attitudes on past-in-present discrimination

In this section, we discuss the methodological relevance of vignette-based factorial surveys to elicit and study normative opinions on sensitive issues and, more particularly, on past-in-present educational discrimination.

To understand normative opinions, a first strategy is to directly ask about the respondents' moral principles and values. In a recent and comprehensive paper, Aberson, 2021 used such an attitudinal survey to bridge the gap between studies on the attitudes on affirmative action policies in employment and in college admissions.

However, when dealing with sensitive or complex issues, attitudinal surveys may present methodological drawbacks.

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[8]i.e., the elite selection process described in the survey is simply adapted in order to exactly compensate the effects of past educational discrimination.

Simple, direct questions about a respondent's opinion on a particular concept provide answers about his or her support of this concept, but give no information about their perception and possibly idiosyncratic definition of the concept. This is of particular concern when discussing discrimination and affirmative action issues, which are complex notions. In particular, Pauwels, 2010 and Tran, 2019 both show that the meaning of the term "affirmative action" has progressively changed over the years, while Scarborough, Lambouths, and Holbrook, 2019 underlines the ideological and divisive nature of this term.

By contrast, vignette-based factorial surveys are particularly suited to study attitudes on past-in-present discrimination.

Vignette-based factorial surveys have long been used in social sciences. They were used in Liberia as early as the 1920s by the anthropologist Herskovitz, 1931, Herskovitz, 1950 and were standardized in the 1970s when sociologists and social psychologists used it to study factors affecting perceptions of social status (Nosanchuk, 1972; Rossi, 1951; Rossi, 1979; Rossi and Nock, 1982; Jasso, 2006). In economics, this method is widespread in the empirical social choice literature (Yaari and Bar-Hillel, 1984; Konow, 2001; Gaertner and Schokkaert, 2011). It has also been used in a growing set of paper both in education and in labour market economics. In education economics, vignette-based factorial surveys were for example used by Di Stasio, 2014 and Di Stasio and Van De Werfhorst, 2016 to study the signal effect of education on student trainability. Van Belle et al., 2020 used another survey to disentangle the different signals actually sent to employers by student employment. In personnel and labour market economics, hiring decisions and discrimination are increasingly often examined using vignette-based factorial surveys. Baert and De Pauw, 2014 show that customer-based hiring discrimination is more prevalent than statistical discrimination. Using field-experiment evidence, Tyran and Hedegaard, 2018, showed that the frequency of discriminatory behaviors was affected by the cost supported by the discriminatory agents. Bunel and Tovar, 2021 used a factorial survey to show that attitudes on discrimination were also affected by this parameter. They also show that the intention of discrimination, as well as information on a social norm hostile to discrimination, also have causal effects on the acceptability of employment discrimination.

In a vignette-based survey, respondents are presented with a short story describing a situation where a decision must be made, and are asked to indicate which solution they prefer. Each respondent receives a particular scenario drawn at random from a portfolio of alternative versions of the vignette, where the experimenters manipulate key parameters (i.e., "factors") of the situation described in the story. By comparing the choices of groups of respondents who received different scenarios, experimenters are able to identify the causal effect of the manipulated factors on the respondents' choices[9]. This experimental nature of vignette surveys guarantees their high degree of internal validity (Taylor, 2006).

The story-like nature of vignettes also minimize conceptual ambiguities and reduce the cognitive effort of understanding the underlying normative issues at stake (Wallander, 2009). Vignettes make it easy to provide a detailed description of the situation, the type and origin of the discrimination affecting the target group, the extent of this discrimination and its impact on members of the discriminated and other groups. This is especially relevant when dealing with past-in-present discrimination, which is a complex situation to describe, since it combines a fair-in-form present selection process and a real but past educational discrimination. Using a vignette allows to fully describe the nature of this dual mechanism and ascertain that respondents take its consequences on the target group as a given. This is useful since attitudinal surveys show (Smith, Davern, et al., 2018) that in the United States, a non-negligible minority of individuals negate the reality of past-in-present discrimination,

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[9]Other approaches, such as testing studies and laboratory experiments share this same experimental and causal nature, but focus on behaviours, not attitudes. We believe that behaviour- and opinion- oriented studies are complementary. Beyer and Liebe, 2015 have shown the fruitfulness, to study discrimination, of using vignette-based factorial surveys as complements for behaviour-oriented experimental protocols. Further, Hainmueller, Hangartner, and Yamamoto, 2015, Petzold and Wolbring, 2019 and Gutfleisch, Samuel, and Sacchi, 2021 provide evidence that determinants of behaviours might be inferred from behavioural intentions measured with survey experiments. Last but not least, Riach and Rich, 2004 argue that deceptive field experiments of discrimination may be questionable from an ethical point of view. All in all, compared to behaviour-oriented experiments, we believe that survey experiments are a valuable complement, if not substitute.

believing for instance that inequalities of employment, income and housing experienced by Black people are not due to discrimination but to their lack of motivation or cognitive skills.

Another interesting characteristic of vignette-based surveys is the possibility of addressing potential biographical bias (Schoenberg and Ravdal, 2000). Fleischmann and Burgmer, 2020 show that thinking about discrimination in abstract vs. situated terms has consequences on the support of compensatory policies. In vignettes, the situation can be framed in a context that can be as far removed as possible from the respondents' personal experience. The point is to try and minimize the respondents' projection of their own social experience on the characters involved in the fictitious setting described in the vignette.

Last, vignette-based surveys may help reduce social desirability bias when dealing with sensitive issues (Auspurg et al., 2015). In attitudinal surveys, sensitive questions are asked directly, which may make respondents overly uncomfortable and/or suspicious of the experimenter's intentions (Evans et al., 2015). In a vignette survey, the general normative question being addressed is transparent to the respondent, but the factorial manipulation woven through the portfolio of vignettes is not, so causal effects are observed free from the desirability bias (Wallander, 2009).

4   Empirical Strategy

Let's now present our survey design, followed by some empirical statistics.

4.1   Survey design

Our original vignette describes an apparently neutral process for selecting job applicants for a high-stake position in a large and prestigious company[10] that propagates past-in-present educational discrimination. An independent hiring agent is required to run the selection process to select the new employees. All candidates are treated the same during the selection process, but no applicants who experienced educational discrimination in the past will succeed and be hired.

The discriminated group differs from the others in that when in high school, its members did not benefit from extra-curricular training sessions dedicated to the preparation to this elite selection process[11].

The hiring agent has two options:

- *Compensate the consequences of past-in-present discrimination* through an equal-opportunity affirmative action policy: delay the selection process for all candidates so that members of the target group can make up for the lost preparation time. As a consequence, the proportion of successful candidates in the target group is identical to that of the other groups. This option is, however, very costly for the hiring agent.

- *Business as usual.* Treat all candidates in exactly the same way, without any adjustment to mitigate the effects of the past educational discrimination. In this case, no members of the target group are successful, but the hiring agent does not lose any income.

Respondents are asked to say which of the two options they consider to be most morally just. Our goal was to create a deliberate tension between an "obvious" moral principle of non-discrimination and a principle of a different order (the hiring agent's needed income), to see how respondents rank

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[10]To minimize biographical bias, the situation is deliberately decontextualized by locating the scene in a far away and peaceful galaxy where humans and many alien races coexist peacefully (See Appendix 8.1 for the full version of the vignette).

[11]In the vignette, the members of the discriminated group miss the extra training opportunity because they are culturally obliged to stay at home for ritual periods during their adolescence. Note that the Manta survey was designed in the spring of 2019 and conducted between September 2019 and January 2020. It precedes the COVID-19 epidemic which forced a large share of the world population to experience confinement first-hand. It also precedes the #BlackLivesMatter civil rights protests that took place in 2020 in the United States and elsewhere in the world.

the respective importance of these norms. An interpretation of this moral trade-off could be the "pricing" of non-discrimination in terms of the recruiter's utility.

The hiring process is explicitly neutral: we explicitly state that the hiring agent is neutral in his opinion towards the discriminated group. He believes that all candidates, whatever their origin, are equally capable of being selected.

We separate the hiring agent from the employer for two main reasons. In reality, people from minority groups have less access than others to top-rated schools, and having a degree from these schools is the sole means of obtaining the most prestigious, highly paid jobs. Consequently, differences in recruitment do not necessarily reflect employers' hiring strategies but may be due exclusively to the education system (top-ranking universities) that awards the qualifications needed for the job. Also, distinguishing between hiring agent and employer dissociates the timing of recruitment from that of the candidates' effective entry into the company. The moral problem thus remains independent of the candidates' subsequent performance on the job. This is why it is explicitly stated in the vignette that even if the members of the discriminated group are less well prepared to the selection process, they would perform equally well once employed by the company. By doing so, the ethical dilemma studied in the vignette is exclusively limited to educational selection and disentangled from ulterior on-the-job issues.

We were interested in studying the causal effect of three different contextual factors, which results in six alternative scenarios (#) (see Table 1).

- *The intention of discrimination :* deliberate (#1, 2, 3 and 7) vs. involuntary (#4, 5 and 6);

- *The cost of discrimination for the discriminated group:* important loss of income (#2, 3, 5 and 6) vs. no financial impact (#1 and 4);

- The fact that the hiring company can be *sanctioned by the government for the lack of diversity* among its employees (#3 and 6) vs. no sanction (# 1, 2, 4 and 5) .

Our working hypothesis are the following: past-in-present discrimination is less acceptable when it is intentional, when it has financial impact on the discriminated group and when there is an official statement that discrimination should be avoided.

In addition to these six scenarios, we added a scenario #7 where the discrimination is direct, deliberate and taste-based employment discrimination (as described by G. Becker, 1971. In this scenario, there is no past educational discrimination. Instead, the hiring company purposely refuses to hire applicants from the discriminated group. The aim of this additional scenario was to check whether past-in-present discrimination is considered more acceptable than direct, present-time discrimination.

Table 1 here

Next, in line with the literature presented in Section 2, we included follow-up questions on key socio-demographic characteristics (age, gender, income, ethnicity, education) and political opinions. Our working hypothesis were the following: past-in-present discrimination is less acceptable for respondents who belong to an under-represented minority (i.e., who are female and/or non-White) and is more acceptable for conservatives than for independents or liberals.

Last, we asked respondents about the perspective they adopted when making their choice: the point of view of applicants from the discriminated group? other applicants? the hiring agent? the hiring firm?. The purpose was to be able to distinguish, all other things being equal, the influence of their own identity (social position, being par of a real-world discriminated group) and the influence of their identification with the vignette's groups[12].

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[12]We chose to place the vignette in a neutral context with regard to the respondents' own experience to maximise this distinction

Our working hypothesis were that the perspective adopted by the respondents when considering the moral dilemma would be correlated with their own gender and ethnic identity and that there would be a significant association between the perspective adopted by the respondent when considering the moral dilemma and their opinion on the compensation of past-in-present educational discrimination.

4.2   Data collection and sample statistics

The survey was administered online between June 2019 and January 2020 on a sample of 788 people drawn from a representative panel of the US population[13] created by the SurveyMonkey online survey platform[14].

The first screen shown to respondents comprised a short text explaining the survey structure and objectives[15]. Next, after reading one of the randomly assigned vignette scenarios, respondents were asked to state which of the two proposed solutions were preferable from a moral standpoint: either compensate the past-in-present educational discrimination by delaying the selection or follow through with the original schedule (COMPENSATE variable = yes, no).

Table 2 here

They were also asked to state which of the characters in the story they identified most with (PERSPECTIVE variable = all agents, candidate from discriminated group, other agents: other candidate, hiring agent, employer).

Last, they were asked a short series of questions about their socio-demographic status which were recoded as follows: gender (GENDER variable = female, male), ethnic origin (RACE variable = White, non-White[16]), their age (AGE variable = below 30, 30-60, over 60) their educational level (EDUCATION variable = higher education, no higher education[17]), their income (INCOME variable = below \$50 000, \$50 000-\$149 999, \$150 000 and above) their political opinions (POLITICS variable = conservative, liberal, centrist, i.e. neither liberal nor conservative).

Table 2 presents the observable characteristics of the individuals in our sample for scenarios 1 to 6. Note that our sample comprises adults aged 18 and above with a high-school degree or higher. This selection was necessary to ensure that respondents were able to read and understand the vignette without difficulty. This choice explains why women, Whites, high earners and university graduates are over-represented in our sample compared with the general population.

5   Results

This section presents our results. First, (5.1.) we examine the general attitudes on the compensation of past-in-present educational discrimination. We then show the correlation with the respondent's individual characteristics and values (5.2.). Next, we present the causal effects of the intention and financial consequences of the past-in-present discrimination on the respondents' preferences (5.3.). The impact of government sanctions is also explored (5.4.). Last, we provide some perspective in comparing the global results on indirect past-in-present educational discrimination and on direct present-time employment discrimination (5.5.).

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[13]Sauer et al., 2011 showed that factorial surveys are applicable in general population samples, provided that a limited number of vignettes and dimensions per respondent were used.

[14]https://fr.surveymonkey.com.

[15]" *In the next page you'll find a story where a character needs to make a decision. You'll be asked which choice is, in YOUR opinion, the best from a moral point of view. Please read carefully the story in order to make YOUR decision: there are no good or bad answers! After, there are very brief questions about you. These will allow us to compare the answers of all the people that will complete the survey. All in all, the survey takes about 3-4 minutes to complete.*"

[16]White = self-declared White or Caucasian; non-White = self-declared American Indian or Alaskan Native, Asian or Pacific Islander, Black or African American, Hispanic or Latino

[17]Some higher education = some college, no degree; a college degree or equivalent; a bachelor's degree; a master's degree; a professional degree or doctorate (e.g. MD, DDS, DVM); a doctorate (PhD, EdD).

5.1 A significant majority chooses to compensate past-in-present discrimination

Across all scenarios, we find that a significant [18] majority of respondents (56.7%) believe that is fair to adapt the selection procedure to compensate for a past-in-present educational discrimination, even if it is costly for the recruiter (see **Figure 1**).

Figure 1 here

However, the margin of this majority remains narrow, which is consistent with the findings of self-reporting surveys. For instance, a Pew Research Center survey showed that although 77% of respondents recognized the reality of discrimination against Blacks and Hispanics in the United States, only half of them considered that Blacks do not have the necessary educational opportunities to escape from poverty (50% of respondents, 54% of Blacks and 49% of Whites) (Pew Research Center, 2019).

5.2 Relevance of identity and identification

Beyond this global result, we find that individual attitudes on past-in-present discrimination are correlated with personal characteristics and values (see the statistical tests in the last column of **Table 2**. The econometric analysis proposed in Table 3 allows us to test whether these differences persist "all other things being equal". The differences obtained by using a Linear probability models change somewhat but the effects identified remain the same.

Table 2 here

Table 3 here

In line with the literature presented in Section 2, we find that conservative and rich respondents (income above 150,000 $ a year) are less likely than others to support the compensation of past-in-present educational discrimination. We also find that younger (30 years old) and older (60 years old) respondents are more likely than middle-aged respondents to support the adaptation of the selection process.

Interestingly, neither the respondents' own level of education nor their ethnic origin are significantly correlated with their moral attitude on past-in-present discrimination. This contrasts with results found in previous attitudinal surveys. An explanation could be that our survey was designed to elicit attitudes on discrimination that were as abstract and as independent from the respondent's personal situation as possible - to do so, we set the vignette in a fictitious society that had no reference to the real world society. We simply find that abstract normative opinions on discrimination are not substantially different across races, while in most attitudinal surveys, racial groups that are discriminated in real life show more sensitivity to the discrimination of their own real-world racial group.

Following this line, a particular attention should be paid to the variable 'perspective', which was introduced to disentangle, all things being equal, real-world identity and within-vignette identification effects. We find a very strong relationship between our interest variable and the perspective adopted by the respondents: almost all respondents (95%) who identified with applicants from the discriminated group were also in favour of the compensatory policy. By contrast, the respondents who identified with the other agents were rarely in favour (19% of cases) of compensating the effects of past-in-present educational discrimination.

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[18]p-value of binomial exact test 0.001

Further, we find that even if female respondents are more likely to support the compensation of past-in-present discrimination (see Table 2), the gender variable is no longer significant all things being equal once the 'perspective' variable is included in the regression (**Model 1b**). Indeed, the multinomial logit analysis presented in **Appendix 8.2** shows that female respondents tend to identify less with the employer, the hiring agent or the non-discriminated applicants, which in turn explains why they are more likely to support the compensation of past-in-present educational discrimination.

5.3 Intention matters more than financial consequences

Next, let's focus on scenarios #1, 2, 4, 5 (see Table 1) to present results on the causal impact of intention and the financial consequences of discrimination on the respondents' attitudes. Note that there is no significant difference with the full set of respondents regarding the global support of the compensation of past-in-present educational discrimination (55.8% of 439 vs. 57.6% of 788 respondents).

We find that the intention to discriminate has a stronger causal impact on attitudes than the financial consequences of discrimination.

Fewer than half of the respondents (46.8%) pick the compensation solution when discrimination is involuntary, vs almost two-thirds of the respondents (63.5%) when there was a deliberate intention to discriminate using a fair-to-form neutral selection process that would penalize the group who suffered past educational discrimination (see **Table 1**). This difference of more than 16 percentage points is significant at the 1% level and is even greater (difference of about 19 points) when the penalty has the greatest impact on earnings (see **Table 4**).

By contrast, the causal impact of the financial consequences of the discrimination is lower, with a difference of only 8.5 percentage points (significant at 10%) between the proportions of respondents who pick the compensation solution when there is no income differential vs. when the discriminated group suffers x2 income penalty (see **Table 4**).

Table 4 here

The models presented in **Table 5** show how individual characteristics and values correlate with these results[19]. **Model 2b** controls for gender, age, race, educational level, income and political opinion. We find that the aggregate effect of deliberate discrimination and its financial consequences decreases sharply (by around 4 percentage points) but remains significant at the 1% level[20].

Model 2c includes the perspective variable. As in **Model 1b,** we find that this variable has a strong effect both on the model quality (R^2 increases from from 9.4% to 39.4%), and on the results. In this case, the effect is reduced by 7 percentage points, although results are still significant at 1%. As in the general case, we also find that the perspective variable again affects the significance of the gender variable.

Table 5 here

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[19]**Model 2a** has no control variables and gives the results shown in **Table 4**.

[20]The significance of effects combining the respondents' individual characteristics with the two effects studied – intention and its financial consequences – was also tested. Detailed results are available upon request. None of these effects proved significant

5.4 Information about government sanctions has little effect

Here, we check the causal influence of information on policies promoting diversity on the respondents' attitudes on the compensation of past-in-present educational discrimination. To do so, we used the subset of respondents who were given scenarios # 2, 3, 5 and 6 (see **Table 1**).

Table 6 here

Table 7 here

Results shown in **Table 6** and **Table 7** indicate that this factor has no significant effect on individuals' normative attitudes: information on government intervention does not affect the proportion of individuals who choose to compensate the effects of discrimination. This results contrasts with previous evidence on the effects of moral suasion on normative preferences (see, for example Bunel and Tovar, 2021).

5.5 Past-in-present vs. present-time discrimination : no differences

Last, we compare attitudes on indirect past-in-present educational discrimination vs. on present-time direct employment discrimination. To do so, we focus scenarios #2 and 7, which are identical [21] except for the nature of discrimination.

In scenario #2 (educational discrimination), deliberate discrimination occurred while the discriminated applicants were at school. As a result of this past discrimination, they are less well educated than the other candidates, perform less well in the selection process and are not hired. In this case, the selection process itself is fair-in-form and the discriminated group's disadvantage is due to its poorer education.

In scenario #7 (direct employment discrimination), the applicants all have the same level of education. However, the company is prejudiced against the discriminated group and instructs the hiring agent to discard their applications outright.

Table 8 here

At first sight, it seems that respondents are less tolerant of discrimination when it stems from the education system (#2) than when it directly results of a deliberate decision (#7). A difference of 12.61 percentage points (significant at 5%) is observed between the share of respondents favouring postponement of selection when discrimination is linked to candidates' education (67.7%) and those favouring postponement when it stems directly from the employer's dislike (55.1%).

Table 9 here

However, the greater tolerance of present-time direct employment discrimination disappears after controlling for the respondents' socio-demographic and ideological characteristics (**Table 9.**). The effect is only present in **Model 4a**, specified without control variables. In **Models 4b** and **4c**, which include individual characteristics as controls, the effect is not significant.

All in all, we find no attitudinal differences between indirect past-in-present discrimination and direct employment discrimination.

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[21] In scenarios #2 and 7, the discrimination is deliberate, results in a severe reduction of the discriminated applicants' earnings (−50%) for the discriminated group and there is no sanction risk of sanctions for the employer.

6   Conclusion

In this paper, we provide evidence on attitudes on past-in-present educational discrimination, i.e. educational discrimination that occurred in the past but has present-time negative effects on the probability of success in fair-in-form employment selection processes. For this means, we conducted a vignette experiment where we asked a representative sample of the US population to decide whether the compensation of a past-in-present educational discrimination was morally fair when it was costly for the present-time hiring agent. We studied the causal effects of 3 factors (i) the intention of the discrimination, (ii) its financial consequences in terms of wage loss for the discriminated group and (iii) the effect of information on a governmental financial sanction of the hiring firm if it discriminates. We also compared the attitudes on past-in-present educational vs. present-time employment discrimination, and explored the association between the respondents' attitudes and their personal identity and identification characteristics.

Our results shed some light on the ongoing debate on the implementation of public policies to compensate for the effects of past-in-present discrimination.

Admittedly, the majority of respondents support such compensation even when it is costly, and we find no significant difference with their attitudes towards present-time employment discrimination. However, the experimental nature of our survey allowed us to show that support for this compensation was causally strongest when it was established that the educational discrimination had been deliberate. However, as the empirical literature shows, educational discrimination today is more the result of the combination of monetary and social inequalities than of effectively deliberate discriminatory practices. Furthermore, our study shows that knowledge of the adverse effects of past-in-present educational discrimination on the wages of those discriminated against had a much smaller causal effect on respondents' attitudes. Thus, our results suggest that informing people about the reality of such discrimination and its consequences may have a useful but limited effect.

Similarly, we do not find a causal effect of the existence of financial sanctions imposed by the government on companies that discriminate on the acceptability of costly compensation for educational discrimination. This means that real-world anti-discrimination policies in the labour market do not have a trickle down effect on the moral acceptability of compensation tools for past educational discrimination. This result is also interesting in that it contrasts with the results established for direct employment discrimination (Bunel and Tovar, 2021), which echoes those of Aberson, 2021, who supported the idea that attitudinal models built for assessing the acceptability of the compensation of employment discrimination can not be transposed straightforwardly to the educational context.

Furthermore, in line with the literature which emphasises the extremely divisive aspect of this question, we showed that the political orientation of respondents (along with their income) was the individual characteristic most strongly correlated with their attitude to compensation for the effects of past-in-present educational discrimination. Under these conditions, our results show why the implementation of such measures cannot benefit from a broad consensus within society.

A particular feature of our survey design was to minimise the biographical bias of the respondents as much as possible. To do so, we used a factorial survey rather than an attitudinal survey, and we framed the vignette in a deliberately neutral society that is distinct from the real society. We also asked the respondents about their identification with the agents described in the vignette. This design allowed us to show that respondents' within-vignette identification with discriminated people was very strongly associated with their normative choice, in contrast to the real-world markers of their own social identity and risk of discrimination (gender, ethnicity).

All in all, our results indicate that attitudes on past-in-present discrimination are more moral than social: indeed, respondents are more sensitive to the intentionality of this discrimination than to its consequences, and they seem to be driven more by their political perspective than by their own experiences.

Finally, it is important to bear in mind the limitations of our paper, as well as extensions that could complement its results.

First of all, it should be stressed that this study was conducted on US respondents in a pre-Covid time. Further evidence is needed to test the stability of these findings over time and across other less politically polarized socio-cultural contexts. Furthermore, the survey design itself had some limitations. Potentially relevant factors were ignored in order to keep the vignette as simple and understandable as possible, such as, for example, the effect of the compensation measure on non-discriminated groups, or intermediate situations where some members of the discriminated group would succeed even without compensatory measures. Also, due to sample size issues, we were forced to consider the ethnicity of respondents in a rather crude way (white vs. non-white), and we did not cross-tabulate the individual characteristics of respondents in our regressions. Furthermore, it is possible that our result showing the dissociation of identity and identification effects on respondents' moral choices was made possible by the fact that our survey design had the property of minimising biographical bias. It would be interesting to replicate our results by framing the situation in a more familiar context, with a discrimination targeted at real-world discriminated groups (females, ethnic minorities). In addition, as extensions could also be envisaged, our framework could also be used to test more systematically the acceptability of other forms of affirmative action measures. Last, our survey experiment has made it possible to collect information on the normative attitudes of respondents; it would certainly be very interesting to combine it with experimental protocols to explore the effect of the factors studied (particularly financial) on respondents' behaviour.

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7   Tables and Figures

7.1   Figures

Figure 1. Share of respondents who choose the costly compensation of the past-in-present educational discrimination
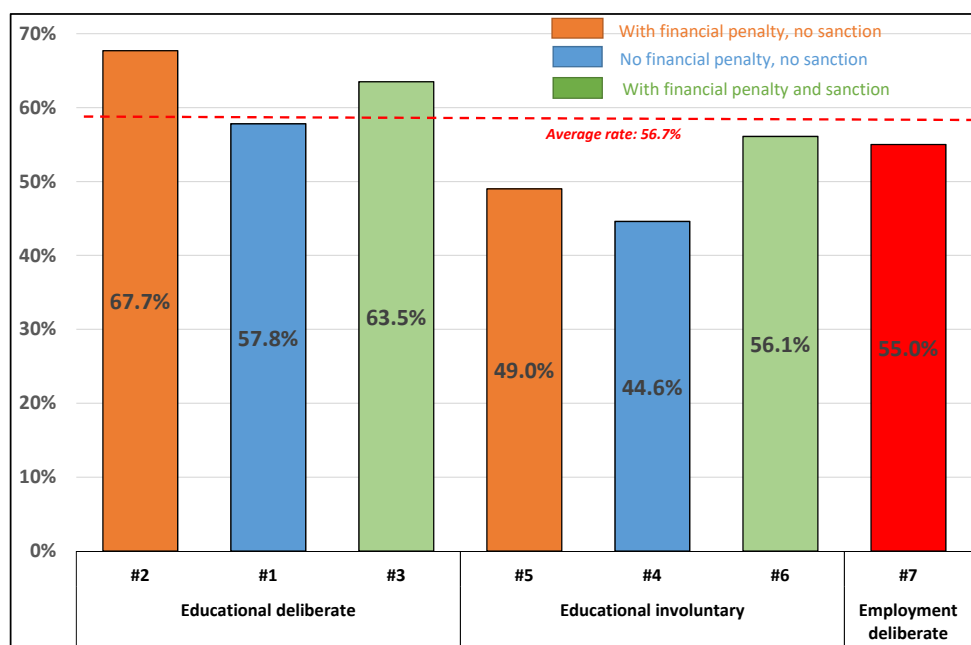
Coverage: adults aged 18 and above with high-school degree or higher. Observations: 788 (all scenarios). Data Source: Manta, 2020.

7.2   Tables

Table 1. Survey design

	Wage loss	No	x 2	x 2
	Sanction of the firm	No	No	Yes
Educational discrimination	Deliberate	Scenario #1 (n=102)	Scenario #2 (n=136)	Scenario #3 (n=96)
	Involuntary	Scenario #4 (n=101)	Scenario #5 (n=100)	Scenario #6 (n=114)
Labor market discrimination	Deliberate		Scenario #7 (n=129)	
Source: Manta, 2020				

Table 2. Descriptive statistics

	% of the sample	% of the respondents who compensate	Statistical test
All	100%	57.0	
Gender: female	56.6	62.4	***
Gender: male	43.4	50.0	
Race : non-White or Caucasian	21.9	62.0	not significant
Race : White or Caucasian	78.1	55.6	
Age : under 30	24.2	67.5	
Age : 30 to 60	58.9	51.1	***
Age : over 60	20.9	60.3	
Education : no higher education	16.3	56.6	not significant
Education : some higher education	83.7	57.1	
Annual income : less than 50,000$	34.4	61.4	
Annual income : 50,000$ to 149,999$	29.4	60.7	**
Annual income : more than 150,000$	36.2	49.8	
Political opinion : liberal	31.4	64.7	
Political opinion : conservative	26.5	41.9	***
Political opinion : other	42.1	60.8	
Perspective : discriminated group	23.3	94.7	***
Perspective: other agents	31.7	18.9	
Perspective : all agents	45.0	64.4	

SurveyMonkey-administered survey on adults (18 years old and more) who finished high school.
Chi-2 proportion test, with H_0: no difference by covariate in the proportion of respondents who chose to compensate.
*** significant at 1%, ** at 5% and * at 10%.
Data source : Manta survey, 2020. Scenarios #1 to 6 (649 observations).

Table 3. Linear probability model of the support of a costly compensation of the past-in-present educational discrimination (all scenarios)

	Model 1a	Model 1b
Gender: female (ref male)	0.116*** (0.0392)	0.0494 (0.0335)
Race : not White (ref : White)	0.0153 (0.0469)	0.00527 (0.0419)
Age : less than 30 (ref : between 30 and 60)	0.131*** (0.0477)	0.0691* (0.0401)
Age : more than 60 (ref : between 30 and 60)	0.108** (0.0494)	0.0820** (0.0407)
Education : higher education (ref : high school)	0.00762 (0.0545)	-0.00828 (0.0449)
Annual income : less than 50,000$ (ref : 50,000$ to 150,000$)	-0.0140 (0.0485)	-0.0237 (0.0417)
Annual income : more than 150,000$ (ref : 50,000$ to 150,000$)	-0.0808* (0.0478)	-0.0706* (0.0404)
Political opinion : liberal (ref : conservative)	0.186*** (0.0523)	0.113** (0.0451)
Political opinion : neither liberal nor conservative (ref : conservative)	0.156*** (0.0483)	0.134*** (0.0415)
Perspective : applicants from the discriminated group (ref : all the agents)		0.282*** (0.0340)
Perspective : hiring agent, hiring firm, applicants from the non-discriminated group (ref : all the agents)		-0.441*** (0.0397)
Constant	0.570*** (0.0190)	0.645*** (0.0278)
R2	0.068	0.360

Coverage: adults (18 years old +) who finished high school. Scenarios #1 to 6 (649 observations). Linear probability models. *** significant at 1%, ** at 5% and * at 10%.
Data source : Manta survey, 2020

Table 4. Difference in the proportion of respondents who choose discrimination vs. compensation when discrimination is intentional vs. has financial consequences

		Scenarios	Difference (pts)	z-score	p-value
Financial consequences for the discriminated group	All cases	2 and 1 vs 4 and 5	16,7 pts***	3.51	0.000
	x 2 income loss	#2 vs #5	18,6 pts***	2,89	0,004
	No income loss	#1 vs #4	13,3 pts*	1,89	0,058
Intention	All cases	#2 and #5 vs #1 and #4	8.5 pts*	1.79	0.073
	Deliberate	#2 vs #1	9,8 pts	1,55	0,120
	Involuntary	#2 vs #4	4,5 pts	0,63	0,528
Financial consequences x intention		#2 and #4	23,1 pts	3,56	0,000***
SurveyMonkey-administered survey on adults (18 years old +) who finished high school. Scenarios 1, 2, 4 and 5 (439 observations). Chi-2 proportion test : *** significant at 1%, ** at 5% and * at 10%. Data source : Manta survey, 2020					

Table 5. Linear probability model of the support of the costly compensation of the past-in-present educational discrimination (when discrimination is intentional vs. has financial consequences

	Model 2a	Model 2b	Model 2c
Deliberate x twofold wage loss (#2) (ref : involuntary x no wage loss)	0.231*** (0.0640)	0.193*** (0.0636)	0.157*** (0.0567)
Deliberate x no wage loss (#5) (ref : Involuntary x no wage loss)	0.133* (0.0699)	0.122* (0.0681)	0.139** (0.0594)
Involuntary x twofold wage loss (#5) (ref : Involuntary x no wage loss)	0.0445 (0.0706)	0.0458 (0.0710)	0.0525 (0.0605)
Gender: female (ref male)		0.101** (0.0479)	0.0405 (0.0401)
Race : not White (ref : White)		0.0299 (0.0561)	0.0155 (0.0493)
Age : less than 30 (ref : between 30 and 60)		0.139** 0.0576)	0.0877* (0.0476)
Age : more than 60 (ref : between 30 and 60)		0.0725 (0.0591)	0.0799 (0.0488)
Education : higher education (ref : high school)		0.00128 (0.0650)	-0.00480 (0.0548)
Annual income : less than 50,000$ (ref : 50,000$ to 150,000$)		-0.0803 (0.0580)	-0.0708 (0.0492)
Annual income : more than 150,000$ (ref : 50,000$ to 150,000$)		-0.118** (0.0567)	-0.0949** (0.0460)
Political opinion : liberal (ref : conservative)		0.156** (0.0637)	0.0881 (0.0544))
Political opinion : neither liberal nor conservative (ref : conservative)		0.105* (0.0605)	0.0898* (0.0508)
Perspective : applicants from the discriminated group (ref : all the agents)			0.239*** (0.0442)
Perspective : hiring agent, hiring firm, applicants from the non-discriminated group (ref : all the agents)			-0.463*** (0.0479)
Constant	0.446*** (0.0497)	0.460*** (0.0485)	0.565*** (0.0526)
R2	0.034	0.094	0.394

Coverage: adults (18 years old +) who finished high school. Scenarios 1, 2, 4 and 5 (439 observations). Linear probability models. *** significant at 1%, ** at 5% and * at 10%. Data source: Manta survey, 2020

Table 6. Effect of a government sanction on the proportion of respondents who support compensation

	Discrimination is	Scenarios	Difference	z-score	p-value
Sanction effect	Both cases	2 and 5 vs 3 and 6	0,00 pts	0.51	0.962
	Deliberate	2 versus 3	-4,11	-0,65	0,516
	Involuntary	5 versus 6	7,10	1,04	0,297

Coverage: adults (18 years old +) who finished high school. Scenarios 2, 3, 5 and 6 (446 observations). Proportion test. *** significant at 1%, ** at 5% and * at 10%. Data source: Manta survey, 2020

Table 7. Impact of information on a financial sanction of the hiring firm on the support of a costly compensation of the past-in-present discrimination (Linear probability model)

	Model 3a	Model 3b	Model 3c	Model 3d
Deliberate discrimination (scenarios 2 and 3)	0.133*** (0.0468)		0.119** (0.0462)	0.124*** (0.0364)
Sanction (scenarios 3 and 6)	0.0136 (0.0467)		0.0376 (0.0466)	0.0203 (0.0372)
Deliberate x no sanction (scenario 2) (ref : Involuntary x no sanction)		0.186*** (0.0644)		
Deliberate x sanction (scenario 3) (ref : Involuntary x no sanction)		0.145** (0.0704)		
Involuntary x sanction (scenario 6) (ref : Involuntary x no sanction)		0.0714 (0.0686)		
CONTROLS				
Respondent characteristics	NO	NO	YES	YES
Identification variable	NO	NO	NO	YES
Constant	0.521*** (0.0424)	0.490*** (0.0502)	0.517*** (0.0430)	0.589*** (0.0453)
R2	0.018	0.021	0.080	0.413

Coverage: adults (18 years old +) who finished high school. Scenarios 2, 3, 5 and 6 (446 observations). Linear probability models. Control variables: gender, age, race, education, income, political opinion. *** significant at 1%, ** at 5% and * at 10%. Data source : Manta survey, 2020

Table 8. Present-time employment vs. past-in-present educational discrimination

Effect	Scenarios	Difference	z-score	p-value
Nature of the discrimination	2 versus 7	12.6 pts	2.11**	0.035

Coverage: adults (18 years old +) who finished high school. Scenarios 2 and 7 (265 observations)
Chi-2 proportion test : *** significant at 1%, ** at 5% and * at 10%. Data source : Manta survey, 2020

Table 9. Association between individual characteristics and the support of a costly compensation of past-in-present educational vs. present-time employment discrimination

	Model 4a	Model 4b	Model 4c
Deliberate discrimination (scenarios 2 and 7)	-0.126**	-0.099	-0.0676
	(0.0596)	(0.0607)	(0.0517)
CONTROLS			
Respondent characteristics	NO	YES	YES
Identification variable	NO	NO	YES
Constant	0.676***	0.664***	0.762***
	(0.0403)	(0.0395)	(0.0498)
R2	0.017	0.095	0.372

Coverage: adults (18 years old +) who finished high school. Scenarios 2, and 7 (265 observations).
Linear probability models. Control variables: gender, age, race, education, income, political opinion.
*** significant at 1%, ** at 5% and * at 10%. Data source : Manta survey, 2020

Table 10. Tests of independence

	All scenarios		Scenarios # 1, 2, 4 and 5		Scenarios # 2, 5, 3 and 6		Scenarios # 2 and 7	
	Chi2	p-value	Chi2	p-value	Chi2	p-value	Chi2	p-value
Perspective	**27.38**	**0.007**	**11.51**	**0.074**	**18.71**	0.005	**14.70**	**0.001**
Political opinion	13.31	0.347	7.91	0.245	8.47	0.205	**7.45**	**0.024**
Gender	8.23	0.221	**6.55**	**0.088**	6.60	0.086	0.94	0.333
Age	14.37	0.278	9.99	0.125	7.28	0.295	**5.88**	**0.053**
Education	3.99	0.678	2.60	0.457	0.48	0.923	0.02	0.881
Race	0.63	0.996	0.54	0.910	0.26	0.967	0.05	0.820
Income	14.20	0.288	6.38	0.382	8.23	0.229	2.74	0.254

Coverage: adults aged 18 and above with high-school degree or higher. In bold font: situations where the independence hypothesis is rejected. Data Source: Manta, 2020

8 Appendix

8.1 Survey design

General context [all scenarios]

Imagine a far away galaxy where Humans and many alien races live peacefully.

Tom is the Human manager of a recruitment agency. This job is Tom's only source of income. This year, SpaceTravel, a big intergalactic firm, is Tom's only client. SpaceTravel asks Tom to run a selection process to find qualified navigators for its spaceships.

On average, half of the candidates are successful and become navigators for SpaceTravel.

Income differential

- None [#1 and 4] Tom knows that the candidates who fail the selection process will be quickly hired by other firms and will earn the same income than candidates who were successful.

- x 2 [#2, 3, 5, and 6] Tom knows that a SpaceTravel navigator earns twice the income of a candidate who failed the selection process.

Description of the selection process [all scenarios]

Candidates can only apply to the SpaceTravel selection process once in their life, just after high school. All the high schools organize short training courses where their pupils can get familiar with the very specific flight simulators used by SpaceTravel during its selection process.

Among all the galactic races that apply to the selection process, 100 candidates are Tenka aliens. The Tenkas have a specific tradition: the young Tenkas must stay at home during short ritual periods.

Discrimination intent

- Deliberate [#1, 2, and 3] Knowing this, the school administrators have deliberately set the training courses at times where the Tenka pupils could not attend. This way, they want to make sure that very few Tenkas will successfully complete the selection process.

- Unvoluntary [#4, 5, and 6] This cultural specificity prevents them from enrolling in the specific flight simulator training.

Disadvantage of the discriminated group and neutrality of the decision-maker [all scenarios]

SpaceTravel asks Tom to start the selection immediately after the high school year. Tom knows that, contrary to all the other candidates, the Tenka candidates could not get familiar with the flight simulators. Personally, Tom equally cares about all the alien races. In his opinion, they are all equally capable of being efficient navigators for SpaceTravel.

Sanction of the firm

- None [#1, 2, 4, and 5] no additional text

- Sanction [#3 and 6] The galactic government makes sure that all firms provide the same job opportunities to everyone. The government financially sanctions the firms that do not respect this principle.

Question [all scenarios]

In your opinion, from a moral point of view, what should Tom do? Knowing your opinion will not affect Tom's decision.

Scenarios without any sanction of the firm [#3 and 6]

- Discrimination Start the selection process immediately after the high school year for everybody, knowing that the Tenkas will not have had any opportunity to learn to use the flight simulators. Because of that, no Tenka candidate will successfully become a navigator. In this case, Tom will not lose any income.

- Compensation Delay the selection process to give the Tenkas enough time to learn how to use the flight simulators. In this case, 50 Tenkas will become navigators. But, because of the delay, Tom will have to pay a penalty and lose half of his income.

Scenarios with a sanction of the firm [#1, 2, 4, and 5]

- Discrimination Start the selection process immediately after the high school year for everybody, knowing that the Tenkas will not have had any opportunity to learn to use the flight simulators. Because of that, no Tenka candidate will successfully become a navigator. In this case, SpaceTravel will pay Tom the full amount of income due. Also, the government will impose a heavily financial penalty to SpaceTravel because of the high failure rate of the Tenkas.

- Compensation Delay the selection process to give the Tenkas enough time to learn how to use the flight simulators. In this case, 50 Tenkas will become navigators. But, because of the delay, Tom will have to pay a penalty and lose half of his income. In this case, the government will not sanction SpaceTravel.

8.2 Sub-sample structure

The χ^2 tests presented in this appendix (Appendix 8.2) are designed to ensure the comparability of the sub-samples of respondents who were shown the different versions of the vignette. Note that because the variable "perspective" is not independent of the scenarios, a specific econometric treatment was used in the econometric analysis.

8.3 Observable characteristics and vignettes influencing respondents' identification with one of the groups in the vignette

The marginal effects associated with the multinomial logit model presented below allow to identify the socioeconomic variables that influence the respondents' identification with the characters presented in the vignette.

We find that the respondents' gender, age, educational level and political opinions have a significant influence on this identification.

Let Y be a nominal outcome variable equal to

- 0 if the respondent stated that they identified the most with applicants from the discriminated group

- 1 if they identified the most with all the characters of the vignette

- 2 if they identified the most with other characters than the applicants from the discriminated group (hiring agent, hiring firm, applicants from non-discriminated groups)

Let's note $Pr(Y = j|X)$ with $j = 0, \ldots, 2$ the probability that the respondent is equal to j conditional of the covariates X.

We have
$$Pr(Y = j|X) = F_j(X\beta_j) = \frac{exp(\beta_0 j + \sum_{k=1}^{K} \beta_k j \times X_k)}{1 + \sum_{j=1}^{2} exp(\beta_0 j + \sum_{k=1}^{K} \beta_k j)} \text{ with j=1, 2}$$
and
$$Pr(Y = 0|X) = \frac{1}{1 + \sum_{j=1}^{2} exp(\beta_0 j + \sum_{k=1}^{K} \beta_k j)} \text{ if j=0}$$

Since we have only discrete covariates, the marginal effect is computed as the difference in predicted probabilities.

For instance, in the case of a dichotomic covariate, the marginal effect would be computed as:
$$Pr(Y = j|X_{-k}, X_k = 1) - Pr(Y = j|X_{-k}, X_k = 0) = F_j(X_{-k}\beta_{-k} + \beta_k) - F_j(X_{-k}\beta_{-k})$$

Table 11. Marginal effects of the covariates associated to the probability to choose one of the three identification items (Multinomial logit model)

Identification items	Agents from the discriminated group	All the agents	Other agents#
Scenario #1 (ref : scenario #2)	-0.150*** (0.0534)	0.127** (0.0641)	0.0230 (0.0621)
Scenario #3 (ref : scenario #2)	-0.142** (0.0564)	0.162** (0.0659)	-0.0195 (0.0612)
Scenario #4 (ref : scenario #2)	-0.126** (0.0557)	0.124* (0.0632)	0.00265 (0.0608)
Scenario #5 (ref : scenario #2)	-0.105* (0.0570)	0.0764 (0.0638)	0.0288 (0.0638)
Scenario #6 (ref : scenario #2)	-0.0956* (0.0547)	0.204*** (0.0614)	-0.108* (0.0561)
Scenario #7 (ref : scenario #2)	-0.181*** (0.0495)	0.162*** (0.0599)	0.0193 (0.0587)
Female (ref : Male)	0.0255 (0.0302)	0.0933*** (0.0359)	-0.119*** (0.0327)
Not White (ref : White)	0.00916 (0.0357)	0.00194 (0.0452)	-0.0111 (0.0418)
Age below 30 years old (ref : between 30 and 60 years old)	0.0713** (0.0341)	-0.0162 (0.0455)	-0.0551 (0.0429)
Age above 60 years old (ref : between 30 and 60 years old)	0.0229 (0.0382)	-0.00397 (0.0456)	-0.0189 (0.0428)
Education: some college (ref : high school, no college)	-0.0282 (0.0393)	0.0898* (0.0490)	-0.0616 (0.0454)
Annual income below 50 000$ (ref : between 50 000$ and 150 000$)	-0.0190 (0.0361)	0.0156 (0.0447)	0.00341 (0.0424)
Annual income : above 150 000$ (ref : between 50 000$ and 150 000$)	0.00103 (0.0360)	-0.0322 (0.0439)	0.0311 (0.0412)
Political opinion : liberal (ref : conservative)	0.129*** (0.0402)	-0.0620 (0.0477)	-0.0670 (0.0446)
Political opinion : neither liberal nor conservative (ref : conservative)	0.0536 (0.0401)	-0.0179 (0.0452)	-0.0357 (0.0414)

\# Other agents: hiring agent, hiring firm, applicants from non-discriminated groups.
Coverage: adults aged 18 and above with high-school degree or higher. Scenarios #1 to 7.
Number of observations : 778 *** Significant at 1%, ** 5% and * 10%.
Data Source: Manta, 2020