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Keywords: Hiring, criminal records, incentives, rehabilitation certificate, stigma

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Abstract:

Although society benefits when people with criminal records are employed, employers are reluctant to hire them. Can we diminish this reluctance with direct incentives that reduce the cost of employing people with records or that compensate for the associated risk? If so, will the beneficial effects of incentives emerge under traditional hiring, where criminal history information is available at the outset for the choice between applicants, and under Ban-the-Box, where it is not? To answer these questions, we conducted preregistered experiments with a national sample of hiring decision-makers. The experiments included a conjoint analysis, which presented participants with 14,000 applicant profiles and corresponded to traditional hiring, and a picture-based factorial vignette, which approximated Ban-the-Box by focusing on tentatively hired employees later discovered to have records. Evidence emerged that a $2,400 tax credit and $25,000 insurance against losses from employee dishonesty both increased the hiring of people with criminal records. These direct incentives were effective under traditional hiring and under Ban-the-Box, and they were effective regardless of whether applicants had misdemeanor or felony convictions. Rehabilitation certificates also had beneficial effects on hiring in the Ban-the-Box scenario.

Keywords: Hiring, criminal records, incentives, rehabilitation certificate, stigma
1. INTRODUCTION

About 30% of prime-age men in the United States have a criminal conviction (Bushway, Cabreros, Paige Jessica, Schwam, & Wenger Jeffrey, 2022). This fact has major implications for the labor market given that employers place individuals with conviction records at the end of the hiring queue, holding all else constant (Holzer, Raphael, & Stoll, 2003). The consequence is that the millions of Americans who have criminal records struggle to get jobs (Bushway & Kalra, 2021), even though their employment would benefit society (Denver, Siwach, & Bushway, 2017). The bad news for people who have criminal records only gets worse during a recession or economic downturn, when employers never reach the end of the applicant queue (Raphael & Weiman, 2007; Siwach, 2018). By contrast, during a tight labor market, the only people left are those at the end of the queue. As many as 50% of the men actively looking for work in a tight labor market have an adult conviction, most commonly for a misdemeanor offense (Bushway et al., 2022). At the same time, the way background checks affect employment has changed in the U.S. with the advent of Ban-the-Box (or fair chance) hiring, which requires that employers remove questions about criminal records from job applications and conduct background checks after initial hiring decisions have been made (Avery & Lu, 2021; Maurer, 2018).

One reason for new laws like Ban-the-Box is that some of the bias against applicants with criminal records is based on inaccurate beliefs about record-holders. Employers appear to use criminal history records as an indicator about an applicant’s potential productivity (Pager & Quillian, 2005; Sugie, Zatz, & Augustine, 2020) and risk of future criminal conduct (Holzer, Raphael, & Stoll, 2007; Holzer, Raphael, & Stoll, 2006; U.S. Equal Employment Opportunity Commission, 2012). For example, there is a common misperception that all people who have criminal records are at higher risk for reoffending, compared to people who do not have records
(Bushway & Kalra, 2021). However, many people with a criminal record have a low risk of future offending, lower even than some non-record-holders, and thus can be gainfully employed with access to higher earnings potential (Bushway & Kalra, 2021; Denver et al., 2017; DeWitt, Bushway, Siwach, & Kurlychek, 2017). Providing employers with more accurate indicators of reoffending risk, especially in conjunction with other job-related information, and with assistance using them might improve their decisions.

However, employers making decisions based on incorrect beliefs about the chance of reoffending are not the only problem (Bushway & Kalra, 2021). Even rational employers with perfect information will employ fewer record-holding workers than is socially optimal, given that society also benefits when people with convictions get jobs, as they earn higher legal income and become more likely to desist from crime (Denver et al., 2017; Siwach, 2018). In the language of economics, employers who employ people with criminal records generate positive externalities that they themselves do not benefit from directly (Bushway & Kalra, 2021).

In this situation, governments can help reach a better societal outcome by compensating employers for some of the costs of hiring those with criminal records (Bushway & Kalra, 2021). This can be done with wage subsidies, such as the federal Work Opportunity Tax Credit, or by offering to reimburse employers for small losses caused by theft through programs such as the Federal Bonding Program. Neither of those programs is used often by employers, leading some researchers to suggest that any benefits are dwarfed by the larger disincentives to hiring record-holders (e.g., the threat of negligent hiring lawsuits, damage to brand, fear of being victimized) (Bushway & Kalra, 2021; Hickox, 2011; McElhattan, 2022; Pyle, 2023). Moreover, restrictions on some of these programs limit their reach. The Work Opportunity Tax Credit program, for example, is only for people with felony records who are within a year of their conviction or
release from prison. We are not aware of any general tax credit that covers individuals with misdemeanor records or individuals with older felonies.

There are three recent studies that have tested how employers would respond to direct incentives if they were more broadly applied (Cullen, Dobbie, & Hoffman, 2023; Hunt, Smart, Jonsson, & Tsang, 2018). Hunt et al. (2018) found that when choosing between employment agencies, employers preferred agencies that offered better incentive packages. Santos et al. (2023) found little evidence that an unexplained wage reduction (e.g., to $1 or $2 hourly) increased employers’ willingness to hire applicants with criminal records. Cullen et al. (2023) found that certain incentives had beneficial effects, but focused only on short-term jobs in the unique context of a single online hiring platform’s attempt to move from an equilibrium where no employer was willing to hire record-holders to an alternative where they accepted a 5% chance of doing so.

In this study, we use a national sample of hiring decision-makers to conduct two preregistered survey experiments, one corresponding to the traditional hiring scenario and the other to the Ban-the-Box scenario. These experiments introduce a number of innovations which expand the scope of the existing research. First, they tested the effectiveness of each of the main incentive types in an occupationally and geographically diverse sample of hiring decision-makers. Second, they tested the effects of incentives for different conviction types. Third, to simulate the situation hiring managers face in a tight labor market, where they must choose among available applicants, the experiments required evaluation of applicants with different (randomized) characteristics (e.g., race, gender). Fourth, to explore decision-making in different hiring scenarios (traditional vs. Ban-the-Box), the experiments tested how incentives affected application-stage choices between those with versus without records, as well as final decisions
about tentatively hired employees subsequently discovered to have records. Fifth, the experiments included descriptive as well as visual (pictures) stimuli to match the realities of the different hiring contexts. We use methods designed to mitigate social desirability bias (Auspurg & Hinz, 2015; Horiuchi, Markovich, & Yamamoto, 2022) and build on an literature showing how conjoint and factorial survey designs with vignettes can illuminate the decisions that people make in their lives/jobs (Auerbach & Thachil, 2018; Hainmueller, Hangartner, & Yamamoto, 2015; Oesch, 2020; Petzold & Wolbring, 2019).

The findings from the experiments augment our understanding of how employers make decisions about hiring people with criminal records. In the experiments, direct incentives increased participants’ willingness to hire applicants with records and did so in both the traditional and Ban-the-Box scenarios. The most effective incentives were a tax credit and insurance against employee-dishonesty losses, while protection from negligent hiring lawsuits was less effective. The incentives worked not by changing perceptions about how applicants with records would perform as employees, but by compensating employers for hiring such applicants. Finally, the findings showed that certificates of rehabilitation increased participants’ willingness to hire applicants with criminal records, and did so in part by improving perceptions about how such applicants would perform as employees.

2. POLICY HISTORY

Employers seeking to hire employees face an assymetric information problem – the applicant knows about their skills and prospective job performance but employers do not. In face of this problem, employers can ask for relevant information directly or they can collect information from a secondary market for information. Background checks, including criminal
history record checks conducted by consumer reporting agencies fall into this category. Legitimate concerns exist about the quality of this information (Lageson, 2020) and their potential to create racial disparity. The federal Fair Credit Reporting Act (FCRA) attempts to improve data accuracy by giving candidates an opportunity to dispute errors in criminal histories compiled by consumer reporting agencies, and by holding agencies accountable for inaccuracy (Weiss, 2012). Title VII of the U.S. Civil Rights Act prohibits the use of information, like criminal records, that is correlated with race, unless it can be shown to be related to business necessity. The Equal Employment Opportunity Commission has created guidelines urging employers to use an individualized decision process to make more accurate decisions about the actual risk posed by people with criminal records (EEOC, 2012) rather than overly broad generalizations that assume that all those who have records are more likely to reoffend (EEOC, 2012).

Other government responses address the hiring process and access to information that may influence employers’ decisions to hire, or not hire, people who have criminal histories. Ban-the-Box policies at the state, local and federal level are based on the idea that delaying the stage at which employers consider criminal background information will make their hiring decisions more holistic and accurate. A few states provide record-holders with certificates of rehabilitation that give employers more information that may inform their perceptions of a potential hire’s risk of reoffending (Love, 2022; McCann, Kowalski, Hemmens, & Stohr, 2021). A few states have also begun to implement Clean Slate policies, which automatically remove information from public records that is deemed irrelevant for making informed decisions (Prescott & Starr, 2020). These initiatives have some restrictions; for example, rehabilitation certificates often require waiting periods, and Clean Slate policies focus on less serious records.
Another group of policies are based on the belief that businesses generate positive externalities when they hire those with records. These policies try to either directly limit the costs of hiring people with records or subsidize/incentivize the hiring of those with records to offset the costs of hiring those with records.

One cost of hiring those with records comes from state negligent-hiring doctrines. Employers may be liable to victims who have been injured by an employee if their employer knew or should have known about the danger posed by the employee (Clark, 2004; Hickox, 2011; McElhattan, 2022). Employers eager to avoid liability risk, however, might hire too few record-holders. To counter this problem, state governments can put limits on this liability. For example, New York state law provides nursing homes with protection from negligent hiring lawsuits, if the employer follows the guidance the Department of Health provides after it conducts the background check (Denver et al., 2017). Other states have started putting tighter limits on when a negligent hiring claim can be filed (Korzenik, 2021; National Conference of State Legislatures, 2022) or providing protection to employers who rely on rehabilitation certificates provided by the state (Dewberry, 2018). New research suggests that such a policy might both increase employment and decrease recidivism (Pyle, 2023).

An alternative approach to these costs is to provide insurance that will cover the costs of harm caused by people with records on the job. The longest standing program is the U.S. Department of Labor’s Federal Bonding Program, which offers employers insurance bonds from Chubb Insurance to cover losses created by employee theft and dishonesty during the first six months of employment (Rich, 2016). Bonds are offered free of charge with values ranging from $5,000 to $25,000 in coverage for a 6-month period with no deductible, providing the employer 100% insurance coverage for covered loss up to the value of the bond. Bond coverage can be
purchased from Chubb by the employer after the 6 month period (Federal Bonding Program, 2022).

A third approach involves subsidies for hiring someone with a record. The most prominent example of this type of policy is the federal Work Opportunity Tax Credit (WOTC) offers up to $2,400 to employers who hire an employee with a felony record within a year of their conviction or release from prison. Also, several states offer tax credits of up to $3,000 a year to employers who hire people with criminal records (Nery & Astrada, 2020). In the U.S., however, relatively few companies currently receive such tax credits. In 2012, for example, only 22,000 tax credits were given for hiring people with felony records, out of a total of almost 900,000 program-wide. Most wage subsidy programs for those with records tend to be focused on transitional, temporary jobs created specifically for those exiting prisons. These programs have mixed results but in general do appear to reduce recidivism (Cummings & Bloom, 2020).

Government incentives to employers for hiring people with convictions are part of a broader group of wage subsidy programs, which are a common practice in Europe (Vooren, Haelermans, Groot, & Maassen van den Brink, 2019) and were at one time the predominant form of hiring incentive in the U.S. (Dutta-Gupta, Grant, Eckel, & Edelman, 2016). The Targeted Jobs Tax Credit, the major U.S. wage subsidy program for the economically disadvantaged from 1979 to 1994, created modest positive employment effects on economically disadvantaged young adults, including those with records (Katz, 1996; Vooren et al., 2019). Although limited, the existing evidence provides some reason to expect that wage subsidy programs for those with records may improve their employment outcomes and create net positive benefits to society (Dutta-Gupta et al., 2016).
One of the perceived problems with this policy was that employers were getting subsidies for people they would have hired anyway without the incentive, therefore getting free money without increasing employment. As a result, the government tightened the rules in the WOTC to require the employer to document that they learned about the record prior to making the job offer (Internal Revenue Service, 2022). Ironically, this requirement makes it virtually impossible to use this tax credit in the Ban-the-Box environment, where employers only find out about the record after they make a contingent offer to the applicant.

3. EXISTING EVIDENCE

Researchers have begun to explore the potential effectiveness of direct incentives for hiring those with records. Using a small convenience sample (N = 107), Hunt et al. (2018) focused on policies that gave employers more information about applicants, and that provided monetary incentives, but that left liability for harm unchanged. Specifically, they conducted two experiments that asked employers to choose between agencies rather than applicants. In the experiments, employers considered identical applicants (i.e., with “the same technical skills and work experience needed for the job, as well as one nonviolent felony in their criminal history”) who were “associated with different agencies.”1 In both experiments, employers preferred agencies that provided more informative rehabilitation certificates and larger (but still modest) monetary incentives. Unfortunately, two study limitations constrain the policy relevance and external validity of these findings. First, there were no control conditions (i.e., levels without direct benefits) in the experiments. All the agencies offered rehabilitation certificates and

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1 In the first experiment, the choice was between “government employment agencies” that offered different rehabilitation certificates and different payment incentives under different work requirements and different paperwork conditions. In the second experiment, the choice was between “private employment agencies” that offered different rehabilitation certificates, different cost discounts, different levels of transportation assistance, and different guarantees about replacing unsatisfactory employees.
monetary incentives; they varied only in how much information and money they provided.  
Second, the employers in the study did not evaluate applicants with different characteristics (e.g., conviction types), as they would in the real world.  

In a different survey, Santos et al. (2023) had employers choose between two applicants who differed on criminal record (not randomized), but who were otherwise identical—they had the same name (“John”), the same education (some high school), and the same work experience (5 years).\(^2\) The only randomized variable was the record-holder’s hourly wage ($0 to $15). Santos et al. (2023) found little evidence that wage reductions would increase the hiring of record-holders. However, it is not clear how much this finding tells us about monetary incentives as a policy. The study’s biggest limitation was that the wage reduction was not explained to participants (i.e., they were never told why the record-holder’s salary would be lower) and was potentially illegal (i.e., minimum wage laws forbid many of the salary levels used in the experiment). Other study limitations include: 1) the authors did not randomize the applicants’ criminal record (i.e., the second “John” always had a criminal record), 2) the criminal record was always the same (i.e., possession with intent to distribute), 3) the decision task was artificial (i.e., employers rarely consider identical applicants), and 4) manipulating a single factor (hourly wage) does not resemble real-world choices, which are multidimensional and require trade-offs between dimensions (Auspurg & Hinz, 2015; Hainmueller, Hopkins, & Yamamoto, 2014).  

A third experiment was conducted using an online labor platform for hiring short-term contract workers (Cullen et al., 2023). Instead of offering a discrete choice between specific applicants, this experiment manipulated the general conditions under which an employer could

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\(^2\) Santos et al. (2023, p. 9) conducted four A/B experiments using the two “John” applicants (John A vs. John B). Each experiment randomized “one additional key characteristic of person B” (i.e., either education, recommendation letter, wage, or experience) but held the other variables constant across the applicants. Only the wage experiment touches on direct hiring incentives; in it the applicants’ names, education, and work experience were held constant.
accept contractors with criminal records. The following factors were randomized: wage subsidies (ranging from 5% to 100%), insurance (from $1,000 to $5 million), screening for satisfactory completion of prior jobs on the platform (from 1 to 25 jobs), and screening by time since last conviction (from 1 year to 7 years). Importantly, employers who agreed to the offered conditions were committed to hiring under them, with a guarantee that the pool of workers with records would not exceed 5%. The findings showed that insurance was effective for getting employers to accept contractors with records. However, only very large wage subsidies (i.e., 50% to 100% of the posted wage) exerted significant effects.

However, the study had several limitations that make it difficult to draw conclusions about incentive policies from its findings. First, the employers in the sample were all hiring independent contract workers for short-term jobs using a specific online labor platform. This meant that the employers’ actual risk of exposure to negative consequences was low, because the workers were hired only for very brief time periods (e.g., one or two shifts). Second, all the hiring was done indirectly (i.e., the employers did not make decisions about individual applicants). Thus, the findings do not inform the question of how incentives affect the choice between applicants with different characteristics. Third, some of the levels tested for wage subsidies (e.g., a 100% subsidy) and insurance (e.g., $5 million) were far higher than anything likely to be offered by any U.S. government program. Fourth, the policy conditions tested did not address the Ban-the-Box context, as they dealt with criminal record information up front, allowing employers to stipulate conditions under which they would hire people who have criminal records. Fifth, the study created a situation that is unrealistic in most hiring contexts—specifically, a guarantee that only 5% of the worker pool would have a criminal record. Similarly, the default in the experiment was an environment where no workers had a criminal
record, which is neither legal nor realistic for a regular employer hiring people in the standard, non-gig labor market.

4. OUR APPROACH

We sought to design experiments that more closely resembled the decision environment faced by hiring managers in the real world, that addressed all the issues noted above, and that mitigated the influence of social desirability bias. First, we used a national sample that was not limited to any specific labor platform, that was not restricted to temporary jobs, and that was not given any guarantee about criminal-record prevalence. Specifically, we recruited an occupationally and geographically diverse sample of hiring decision-makers from YouGov, and then had them make hiring decisions under introduced incentives. These hiring decisions occurred in multidimensional conjoint and vignette experiments embedded in an anonymous, self-administered survey. Although manipulating the characteristics of actual hiring situations would be ideal, field experiments are not always possible, especially with the advent of laws like Ban-the-Box, which delay the background check in the hiring process, putting it out of view of standard audit studies. Fortunately, evidence shows that conjoint and vignette designs are an effective and efficient method for assessing real-world decision-making across different types of actors, such as hiring managers (Auerbach & Thachil, 2018; Hainmueller et al., 2015; Oesch, 2020; Petzold & Wolbring, 2019). These designs also reduce social desirability bias (Auspurg & Hinz, 2015; Horiuchi et al., 2022; Mize & Manago, 2022).

Second, we used a broad set of incentive conditions with realistic levels—wage subsidy ($2,400 tax credit), insurance ($25,000), and statutory protection against misdemeanor-specific negligent hiring lawsuits—that were randomly assigned independent of other applicant characteristics. Third, we focused on direct hiring decisions by having participants evaluate
specific applicants with different (randomized) characteristics. Fourth, we tested the incentives under traditional hiring and under compliance with typical Ban-the-Box requirements. In the latter experiment, we also randomized whether the applicants had rehabilitation certificates.

5. MATERIALS AND METHODS

An important concern in designing any survey-based study of employer decision-making is mitigating social desirability bias (Pager & Quillian, 2005). Decades of research have shown that the most important steps for doing this are: 1) using self-administration, ideally via computer, and 2) ensuring confidentiality or anonymity (Gnambs & Kaspar, 2015; Tourangeau, Conrad, & Couper, 2013; Tourangeau & Yan, 2007). Additionally, using factorial experiments to randomly vary multiple factors simultaneously combats social desirability bias, while enabling causal inferences (Auspurg & Hinz, 2015; Horiuchi et al., 2022). As Mize and Manago (2022, p.20) explain, in “anonymous online survey experiments … participants have little motivation to misrepresent their true beliefs.” Therefore, we used self-administered, online, anonymous, factorial survey experiments to study the effects of direct incentives on hiring decisions.

The survey experiments reported herein were conducted in fall 2022 via computerized self-administration with a nationwide sample of hiring decision makers (N = 1,000). YouGov, a leading polling firm that regularly fields surveys for scientific research (Ansolabehere & Schaffner, 2011; Simmons & Bobo, 2015), developed the sample using screening criteria and its online panel (~2 million U.S. panelists). Participation was limited to adult (18 or older) U.S. residents who: 1) were employed at the time of the survey, 2) worked in an organization

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3 Notably, in documenting social desirability bias in employer surveys, Pager and Quillian (2005) used a telephone survey with live interviewers—a survey mode that is inappropriate for sensitive questions and that is well-known to result in especially high levels of social desirability bias (Tourangeau & Yan, 2007). Indeed, telephone surveys are the worse mode for social desirability bias (Kreuter et al., 2008), worse even than face-to-face interviewing (Holbrook et al., 2003). Telephone surveys also have especially high levels of satisficing (Holbrook et al., 2003).
(company or agency) with multiple employees, and 3) had input on hiring decisions at their workplace.

The resultant sample of participants had extensive hiring experience and worked for organizations of diverse sizes in many different industries. Most participants had the majority (or all) of the input on hiring decisions at their workplace, and the rest had at least some input (Fig. S1). Most participants had made five or more hiring decisions in the past five years. Most also expected to make at least five hiring decisions in the next five years. Most participants worked at organizations that had at least 50 employees, but over a fifth worked at organizations that had 1,000 or more. Participants most commonly worked in retail, health care, construction, education, or manufacturing. The participants were geographically diverse (18% in the Northeast, 22% in the Midwest, 38% in the South, and 22% in the West), mostly white (69%), about evenly split on gender (49% male), and had an average age of 46 years.

5.1. Hiring-Incentive Conditions

To test whether participants could be incentivized to hire applicants with criminal records, we had them complete two hiring experiments under one of four randomly assigned hiring-incentive conditions (i.e., control, tax credit, insurance, lawsuit restrictions). The exact procedures and question wording for all experiments are provided in the online supplement. The hiring-incentive conditions were introduced at the start of the survey and held constant across the subsequent hiring experiments. The control group received no incentives and made decisions under the status quo. The treatment groups made decisions under a new policy that provided one

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4 Although some readers may wonder whether this design might result in demand effects, research indicates that such concerns are typically unfounded in survey experiments. Mummolo and Peterson (2019) conducted a rigorous and comprehensive analysis, concluding: “our consistent inability to uncover evidence of hypothesis-confirming behavior across multiple samples, survey platforms, research questions and experimental designs suggests that longstanding concerns over demand effects in survey experiments may be largely exaggerated” (p. 528).
of three types of incentives for hiring employees with criminal records: 1) a $2,400 tax credit per employed record-holder, 2) $25,000 insurance against losses from employee dishonesty, or 3) a statutory restriction on negligent-hiring lawsuits to cases where employees have felony (rather than misdemeanor) records.

The control and treatment groups answered two questions (compliance checks) to ensure that they read and understood the information provided (Harden, Sokhey, & Runge, 2019). (The control group received information only about the difference between felony and misdemeanor records; the three treatment groups received that same information plus the respective policy information.) Most participants (85%) answered both compliance checks correctly. In the main analyses, per the preregistration, we used the full sample to estimate intent-to-treat (ITT) effects, the most relevant estimand given the low probability that all employers would have perfect knowledge about any enacted policy. In additional analyses, we dropped non-compliers in the control and treatment groups (participants who answered the checks incorrectly) to estimate what Imbens and Rubin (2015, p. 537) term “the average effect of receipt of treatment for compliers” (Imbens & Rubin, 2015). Per the preregistration, our main interest was in estimating the effects of receiving any incentive (all treatment groups combined) versus the control, whereas estimating the effects of the specific incentive types was of secondary interest.

5.2. Experiment 1: Traditional Hiring Scenario

The first hiring experiment was a paired-profile conjoint analysis with a $2^13^42^5^1$ factorial design (Bansak, Hainmueller, Hopkins, & Yamamoto, 2021; Hainmueller et al., 2014), and corresponded to the traditional situation where criminal records are disclosed at the application stage. Research indicates that “conjoint designs are particularly effective at combatting social desirability” (see also Horiuchi et al., 2022; Mize & Manago, 2022, p.7). Conjoint designs also
have high external validity (Hainmueller et al., 2015). In our conjoint experiment, participants evaluated fourteen job applicants that were paired in seven conjoint tables and defined by eight attributes, and then indicated which applicant in each pairing they would be most likely to hire. This resulted in 13,998 choice outcomes clustered in 1,000 participants. Criminal record was the attribute of interest. It had five levels that we randomly assigned with differing probabilities to increase reference-group size while also capturing the high frequency of records among unemployed applicants: 1) none (40%), 2) misdemeanor drug possession (15%), 3) misdemeanor theft (15%), 4) misdemeanor assault (15%), and 5) felony assault (15%).

Seven other “control” attributes (race/ethnicity, gender, age, education, tattoos, work experience, and recommendation letters) were included to minimize construct confounding and increase realism (Bansak et al., 2021; Dafoe, Zhang, & Caughey, 2018). We used a uniform randomization distribution to assign the levels of the control attributes, except for gender (40% female, 40% male, 20% non-binary), because binary gender identification remains most common among job applicants. The ordering of attributes in the conjoint tables was held constant within participants but randomized between them (Bansak et al., 2021). Per the preregistration, we used the standard analytic strategy for forced-choice conjoint experiments (Bansak et al., 2021; Hainmueller et al., 2014), estimating the models with ordinary least squares regression, data at the profile level, and standard errors clustered at the participant level.

5.3. Experiment 2: Ban-the-Box Hiring Scenario

In the second hiring experiment, participants evaluated hypothetical job applicants who had been tentatively hired, pending a background check. The participants were asked to imagine the tentative employees were otherwise qualified for the job. They then received the background checks and made the final hiring decision. Per the preregistration, the goal was to test whether
the hiring incentives introduced earlier would increase participants’ willingness to finalize hiring for tentative employees discovered to have a criminal record. Thus, the tentative employees in the second experiment all had criminal records, the characteristics of which were randomized.

Specifically, the experiment had a $2^43^2$ factorial design, wherein each participant evaluated four tentative employees, whose race, sex, and criminal record (number of convictions, most serious offense, date of last conviction, and completion of rehabilitation) were randomized. The criminal record information was presented in tabular form. However, to match the Ban-the-Box context in which employers engage with tentative employees before conducting background checks, the employees’ race and sex were presented visually. This was done using photos taken from the Chicago Face Database (CFD) (Ma, Correll, & Wittenbrink, 2015), which were matched as closely as possible (for each tentative employee) on CFD ratings ($N = 25$ to $96$) of threateningness and trustworthiness (see Table 1).

[Insert Table 1 about here]

The experiment resulted in 3,989 hiring decisions clustered in 1,000 participants. In addition, participants rated the likelihood that each record-holding applicant would be a problematic employee if hired. Ratings were given for four types of workplace misbehavior: disrespect, rule-breaking, theft, and assault. Per the preregistration, we averaged the ratings to form an index measuring criminal stigma (factor loadings = .66 to .82, $\alpha = .85$). Our preregistered hypothesis was that while applicant characteristics would indirectly affect hiring decisions via criminal stigma, hiring incentives would directly affect hiring decisions, net of criminal stigma. This hypothesis directly tests the idea that the incentives work by providing compensation for hiring record-holders, rather than by reducing the perceived risks (through
reduced stigma). Per the preregistration, we used ordinary least squares regression to estimate the models, with data at the vignette level, and standard errors clustered at the participant level.

6. RESULTS

6.1. Experiment 1: Traditional Hiring Scenario

This experiment addressed two questions: 1) How much does having a criminal record (versus not having a record) hurt a job applicant’s chances of being hired? And 2) Will hiring incentives help? We sought to answer these questions using a conjoint analysis wherein participants collectively viewed 14,000 randomly generated and tabularly paired applicants, and then chose which to hire from each pair. The applicants varied on criminal record as well as on seven other attributes (work experience, education, race/ethnicity, gender, age, tattoos, and recommendation letters). Fig. 1 shows the attributes’ main effects on hiring decisions. All eight attributes exerted statistically significant main effects in the full sample of participants (“intent-to-treat,” or ITT), and all but one (Male) did so in the reduced sample of compliers (“average effect of receipt of treatment for compliers,” or AERC) (see Fig. 1).

Before considering how criminal records affected hiring decisions, it is useful first to examine the effects of the other applicant characteristics. If the surveyed hiring managers’ responses in the experiment mirror real-world hiring decisions, then applicants’ job qualifications (e.g., education, experience) should matter. They did. Participants were more likely to hire applicants who had relevant work experience (one year: $b = .091, p < .001$; five years: $b = .219, p < .001$), who had a degree (GED: $b = .105, p < .001$; High school degree: $b = .099, p < .001$; Associate degree: $b = .181, p < .001$), and who had a recommendation letter (pro forma: $b = .090, p < .001$; excellent: $b = .158, p < .001$).
Past research found that employers are more likely to hire applicants who are under 55 years of age (Oesch, 2020). We found the same thing (45-years-old: $b = .034, p = .003$; 35-years-old: $b = .045, p < .001$; 25-years-old: $b = .035, p = .002$). Participants in our experiment were also more likely to hire applicants whose gender identification was binary (male: $b = .032, p = .006$; female: $b = .042, p < .001$) and who lacked visible tattoos (tattoo: $b = -.065, p < .001$). Surprisingly, however, participants were more likely to hire racial/ethnic minorities (Hispanic/Latino: $b = .025, p = .013$; Black: $b = .025, p = .010$). This finding mirrors the results from another recent hiring experiment (Peyton, Weiss, & Vaughn, 2022). It is unlikely to be due to social desirability bias, for three reasons: 1) meta-analytic research has found that survey respondents “appear to honestly report their prejudices based on race” (Blair, Coppock, & Moor, 2020, p. 1310); 2) we used an anonymous, self-administered, conjoint design (Horiuchi et al., 2022; Tourangeau & Yan, 2007), and 3) the participants in our sample did discriminate against applicants based on demographics (age and gender; see above) as well as criminal record (see below).

Research Question 1: How Much Does Having a Criminal Record Hurt?

Field experiments have found that criminal records reduce callback rates (Agan & Starr, 2018; Pager, 2003; Uggen, Vuolo, Lageson, Ruhland, & K. Whitham, 2014). The same story emerges in our first survey experiment: participants were less likely to hire applicants with criminal records. In the full sample, net of other factors such as education, work experience, and

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5 Additionally, we agree with Mize and Manago (2022, p. 20), who “critique the common but potentially misguided explanation of social desirability bias to explain null or surprising effects.” It also bears emphasizing that our experiments control by design for many of the mechanisms (e.g., perceived criminal history [via randomized record type], expected work performance [via randomized recommendation letters], perceived trustworthiness and threateningness [in Study 2, via matched CFD pictures]) through which applicant race may exert effects on employer decision-making (Dafoe et al., 2018). This may explain why the differences by applicant race found in audit studies (Quillian et al., 2017) do not emerge in our experiments (Gaddis, 2019).
recommendation-letter strength, having a criminal record reduced the probability that an applicant would be hired by 6 to 29 percentage points, depending on conviction type (misdemeanor drug: \( b = -.058, p < .001 \); misdemeanor theft: \( b = -.111, p < .001 \); misdemeanor assault: \( b = -.134, p < .001 \); felony assault: \( b = -.290, p < .001 \)). In the control group, where participants made hiring decisions under the status quo (without incentives), having a criminal record reduced the probability of being hired by 12 to 34 percentage points. Without incentives, applicants convicted of a misdemeanor drug offense had a coin-flip chance of being hired (50%), whereas those with other conviction types were unlikely to be hired (27% to 45% chance). The single strongest predictor of failing to get hired was having a violent felony record.

[Insert Fig. 1 about here]

**Research Question 2: Will Hiring Incentives Help?**

Per the preregistration, we tested the causal moderation effect of hiring incentives using the parallel estimation framework (Bansak, 2021). The focal comparison is of participants receiving no hiring incentive (control group) to those receiving any hiring incentive (treatment groups combined). The results are shown in Fig. 2, which plots the effect of each type of criminal record (versus no record) in the control group, in the combined treatment group, and then in each treatment group separately.

When considered together, hiring incentives reduced the effect (ITT) of an applicant’s criminal record by 3 to 8 percentage points (AERC = 1 to 8 points), depending on the record type. Three of the four causal moderation effects (differences in coefficients) were statistically significant (\( p = .015 \) to \( .008 \)). For example, in the control group, where participants received no hiring incentives, applicants with a misdemeanor drug record were 12 percentage points less
likely to be hired than applicants without records ($b = -0.115, p < .001$), but this effect fell to 4 points ($b = -0.038, p = .010$) in the combined treatment groups.

Notably, the different hiring incentives were not equally effective. The tax credit was the most effective, the negligent-hiring lawsuit restriction was the least effective, and the employee-dishonesty insurance fell in the middle. To illustrate, under the tax credit (as compared to the control group), applicants with nonviolent misdemeanor records were 10 to 15 percentage points more likely to be hired ($p < .01$), and applicants with violent felony records were 16 points more likely to be hired ($p < .001$). By contrast, the lawsuit restriction did not have a significant beneficial ITT effect for any type of record-holding applicant, and it had a harmful effect for applicants with violent felony records (who were not covered by the policy), reducing their likelihood of being hired by 7 percentage points ($p = .042$). That the hiring incentives exerted different and nuanced effects (i.e., by criminal record type) is of considerable policy relevance; it also indicates that the participants made thoughtful, substantive decisions, instead of merely responding in some consistent way (e.g., social desirability bias, demand effects).

6.2. Experiment 2: Ban-the-Box Hiring Scenario

Ban-the-Box policies require employers to provisionally hire qualified job applicants before conducting background checks (Avery & Lu, 2021). Our second hiring experiment tested whether hiring incentives have beneficial effects when employers discover that tentative employees have criminal records. It also allowed us to explore the role of record-related stigma (expected workplace misbehavior) in this hiring context (Sugie et al., 2020). Participants viewed the background checks for four tentative employees, all of whom had criminal records (with
randomized attributes), and then decided whether to cancel the initial job offer (N = 3,989 decisions, 1,000 participants). Overall, only 43% of the initial job offers were canceled, demonstrating the usefulness of delaying background checks. To measure criminal stigma, we had participants rate each tentatively hired record-holder’s likelihood of misbehaving on the job (if hired). This measure allowed us to test the extent to which participants used records as signals to judge whether applicants would be good employees.

Research Question 1: How Do Criminal Records Affect Stigma and Hiring?

Fig. 3 shows the effects of the tentative employee’s criminal record characteristics on criminal stigma (top panel) and on the final hiring decision (bottom panel). Past research has found that employers stigmatize applicants with criminal records (Sugie et al., 2020), but that positive credentials, like rehabilitation certificates, can reduce stigmatization (Denver & DeWitt, 2023). Our results are similar. The applicants’ number of convictions, recency of conviction, severity of crimes, and completion of rehabilitation all significantly affected criminal stigma. All these characteristics also significantly affected the final hiring decision. Participants were less likely to finalize hiring for tentative employees discovered to have multiple convictions (two: \( b = -0.133, p < .001 \); three: \( b = -0.226, p < .001 \)), convictions from two (versus seven) years ago (\( b = -0.178, p < .001 \)), and non-drug convictions (theft: \( b = -0.135, p < .001 \); assault: \( b = -0.270, p < .001 \)). Importantly, they were more likely to hire tentative employees with rehabilitation certificates (\( b = 0.115, p < .001 \)). All the criminal record characteristics had significant indirect effects (all \( p < .001 \)) on hiring through criminal stigma, as well as significant direct effects (all \( p < .001 \)). In other words, a major reason that participants hesitated to finalize hiring for tentative employees discovered to have extensive, recent, or serious criminal records and no rehabilitation
certificate was that they believed such records signaled a higher risk of future workplace
misbehavior (proportion mediated: 28% to 48%). However, even net of risk perceptions,
criminal record characteristics continued to matter, presumably because of cost (e.g., liability)
concerns or a simple distaste for people with records.

[Insert Fig. 3 about here]

Research Question 2: Will Hiring Incentives Help?

Per the preregistration, the focal estimands in the second experiment are the main effects
(total and direct) of hiring incentives on participants’ willingness to hire tentative employees
who are discovered to have criminal records. Although we expected the incentives to affect
hiring, we did not expect them to significantly affect criminal stigma, and they did not (p = .163
to .445). That is, the incentives did not address the lack of information about applicants. Rather,
they specifically compensated employers for hiring record-holders. Fig. 4 presents the total and
direct effects of the incentives on final hiring decisions. When participants received any
incentive (versus no incentive), it increased the probability that they would hire tentative
employees discovered to have records by about 6 points (total ITT effect: \( b = .058, p = .014 \);
direct ITT effect: \( b = .041, p = .044 \)).

As with the first experiment, however, some incentives were more effective than others.
Specifically, the tax credit had the largest effect, increasing the probability of hiring by about 9
points (total ITT effect: \( b = .091, p = .002 \); direct ITT effect: \( b = .079, p = .002 \)). Receiving
insurance against employee dishonesty was also effective, increasing the probability of hiring by
about 7 points (total ITT effect: \( b = .068, p = .016 \); direct ITT effect: \( b = .047, p = .051 \)). By
contrast, and mirroring the results from the first experiment, the lawsuit restriction was
ineffective (total ITT effect: \( b = .016, p = .558 \); direct ITT effect: \( b = -.004, p = .880 \)).
6.3. Supplementary Analyses for Both Experiments

All the participants in our sample indicated they had input on hiring decisions at their workplace, but not all of them were active hirers. We defined active hirers as those who had made a hiring decision in the past five years and also expected to make another one in the next five. Per the preregistration, the main models were estimated using the full sample. However, we re-estimated the models after limiting the sample to the 93% of participants (Fig. S3) who qualified as active hirers. The findings among active hirers are shown in Fig. S4-S7 of the online supplement and reveal similar benefits of hiring incentives in both experiments.

7. DISCUSSION

The current study built on the nascent literature on employer responses to direct incentives. We sought to better understand how to incentivize employment of people with criminal records under both traditional hiring rules and increasingly common Ban-the-Box laws. Our experiments tested an array of incentives, including validated information on rehabilitation (certificates) and protection against lawsuits, as well as direct monetary benefits (insurance for modest losses and tax credits). The results showed that relatively modest incentives for employing workers with criminal records changed participants’ hiring decisions.

In the traditional hiring context, where criminal record information was available at the application stage, we found that participants were significantly less averse to hiring record-holders when they received either a $2,400 tax credit for doing so or $25,000 insurance against losses from employee dishonesty. Similarly, a modest insurance policy mirrored on the
maximum bond amount available through the Federal Bonding Program, decreased the impact of a misdemeanor drug conviction to near indifference. Similarly, a modest insurance policy, but one that is higher than the current federal bond, decreased the impact of a misdemeanor drug conviction to near indifference. Both the tax credit and the insurance also significantly reduced participants’ aversion to applicants with violent felony convictions, although such record-holders remained about 20 percentage points less likely than those without records to be hired, all else equal. Nevertheless, in the real world, where all else is rarely equal, such incentive-based reductions in employers’ aversion to applicants with felony records could prove decisive. For example, if the most qualified applicant also happens to have a felony conviction, then incentives could motivate an employer to not look to less-qualified applicants. Additionally, whereas we found that a tax credit and insurance had sizable effects when considered separately, the combination of these incentives could be even more effective, and may move employers close to indifference for applicants with violent felony records.

The results from our second experiment were even more striking, as they showed that Ban-the-Box fundamentally changes the dynamics of the hiring decision. While in the traditional hiring experiment, participants without incentives were unlikely to hire applicants with a criminal record when the alternative was someone without a record, most participants in the Ban-the-Box context upheld tentative hiring decisions even after subsequent background checks revealed records. Additionally, as they did in traditional hiring, the tax credit and the insurance both had beneficial effects under Ban-the-Box, significantly increasing the probability that participants would uphold the tentative hire (by 9 and 7 percentage points respectively). These incentives do not appear to fundamentally change perceptions about record-holders’ likely performance as employees, but instead compensated employers for hiring employees who
became subjectively less desirable when their criminal histories were revealed. To our knowledge, this is the first evidence that direct incentives exert beneficial effects under Ban-the-Box.

Consider an employer who hires 1,000 employees a year and faces a hiring pool where 30% of the qualified people they would agree to hire have records (Cullen et al., 2023). Our experiment finds that, without incentives, the employer would convert 171 (out of 300) people with records to permanent positions. We estimate that the average employer would convert 198 people to permanent positions (16% increase) with the tax credit and 192 people to permanent positions (12% increase) with the insurance. These are sizeable gains for a population facing large scale unemployment (Bushway et al., 2022).

This result is particularly important because earlier large-scale efforts at wage subsidies (targeting those on welfare, rather than record-holders) generated concerns that subsidies may actually increase stigma for targeted groups, reducing their employment (Katz, 1996). These concerns have reappeared in discussions about incentives for those with records, particularly in the Ban-the-Box era where employers will not know about the existence of a record until after the provisional hire. However, our research suggests that the incentives do not increase stigma and may work well in the Ban-the-Box framework, because they provide incentives to hire applicants whom employers already wanted to hire, before learning about their criminal histories. Unfortunately, the current form of WOTC is difficult to implement in the Ban-the-Box context.

The results from the Ban-the-Box experiment also showed that rehabilitation certificates designed to provide more information to employers about the reoffending risk of applicants who have a criminal record exerted beneficial effects. Specifically, we found that employers were significantly more willing (by about 11 percentage points) to hire applicants who had
rehabilitation certificates. Rehabilitation certificates worked, in part, by reducing criminal stigma. That is, employers believed that record-holders with rehabilitation certificates were less likely to misbehave on the job. Supplementary analyses revealed that rehabilitation certificates were equally effective in the presence of the other incentives, and regardless of whether applicants had nonviolent or violent convictions. This indicates that providing such certificates and reducing the financial and time barriers to obtaining them, may be a broadly effective way to get more people with records hired. That said, future research is needed to test whether rehabilitation certificates may lose their signal strength if they become more common, as they might if the financial and time barriers to obtaining them were reduced (Bushway & Apel, 2012).

The one type of incentive that we did not find to be effective under either traditional hiring or Ban-the-Box is statutory protection against misdemeanor-specific negligent hiring lawsuits. In fact, this policy had adverse effects for applicants with felony convictions, reducing their likelihood of being hired. This result is particularly important given the emphasis on negligent hiring concerns in the discussion about background checks (McElhattan, 2022). One explanation may be that hiring managers do not make the decision about liability risk, which is the domain of the general counsel. Alternatively, it may be that liability fear among employers attaches mostly to applicants with felony records. The results of a third experiment (reported in the online appendix, Fig. S8), which was completed after our two main hiring experiments, are consistent with this latter explanation. Specifically, the participants in our sample perceived that: 1) the risk of being sued is higher when an employee has a felony versus misdemeanor record, 2) the risk that a claimant (victim) will win in court is higher, and 3) the sum awarded to a

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6 It is more difficult to estimate the potential impact of rehabilitation certificates, given that not all people who are conditionally hired will be eligible for a rehabilitation certificate. In addition, eligibility for a certificate varies dramatically across states.
successful claimant will be higher. By extension, it may be that statutory protections against lawsuits are most (or only) effective when they reduce liability for employing people with felony convictions.

Two primary limitations of our study bear mention. First, the experiments used actual hiring managers but hypothetical applicants. Although existing evidence indicates that such experiments yield externally valid findings (Auerbach & Thachil, 2018; Hainmueller et al., 2015; Oesch, 2020; Petzold & Wolbring, 2019), additional research is needed to replicate our results in the field. It is possible that the participants would think about these issues differently in the context of a real hiring decision. Second, the participants in our experiments were self-reported hiring decision-makers. However, in large companies with formal background check policies, hiring decisions may be made at a higher level (corporate) and may involve less information about individual applicants. As a result, our results may be most informative about smaller companies without centralized human resource departments. It is also possible that group discussions about stigma and risk affect real-world decision making. Differences in the types of decision-makers studied may explain the greater effect of modest monetary incentives in our experiments and in Hunt et al. (Hunt et al., 2018), as compared to Cullen et al. (Cullen et al., 2023). The latter focused on human resource departments negotiating a contract with a temporary hiring platform, which set terms allowing short-term workers to have a 5% chance of being record-holders. The impact of incentives may well depend on the nature of the hiring decision and the location of employment discretion within the company.

To conclude, the results from our preregistered experiments showed consistent beneficial effects of two modest direct incentives: a tax credit and insurance against losses from employee dishonesty. These incentives increased the hiring of record-holders, regardless of whether
criminal record information was revealed early (traditional hiring) or later (Ban-the-Box). We also found strong evidence that another type of incentive, rehabilitation certificates, increased the hiring of people with records, and did so in the presence of other incentives and regardless of conviction type. The key implication is that a policy regime that combines rehabilitation certificates with modest direct incentives, such as a tax credit or insurance policy, may positively shift the employment levels of individuals with criminal records, even in the presence of Ban-the-Box. However, existing federal policies may need to be revisited to make sure that they are still usable in the Ban-the-Box context.
8. REFERENCES


Table 1. Second Hiring Experiment: Pictures Used, by Tentative Employee Vignette

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**NOTES:** CFD = Chicago Face Database. The pictures were randomized separately for each tentative employee, between participants. We selected the four pictures used for each employee by matching (within employee) on CFD ratings (scale = 1 to 7) of threateningness and trustworthiness (shown here under the pictures). This ensured CFD ratings of threateningness and trustworthiness were similar by employee race ($r = -.009$ and $-.011$) and sex ($r = -.007$ and $-.007$).
Fig. 1. Experiment 1 (Traditional Hiring): Effects of Applicant Attributes on Hiring Decision. Models are estimated using linear regression with robust standard errors clustered at the participant level. Coefficients (with 95% confidence intervals) are shown. The sample sizes are: 13,998 profile choices clustered in 1,000 participants (ITT), and 11,900 profile choices clustered in 850 participants (AERC, or “average effect of receipt of treatment for compliers”).
Fig. 2. Experiment 1 (Traditional Hiring): Effect of Applicant Criminal Record, by Incentive Condition. Models are estimated using linear regression with robust standard errors clustered at the participant level, and control for the seven other randomized attributes of the applicant. Regression coefficients (with 95% confidence intervals) are shown. The significance level for the difference in coefficients between the “control” and “any incentive” conditions is indicated by p(diff). AERC = average effect of receipt of treatment for compliers.
Fig. 3. Experiment 2 (Ban-the-Box): Effects of Tentative Employee Attributes on Criminal Stigma (Top) and Final Hiring Decision (Bottom). Models are estimated using linear regression with robust standard errors clustered at the participant level. Regression coefficients (with 95% confidence intervals) are shown. The sample sizes are: 3,989 evaluations clustered in 1,000 participants (ITT), and 3,393 evaluations clustered in 850 participants (AERC, or “average effect of receipt of treatment for compliers”).
Fig. 4. Experiment 2 (Ban-the-Box): Effect of Incentives on the Probability of Hiring a Tentative Employee with a Criminal Record. Models are estimated using linear regression with robust standard errors clustered at the participant level, and control for the six other randomized attributes of the tentative employee. Regression coefficients (with 95% confidence intervals) are shown. AERC = average effect of receipt of treatment for compliers.