# Does Coordinated Administrative Leadership Improve U.S. Federal Agency Management of Discrimination Problems?

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## Abstract

Although the Equal Employment and Opportunity Commission (EEOC) requires that agency EEO directors are under the direct supervision of agency heads, considerable variation exists whether agencies adequately implement this requirement into practice by adopting a formal mechanism termed a *coordinated reporting organizational arrangement* (CROA). A dual exposure–informal resolution logic is proposed to understand how CROAs improve U.S. federal agencies' organizational efforts at managing workplace discrimination. Statistical evidence from aggregate discrimination caseloads for 131 U.S. federal agencies between 2010–2014 is consistent with this proposed logic. Consistent with this dual exposure–informal resolution strategy, CROAs not only encourage agency employees to report incidents of workplace discrimination, but also augment agency efforts at successful internal resolution of these reported incidents, thus reducing formal complaint filings. Yet, the beneficial effects associated with CROAs are most acutely realized for those agencies displaying either high or low levels of organizational fairness.


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Addressing discrimination problems within the U.S. federal government is a major priority. Effective agency handling of discrimination problems is a key component of the Employment Engagement Index (EEI) annual survey, conducted by the U.S. Office of Personnel Management (OPM), that tracks the quality of the work environment for federal agency employees (OPM 2016). The EEI serves as a critical element of the Cross−Agency Priority (CAP) Goal of the President's Management Agenda (U.S. President's Management Council and the Executive Office of the President 2018: 21). Discrimination within the U.S. federal government workforce, however, remains a persistent problem. For example, the total number of formal complaints filed alleging discrimination against the federal government has exceeded 15,000 cases per annum (*EEOC Annual Report on the Federal Workforce* 2010-2018).[1] This statistic understates the true nature of this problem within the U.S. federal government since most discriminatory behavior is unreported. For example, a recent EEOC Select Task Force report issued in 2016 notes that approximately 25% of sex-based discrimination incidents go unreported (Yu and Lee 2021: 277). The lack of reporting discrimination problems within the U.S. federal government is the result of such reported claims being routinely met with disbelief, inaction, blame, as well as both social and professional retaliation (EEOC Select Task Force 2016: Part 2-C).

Current research on public sector employee discrimination focuses on individual self-reported responses and characteristics from surveys (e.g., Antecol and Cobb-Clark 2009; Cech and Pham 2017; Jackson and Newman 2004; Newman et al. 2003; Tinkler and Zhao 2020; cf. Rubin and Edwards 2020). In terms of organizational-level outcomes, discrimination within public agencies adversely impacts employee attitudes (Antecol and

[1] The total volume of formal complaints filed alleging discrimination against the federal government from 2010 to 2018 range between 15,154 (FY 2016) and 17,583 (FY 2010).

Cobb-Clark 2009; Cech and Pham 2017; Pitts 2009), increases personnel turnover intentions (Antecol and Cobb-Clark 2009; Moon 2017; Naff 1995; Sabharwal, et al. 2019), reduces employee productivity (Sears and Mallory 2011), and lower organizational performance (Choi and Rainey 2010; Moon 2017; Pitts 2009). Unfortunately, little is known regarding how the formal EEOC policies adopted by U.S. federal agencies shape both the reporting and handling of discriminatory incidents at the organizational level.

This study evaluates whether the choice of organizational arrangement adopted within U.S. federal agencies affects its management of discrimination problems. The aim here is to analyze how the managerial choice to undertake Coordinated Reporting Organizational Arrangements (henceforth, CROAs) between agency EEO offices and agency heads shape reported discrimination levels, and how public agencies manage discrimination caseloads. EEOC management directive 110 (MD-110) states "*EEO Director shall be under the immediate supervision of the agency head.*" [29 C.F.R. § 1614.102(b)(4)], and is also charged with advising agency heads in implementing these objectives [29 C.F.R. § 1614.102(c)(1)]. Interestingly, not all EEO directors are formally linked in a *direct* reporting relationship with agency head's offices. Therefore, a chasm often exists between the formal management directive and its application in practice. Although all agencies are formally required to comply with MD−110, it is not uncommon for agencies to lack a formal direct reporting relationship between an agency's EEO office and the agency director's (head's) office. This lack of formal coordination results from the fact that EEO Directors require authorization from agency heads [29 C.F.R. § 1614.102(c)(3)], while EEOC evaluation of the MD-110 provisions are both sporadic and requires agency compliance [29 C.F.R. § 1614.102(c)(5e)]. This study seeks to understand whether an agency's adoption of a CROA between agency EEO offices and agency heads improves how U.S. federal agencies manage discrimination problems consistent with EEOC policies reflected by MD-110.

CROAs provide a mechanism that allows federal agencies to formally prioritize the importance for addressing employee discrimination problems in a coordinated manner between the EEO Director and agency head as outlined in MD-110. A direct reporting relationship between the EEO director and the agency head not only is indicative of a federal agencies' demonstrated commitment to equal employment opportunities (EEOC 2015 Annual Report: 14), but also ensures that the EEO director can enjoy the greatest degree of independence (MD-110: 1-5). CROAs introduce a structurally proximate relationship between an agency's EEO office and its agency leadership, and thus offer a host of organizational benefits such as effective communication, enhanced performance outcomes, and a reduction of employee withdrawal (Antonakis and Atwater 2002: 681, 685; Napier and Ferris 1993: 334, 343).

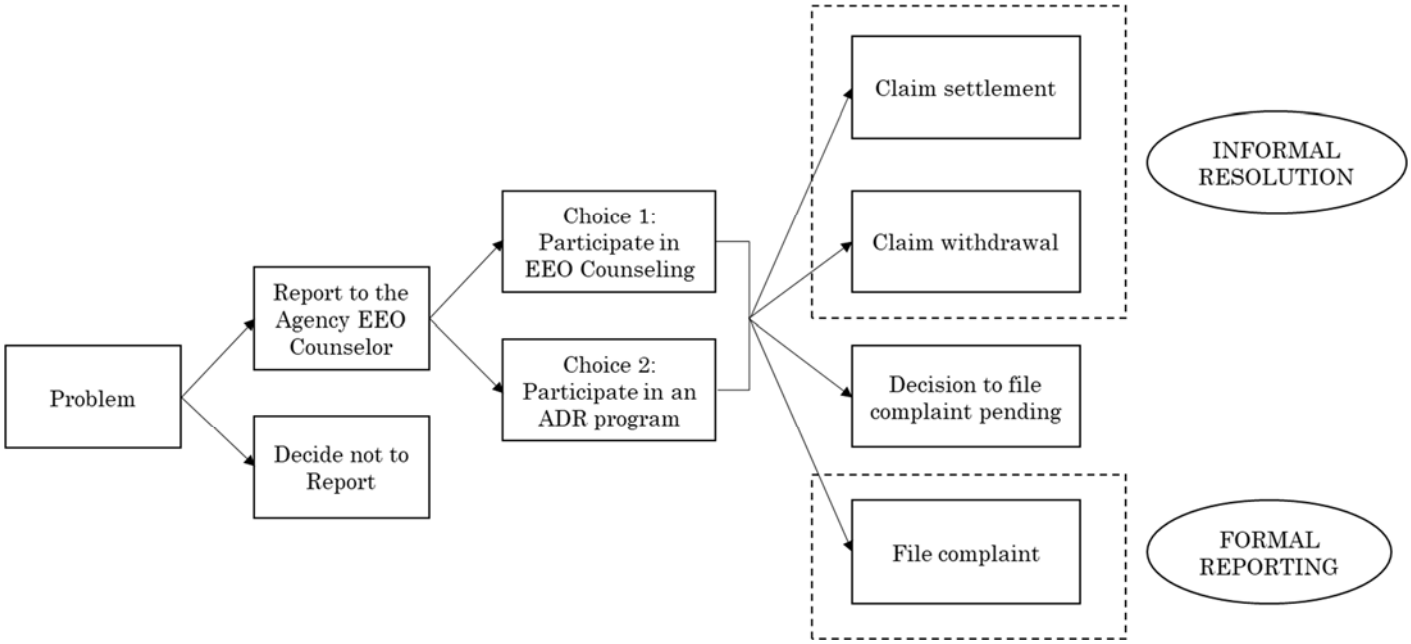
CROAs constitute a formal mechanism that can be deployed to offer sufficient encouragement for employees to report discrimination incidents, while simultaneously seeking to obtain less costly informal resolution of these incidents consistent with EEOC policies (EEOC 2004). Consistent with this dual exposure–informal resolution strategy, CROA compliant agencies exhibit higher reported incidences of discrimination compared to CROA non-compliant (i.e., non–CROA) agencies, while increasing the proportion of reported incidents that are successfully resolved without filing a formal complaint – primarily through channel of withdrawn claims which are less costly to agencies than compared to settlements made as a part of informal resolution. Most of these organizational benefits attributable to CROAs transpire when an agency exhibits either high or low levels of organizational fairness. More broadly, this study sheds light on <u>*both*</u> the prospects and limits of CROAs, and coordinated leadership more generally, for understanding both *how* and *when* U.S. federal agencies grapple with employee discrimination.

## Addressing Employee Discrimination within the U.S. Federal Government: The Importance of Coordination Between the EEOC and Public Agencies

**Figure 1** displays a summary overview of the federal sector EEO complaint process. Once an employee feels that he/she has been the victim of discrimination, the first step is to contact an EEO counselor from their agency within 45 days from the day of the discrimination event (EEOC **nd.a**). The EEO counselor subsumes the role of a neutral actor during this process. All reported discrimination cases must enter through an informal resolution stage that commences when an agency EEO counselor allows the filer to choose between either traditional counseling or alternative dispute resolution (ADR). ADRs empower parties to compose their own resolution in a mutually beneficial manner by avoiding more costly activities relating to formal complaints such as litigation, hearings, and appeals which often yield zero-sum outcomes (EEOC **nd.b**: 1; see also Lacy 2002; Shavell 1995). The ADR range of options includes mediation, facilitation, peer review, to name a few (EEOC **nd.b**: 1*;* see also, Hirsh 2008: 243-244). These informal resolution options seek to reduce both administrative and reputational costs for both the filer and the agency. Both ADR and traditional counseling can limit the number of disputes publicly reported, while also revealing *a priori* information regarding potential trial outcomes (Shavell 1995). Informal resolution processes are also salutary since they generate positive-sum outcomes for both the filer and agency that do not occur using the formal complaint process involving administrative, adjudicative, or legal actions (see EEOC **nd.b**: 2; EEOC 2004: 6; McDermott, et al. 2018: 6). After traditional counseling or ADR process has reached its conclusion, the individual can choose to end this reporting process by (1) withdrawing their claim – thereby electing to formally end the EEO discrimination process, (2) obtaining a settlement, or instead (3) proceeding to file a formal discrimination

complaint.[2] Once a formal discrimination complaint is filed, an agency incurs both considerable administrative and reputational costs, including but not limited to agency EEO office investigations and hearings, and possible adjudication or civil legal action (EEOC **nd.a:** Section F-J).

**Figure 1. Federal Sector EEO Complaint Process**




*Note: This figure is drawn from the EEOC* ***(nd.a)***

EEOC Management Directive 110 (MD−110) is clear regarding the roles of agency authority and responsibility in tackling discrimination problems within the U.S. federal government. "*By placing the EEO Director under the immediate supervision of the head of the agency, the agency underscores the importance of equal employment opportunity to the mission of each federal agency and ensures that the EEO Director is able to act with the*

[2] 'Decision to file complaint pending' (see **Figure 1**) represents the volume of completed counseling/ ADR cases in which (1) the agency did not receive a complaint from a complainant, and (2) the 15-day period for filing a complaint had not expired at the end of fiscal year (EEOC 2010, Appendix I-3).

*greatest degree of independence. This unfettered relationship allows the agency head to have a clear understanding of EEO factors when making organizational decisions.*" (EEOC 2015a: Chapters 4-5). Although the EEO director is supposed to be under the immediate supervision of the agency head according to MD-110, not all agencies adhere to this practice by instituting a formal mechanism (i.e., CROA) that ensures that these respective offices are working closely in tandem to resolve discrimination problems. It was not until the 2015 MD-110 reforms that the EEOC had instituted a systematic process of its own both evaluating and enforcing non-compliance with MD-110 resulted in (1) notice to the agency of non-compliance; (2) written notice of the head of the federal agency; and (3) public notification of non-compliance (MD-110 2015: see 29 C.F.R. § 1614.102(e)).

Still, prior to these 2015 EEOC MD-110 reforms, federal agencies had a pair of strong incentives for adopting a CROA for managing employee discrimination. Because discrimination often occurs in subtle ways that are not overt, and hence, make organizational detection extremely difficult (Hebl, Cheng, and Ng 2020: 259, 271), coordinated leadership offers a coherent organizational response that facilitates the exposure of discrimination problems embedded within public agencies. Second, agencies seek to avoid being out of step with other organizations adopting these salient EEOC policies by engaging in mimetic isomorphism (e.g., DiMaggio and Powell 1983; Frumkin and Galaskiewicz 2004). For instance, concerted organizational efforts at complying with EEOC directives reduce a firm's legal liability while boosting morale among personnel (Edelman, Uggen, and Erlanger 1999: 416). Edelman, Uggen, and Erlanger's (1999: 411) analysis of EEO grievance procedures finds that "*… the adoption of institutionalized structures often provides monetary benefits, as well as legitimacy to organizations."* Relatedly, Hirsh's (2008: 269) analysis of discrimination charge outcomes finds that "*…. EEOC compliance structures lend legitimacy to employers' claims.*" Put simply, CROAs

empower agencies to better comply with MD-110 through coordinated response between EEO offices and agency heads, and thus reduce the external reputational costs that the agency incurs from discrimination problems within their organizations. Next, a dual exposure–informal resolution logic is proposed explaining how CROAs increase the exposure of discrimination problems, increase the share of all reported discrimination cases which are informally resolved following traditional counseling or ADR, where these latter effects are largely a reflection in a higher rate of withdrawn cases that do not require a settlement to avoid a formal complaint from being filed.

## Prioritization of Discrimination Problems via Coordinated Leadership: The Logic of a Dual Exposure–Informal Resolution Strategy

The prior section established that CROAs provide a formal mechanism indicating that federal agencies place an important priority on addressing discrimination problems within their organizations consistent with a firm organizational commitment to EEOC policies reflected by MD-110. It is also worth noting that CROA agencies shall experience benefits that non-CROA agencies do not since the former enjoys the benefits of enhanced communication and performance outcomes in addressing agency discrimination problems associated with such a structurally proximate relationship (see Antonakis and Atwater 2002: 681, 685; Napier and Ferris 1993: 334, 343). This is especially salient given that the agency head faces an inherent tension between its dual responsibilities to aggressively address agency discrimination problems while also protecting their organization's fiduciary and legal obligations (EEOC 2015a: 5). The dual exposure–informal resolution logic proposed here articulates how CROAs serve to coordinate between agency EEO offices and agency heads in a manner that not only uncovers discrimination problems through reported incidents, while also facilitating greater reliance on less costly informal resolutions. These

less costly resolutions require either traditional counseling or alternative dispute resolution (ADR) prior to permitting an individual to file a formal discrimination complaint. Among informal caseload resolution options, those which yield an informal complaint withdrawn following traditional counseling or ADR being completed are preferrable from the agency's perspective to one that requires a settlement as a means of informal resolution.

***Coordinated Leadership Encourages Exposure of Discrimination Incidents***

Addressing discrimination problems at the organizational level is complex for both employees and agencies. Employees incur costs for reporting discrimination that include both reprisal and damage to their career and professional reputations (e.g., Kaiser and Major 2006: 818). This is a serious concern since individuals that disproportionately receive discriminatory behavior tend to belong to low-status social groups such as women, people of color, LGBT, minority religious affiliations, and older individuals, that exhibit a tendency to deflect discriminatory behavior directed towards them by either overlooking or minimizing actions based on 'status-legitimacy' (Kaiser and Major 2006: 804-805; Major, et al. 2002).

Federal agencies experience a 'hidden information' problem when a large share of discriminatory behavior is unreported. Besides the fear of retribution that employees experience for reporting discrimination incidents noted earlier, the payoffs are modest. A recent study reports that only 7% of a large sample of EEOC discrimination complaints between 2012-2016 generate workplace change to redress stated problems, while only 12% receive monetary awards with a median payout of $12,000 (Tomaskovic-Devery, McCann, and Swerzenski 2021). Yet, unreported discrimination adversely impacts the quality of an organizational environment since some individuals will exit, while others who remain are inclined to accept, and possibly perpetuate, an organizational culture where discrimination is tolerated, and perhaps even condoned (Schneider 1991). EEOC compliant federal

agencies that adopt CROAs thus prioritize the importance of encouraging employees to report discrimination so that it does not fester at a subterranean level within an organization, and hence, adversely affect both the recruitment and retention of quality government employees. Although employees' ability to report instances of workplace discrimination is guaranteed by law, reporting is a function of the organizational context, especially organizational commitment towards addressing workplace discrimination (Bergman, et al. 2002). Organizations that take discrimination problems seriously exhibit a leadership commitment that encourages employees to report such incidents.

Naturally, coordinated leadership between agency EEO offices and agency heads via CROAs facilitates greater reporting of discrimination incidences compared to when the EEO office is disconnected from the top administrator within a given agency. This claim is rooted in the EEOC's justification of this organizational arrangement stated in EEOC MD-110 (EEOC 2015a: Chapter 1, Section B). This EEOC policy seeks to ensure that federal agencies treat eliminating discriminatory behavior as an organizational priority, as well as conferring legitimacy to these efforts by encouraging both the exposure and resolution of these problems. Conversely, employees will view agencies that lack leadership commitment to addressing discrimination problems as being negligent, or perhaps even worse, condone such activities. Such undesirable organizational responses adversely impact an agency's reputation for not only taking EEOC policies seriously, but also fostering an environment that makes it difficult to both retain and recruit a talented and diverse workforce.

**H1 (Exposure Hypothesis)**: *The incidence of* ***total*** *reported discrimination cases will be* ***higher*** *under CROA agencies compared to non−CROA agencies.*

The formal coordination between an agency's EEO office and the agency head is to encourage the reporting of discrimination cases that are consistent with the EEOC's mandate [29 C.F.R. § 1614.102(b)(4)] for federal agencies (EEOC 2015a: 5, Chapter 1). **H1**

predicts that the volume of total reported discrimination cases will be greater in CROA compliant agencies than for non−compliant counterparts lacking a CROA.

***Coordinated Leadership Encourages Informal Resolution of Discrimination Incidents***

Although federal agencies wish to increase both the exposure and resolution of discrimination problems occurring within their organizations, they also wish to limit their organizational costs. Manageability of increased exposure translates into agency heads seeking to balance the priority of improving reported discrimination against limiting costly agency action that yields considerable labor and financial expenses, as well as reputational damage. In fiscal year 2012, for example, federal agencies expended approximately $54.9 million in monetary awards resulting from discrimination cases (Lunney 2014). The costs borne by federal agencies go well beyond monetary awards. An earlier EEOC report found that between 1993 and 2003 that the annual average total cost to conduct agency investigations was an additional $ 23.31 million (EEOC 2004) – and this monetary figure excludes investigatory costs, as well as adjudication and other legal proceedings.

If the internal resolution of a reported incident proves unattainable, the employee may file a formal discrimination complaint. This latter process is costly to both the employee and agency since it requires investigation, and often an EEOC administrative law judge, and much less frequently, the individual may appeal to the federal courts if the EEOC authorizes consent. The EEOC (2015a) MD−110: 5 indicates the critical balance that agency heads must strike under a CROA when managing discrimination caseloads:

> *"Federal agencies have a unique role to play in ensuring equal employment opportunity. First, every agency head has a statutory obligation to eradicate unlawful employment discrimination that may occur within the agency. …….. At the same time, the agency head has a fiduciary obligation to defend the agency against legal challenges brought against it (agency defensive function), including charges of*

*discrimination. ….. Moreover, as the Commission's regulations make clear, and as this management directive reinforces, a federal agency head is obligated to protect both the integrity of the agency's EEO process and the legal interests of the agency."*

Because of these legal and fiduciary obligations, agency heads wish to ensure that reported discrimination caseloads do not impose an undue organizational burden. Given the considerable time, effort, and financial cost expended for the formal complaint process (see EEOC **nd.a**: 2-9), agency heads have an incentive to encourage reported discrimination caseloads that emphasize internal resolution through both traditional counseling and ADRs at the expense of formal complaints. In fiscal year 2012, for instance, federal agencies incurred a total of $51.4 million in monetary awards for formal discrimination complaints (at an average award of $12,000) compared to a total of $3.4 million (at an average award of $ 4,652) for reaching a settlement during the informal resolution stage of the process (Katz 2014). Hence, cases that are internally resolved without the filing of a formal complaint are preferable from the agency's perspective than compared to those that do.

Internal case resolution also mitigates damage to an agency's reputation in relation to both the EEOC and external audiences since such processes generate positive-sum outcomes for both the filer and agency that do not occur using the formal complaint process involving administrative, adjudicative, or legal actions (see EEOC **nd.b**: 2; EEOC 2004: 6; McDermott, et al. 2018: 6). Moreover, successfully resolving reported discrimination cases based on informal mediation processes means not only that the EEOC is less inclined to impose additional conditions or sanctions upon the agency, but also that the agency neither receives scrutiny nor blame from external audiences (e.g., other federal agencies, prospective employees, media). Filers are also more inclined to confer institutional legitimacy upon their agency's handling of discrimination cases by resolving the matter internally if the latter is committed to this EEOC directive (McDermott, et al. 2018: 8).

Following from the logic of dual exposure–informal resolution thesis, a coordinated leadership approach via a CROA will be more effective at resolving a higher proportion of reported discrimination cases through informal processes compared to when the agency EEO offices do not directly report to an agency head. Agencies lacking a CROA will thus be less effective at addressing discrimination problems while defending both their own fiduciary and legal obligations. Hence, non–compliant (i.e., non–CROA) agencies will incur greater organizational costs associated with a higher proportion of cases that involve the filing of a formal complaint. This logic produces the second hypothesis:

> **H2 (Informal Caseload Resolution Hypothesis)**: *The proportion of* ***informal*** *discrimination caseload resolution will be* ***higher*** *under CROA agencies than compared to non–CROA agencies.*

Not all internally resolved cases are of equal benefit for agencies. It is preferable from the agency's perspective that a traditional counseling or ADR process outcome yields a withdrawn case requested by the filer, as opposed to a settlement case. The importance of the counseling process cannot be understated. For instance, one crucial factor in determining the effectiveness of ADR in the federal public sector EEO process is the percentage of EEO charges that are resolved as a settlement or withdrawal (EEOC 2007: Section I). Settlement requirements may include payment of attorney fees, compensatory damages, backpay, reinstatement, promotion opportunities, and retaliation prohibitions (EEOC **nd.c**). Although settlement terms are confidential, its mere existence implicitly conveys wrongdoing related to discrimination, unlike when a case is withdrawn by a filer. Because federal agencies incur both greater pecuniary and reputational costs for settlement cases compared to withdrawn cases, this logic predicts that CROA agencies will result in a greater priority on attaining withdrawn cases vis-à-vis case settlements compared to Non–CROA agencies. This logic yields a final pair of related hypotheses:

**H3a (Low Cost Informal Caseload Resolution Hypothesis)**: *CROA agencies will yield a* ***higher*** *proportion of* ***withdrawn caseloads*** *compared to non−CROA agencies.*

**H3b (High Cost Informal Caseload Resolution Hypothesis)**: *CROA agencies will yield a* ***similar*** *proportion of* ***settlement caseloads*** *compared to non−CROA agencies.*

The next section discusses the data, empirical design, and the statistical methods employed to evaluate the testable implications of this dual exposure−informal resolution strategy.

## Data and Empirical Strategy

The thesis is evaluated through an analysis of EEOC reported data from 131 U.S. federal agencies over the 2010−2014 period (N × T = 506). These data come from the *EEOC Annual Report on the Federal Work Force* when data are publicly available for EEOC directive *29 C.F.R. § 1614.102(b)(4)* indicating whether an agency's EEO office directly reported to the agency head (*coordinated leadership/presence of CROA*), or instead was not (*disconnected leadership/absence of CROA*).[3] Both the sample of agencies and the time period of this study are constrained by data availability on whether agencies adopted a CROA. Nonetheless, these data availability constraints offer several advantages for evaluating the effects of CROAs central to this study. First, as noted earlier, the core provisions of MD−110 were structurally altered on August 5, 2015 for the first time since 1999, by taking formal steps to ensure the adoption of CROAs. These revisions include empowering EEOC to issue notices to non−compliant agencies when both detected and unremedied; and the decisions made by administrative law judges as being final (subject to

[3] Both descriptive statistics and data sources for all variables appear in the *Supplementary Appendix* (see ***1. Descriptive Statistics, Data Sources, Listing of Non-Nested & Nested Agencies***).

agency appeal), and not merely a recommendation (EEOC 2015b: 1-2). Second, the sample period starts sufficiently well beyond the enactment of the NO FEAR Act of 2002, and thus does not suffer from confounding attributable to this law's passage and subsequent agency adjustments. Finally, the 2010-2014 time period of this study also ensures that partisan changes in either the executive leadership of the EEOC or the U.S. federal executive branch do not bias the CROA estimates. These data represent a short, unbalanced panel with an average number of cases per agency panel equal to 3.82 years.

Testing the *Exposure Hypothesis* (**H1**) involves an event count dependent variable measuring the total reported incidences of discrimination in an agency for a given year. This dependent variable is merely the sum of the total number of reported discrimination incidences that do not yield a formal complaint plus the total number volume of formal complaints filed (i.e., informal cases filed + formal complaints). These cases include a wide variety of discriminatory behaviors (e.g., sexual and non-sexual harassment; gender, racial, sexual orientation, ethnic, religious, and age discrimination) that are reported within U.S. federal agencies. These data are aggregated to the agency level for two reasons. Conceptually, discrimination constitutes a management problem confronting public organizations that must be handled holistically given that EEOC policies do not offer clear prioritization regarding the management of certain discriminatory behaviors (e.g., sexual harassment) at the expense of others (e.g., racial discrimination) since all forms are viewed as antithetical to both law and a well-functioning workplace (Title VII of the Civil Rights Act of 1964 42 U.S. Code §2000e-2 *Unlawful Employment Practice*).[4] Unfortunately, informal caseload activities disaggregated by type of discriminatory behavior are not made

[4] Title VII of the Civil Rights Act of 1964, Pub. L. No. 88-352, 78 Stat. 253, 42 U.S.C. §2000e (1964).

publicly available by the EEOC. Such granular information is only publicly reported for those reported incidents that result in a formal discriminant complaint being filed.[5]

The dependent variable for testing the *Informal Caseload Resolution Hypothesis* (**H2**) is the informal caseload rate (i.e., informal cases filed / [informal cases filed + formal complaints]). This outcome measure captures the relative extent that agencies shift reported incidences of discrimination towards swift and less costly informal resolution vis-à-vis formal complaints that entail reputational damage, as well as both monetary and time costs for federal agencies. Cases resolved by informal dispute resolution resulting in withdrawn cases will be less costly for an agency compared to those cases that generate a settlement which implicitly acknowledges the filer's claim, and also offering monetary terms. Therefore, testing both *Low Cost Informal Resolution* (**H3a**) and *High Cost Informal Resolution* (**H3b**) hypotheses necessitate that the *informal caseload rate* is further decomposed into the relative frequency of incidences where the claim is withdrawn prior to filing a formal complaint: *withdrawn caseload rate* (i.e., *withdrawn cases* / [*informal cases* + *formal cases*]), and also when the filer reaches a settlement in lieu of filing a formal complaint: *settlement caseload rate* (i.e., *settlement cases* / [*informal cases* + *formal cases*]).

The key covariate of interest is a binary indicator termed *Direct Reporting* that equals one in a given year when an agency reported a coordinated leadership effort at addressing employee discrimination via a CROA by complying to *29 C.F.R. § 1614.102(b)(4)* (***CROA group***), and equals zero in those years when an agency reported that they were not in compliance with this EEOC directive since they adopted a disconnected leadership approach (***Non−CROA group***). The treatment covariate is not fixed through time within a given agency since the decision whether to adhere to *29 C.F.R. § 1614.102(b)(4)* neither

[5] This represents a sample average of 58% of all reported discrimination cases for public agencies.

requires additional resources nor staff commitments to implement for the sample period of coverage. Although U.S. federal agencies are required to comply with this EEOC directive, in practice, it is a managerial choice variable determined by agency heads. Such preferences can change based upon the occupant of the former position, as well as their changing preferences for discrimination caseload management.[6]

Obtaining valid estimates of the impact of agency compliance to EEOC directive *29 C.F.R. § 1614.102(b)(4)* on discrimination caseload management requires addressing two critical issues. First, agencies are neither randomly assigned to the compliance/coordinated leadership group (***CROA***) nor the non-compliance/disconnected leadership group (***Non−CROA***). That is, discrimination caseload management may be driven by other dissimilarities between agencies in these respective groups, such as organizational size, the discriminatory culture within each agency, and the relative representation of women and minorities in supervisory roles. Although observational designs do not offer the same causal

[6] 59.29% of the sample federal agency-year observations report complying with this directive – i.e., CROA agencies (n = 300), while the remaining 40.71% (n = 206) do not comply – i.e., non−CROA agencies. Moreover, the within-agency variation is a nontrivial 52% of the between-agency variation for this indicator variable. Among 131 agencies, 93 agencies (70.99%) are fixed to one managerial choice, 29 agencies (22.14%) reveal variable managerial choice patterns across years, and 9 agencies (6.9%) only have a single-year observation due to data availability. Sensitivity checks omitting both 'switch back' and single-year agency cases yields substantively similar empirical findings for the aggregate models, with the only substantive differences occurring with respect to select OF disaggregate models (**H1: Moderate OF model [ATET]**; **H3a: Low OF model [ATET]**). See *Supplementary Appendix* for additional details ***(Sensitivity Check # 2: Omission of Cases Involving CROA/ Non−CROA 'Switching' & Single-Year Agencies; cf. Figures A−4 & A−5***).

precision as well-executed experimental designs, several steps are taken to provide sufficient confidence that the observed estimated CROA effects are not statistical artifacts.

First, hypothetical counterfactuals are extracted relating to each type of organizational arrangement through a potential outcomes modeling framework (e.g., Imbens and Rubin 2015; Morgan and Winship 2015). Differences in other characteristics that may systematically differ between this pair of agency groups are accounted for by implementing a regression adjustment to handle the impact of non-random assignment to CROAs and Non−CROAs with respect to these respective (potential) outcomes. These statistical models account for non-random treatment assignment when modeling discrimination caseloads through a vector of covariates that yield a separate expected (potential) outcome for both the treatment and control groups, thus permitting counterfactual analyses with these data.

Four control covariates are specified in these respective potential outcome equations. *Organizational Fairness* (*OF*) is a latent factor score variable measuring employees' average response of perceived fairness of their organizational environment based on the Federal Employee Viewpoint Survey (FEVS) for the corresponding year observed in our sample (2010-2014). The OF measure accounts for the latent susceptibility of agency environments for creating a climate that is not conducive to discriminatory behavior, including unreported incidences of discrimination that are not accounted for by reported discrimination incidents observed by federal agencies. This variable is simply a modified version of the multiple-item latent measure established in prior public management research (e.g., Cho 2017; Choi 2013; Choi and Rainey 2014): (1) "*I can disclose a suspected violation of any law, rule or regulation without fear of reprisal.*"; (2) "*Arbitrary action, personal favoritism and coercion for partisan political purposes are not tolerated.*"; and (3)

"*Prohibited Personnel Practices are not tolerated.*"[7] Employees' perceptions of organizational fairness are posited as being inversely associated with the prevalence of reported discriminatory behaviors within the agency. Conversely, OF should be positively related to the rates of internal resolution since the prevailing organizational culture is deemed to be fair by its employees. Both gender and minority representation in supervisory management positions should affect agency discrimination caseloads. The *Ratio of* W*omen Supervisors* (i.e., ratio of women to men supervisors) and The *Ratio of Minority Supervisors* (i.e., ratio of minority to non−minority supervisors) within each agency for a given year are incorporated as separate covariates to capture such effects. Drawing from representative bureaucracy theory, placing individuals from low-status social groups in high-status positions within the organization should not only be associated with reducing the volume of discrimination incidents, but also improve the rate of informal case resolution as the relative need for filing formal complaints declines since both the interests and values of subordinates sharing similar descriptive characteristics are better represented under these conditions (e.g., Dolan 2000; Grissom and Keiser 2011; Grissom et al. 2012; see also Ely 1994). *Organizational Size* is the natural logarithm of the total number of employees (full time and non-full time) within an agency for a given year. Larger organizations should obviously be associated with higher reported incidences of discrimination, but perhaps a higher informal resolution rate due to economies of scale with respect to handling reported incidents of employee discrimination.

[7] One survey item, "*Complaints, disputes, or grievances are resolved fairly in my work unit*," is excluded in creating the OF latent factor variable because this item no longer exists in FEVS since 2010. See *Supplementary Appendix* for additional details (***Section 3. Construction of the Latent Variable – Organizational Fairness of Administrative Environment (OF)***).

In addition, the conditional independence assumption underlying these statistical models is relaxed by allowing for potential endogenous selection into the CROA treatment/ compliance and non−CROA control/non-compliance groups by estimating a series of endogenous treatment effect regression models that account for both non-random assignment with respect to caseloads and treatment exogeneity concerns using a control function approach (e.g., Terza, Basu, and Rathouz 2008; Wooldridge 2010: Chapter 18). This modification is necessary to produce valid estimates of CROA effects on discrimination caseloads since organizations are documented as strategically influencing the process of discrimination resolution (e.g., Edelman, et al. 1999; Hirsh 2008), and in turn, the reporting process by choosing the conditions that shape their decision to comply with EEOC directive.

The potential outcomes equations evaluating **H1** (*Exposure Hypothesis*) are estimated using a generalized linear modeling approach that employs an exponential link function due to the event count nature of the dependent variable. This generalized linear modeling approach is modified for analyzing the potential outcomes evaluating **H2** (*Baseline Informal Caseload Resolution Hypothesis*), **H3a** (*Low Cost Informal Caseload Resolution Hypothesis*), and **H3b** (*High Cost Informal Caseload Resolution Hypothesis*) by adopting a Fractional Probit link function for this set of dependent variables that represent a proportion measure inclusively bounded between 0 and 1. Agency unit effects are generally inappropriate for extremely short panel data designs, especially in the presence of an incidental parameters problem that plague both the event count and proportion generalized linear models estimated in this study (e.g., Fernandez-Val and Weidner 2016; Greene 2004). The pooled model design accounts for factors predicting discrimination cases for each organizational arrangement, while clustering standard errors at the agency-level.

The endogenous treatment selection equation is estimated using a Binary Probit link function that distinguishes between CROA and Non−CROA agencies observed in the

sample.[8] Apart from the control covariates noted above, three unique regressors are introduced posited to predict the endogenous selection of CROAs. *Lagged Discrimination* is operationalized as the value of the dependent variable in the preceding year, where higher values that are compatible with the dual exposure-informal resolution strategy should be positively associated with CROA adoption. *Agency Politicization* is operationalized as the proportion of political appointees (the total number of presidential-appointed, Senate confirmed (PAS), noncareer Senior Executive Service (SES), and Schedule C employees) among supervisors within an agency (Lewis 2008). It is hypothesized that increases in *Agency Politicization* are associated with lowering the probability of observing coordinated leadership since political appointees are less tethered to 'best' practices given their relatively short tenure in office, coupled with their inclination towards greater presidential responsiveness (Pfiffner 1987). The binary indicator *Nonnested* is equal to 1 for non-nested, stand-alone agencies, and equal to 0 for those agencies nested within a larger cabinet department. This covariate accounts for the possibility that the probability of observing a coordinated leadership approach is higher for non-nested agencies since these agencies lack the 'fail-safe' protections enjoyed by nested agencies for not complying with the EEOC directive from other units within a broader agency. Disconnected leadership between EEO offices and agency heads is more disconcerting for non−nested, stand−alone agencies, which fully exposes an agency for non−compliance to this EEOC directive. Sensitivity analyses involving the omission of the agency politicization covariate from the treatment equation, and instead specifying this variable as a covariate in the (potential) outcome equations, yield substantively similar empirical findings to those presented here for the full sample

[8] See *Supplementary Appendix*, ***Section 0. Analytics of Endogenous Treatment Statistical Models within a Potential Outcomes Framework*** for a formal analytical treatment.

results, and somewhat different, albeit remain substantively meaningful estimates for select OF subsample models (**H1: High OF model [ATE]**; **H2: High OF model [ATE & ATET]**, **Low OF model [ATE & ATET]**; **H3a: Low OF model [ATE]**), with the lone exception of the substantially larger yet more imprecise ATE estimate for Low OF model evaluating the effects of CROAs on the proportion of settlement caseloads (**H3a**).[9]

## Evaluating the Dual Exposure–Informal Resolution Strategy

The *Supplementary Appendix* (See **Table A–3**) contains the full set of endogenous treatment model estimates. An increase in the latent organizational fairness (OF) of an agency's environment significantly reduces the potential outcomes relating to the volume of reported discrimination for both compliant (−0.747) and non−compliant (−0.829) agencies. The ratio of women to men supervisory personnel has a positive and statistically significant association with discrimination reporting for only CROA agencies (0.330). The size of an agency's workforce exerts a positive and statistically discernible positive relationship in the exposure of reported discrimination, as evinced by the total volume of reported incidents. The CROA treatment selection equation covariates reveal that greater organizational fairness is positively associated with CROA adoption, while the preceding year's discrimination caseload is positively associated with CROA adoption in all models, save for the one evaluating the proportion of settlement cases employed to evaluate **H3b**. In turn, this finding suggests that CROA adoption is conditioned by the extent to which agencies are successful in engaging in a dual exposure-informal case resolution strategy. Finally, as hypothesized, non-nested agency structures exhibit a substantially higher likelihood of

[9] For additional details, see *Supplementary Appendix*, ***Sensitivity Check # 1: Model Specification Choice Involving Agency Politicization Covariate; cf. Figures A–2 & A–3***).

adopting coordinated leadership compared to those embedded within a hierarchy of interconnected administrative units.

**Figure 2** displays the Average Treatment Effect (ATE: $E[Y_{i,t\ CROA} - Y_{i,t\ Non-CROA} \mid X_{i,t}]$) and the Average Treatment Effect on the Treated (ATET: $E[Y_{i,t\ CROA} - Y_{i,t\ Non-CROA} \mid X_{i,t}$, CROA). The ATE estimates capture the average difference in the outcome variable between the presence of coordinated leadership (i.e., CROA agencies) versus disconnected leadership (i.e., non−CROA agencies) for a given year. The ATE can be interpreted as the average effect of CROA agencies for both reported discrimination cases within the agency and caseload management, respectively. The ATET evaluates the average impact of CROA agencies exclusively within this treatment group to compare the counterfactual if those compliant agencies hypothetically had chosen instead to not adopt a CROA.

**Figure 2A** reveals that agencies adopting CROAs exhibit an average of nearly 173 total reported cases per annum ($p = 0.001$, one-tailed test[10]) higher than compared to agencies where the agency EEO office does not report to the agency head. This effect constitutes an average expected difference in the total number of reported discrimination incidences by a factor of 3.43 (258.37 / 75.25 = 3.43). The estimated ATET effect is approximately 182 cases per annum − a nearly four and one-half fold increase (4.37 = 236.59 / 54.19) of reported discrimination cases for CROA compliant agencies compared to if this subset of agencies had chosen not to comply with the EEOC directive. These findings offer strong support for the **Exposure Hypothesis** (**H1**). Further, these treatment effect sizes are especially compelling since they are independent of both agency size and the

[10] The theory's empirical implications generate directional predictions, and hence, one-tailed probability tests are reported to complement the 95% confidence intervals displayed graphically.

latent propensity for discriminatory behavior occurring within agencies related to organizational fairness that are separately accounted for in these statistical models.

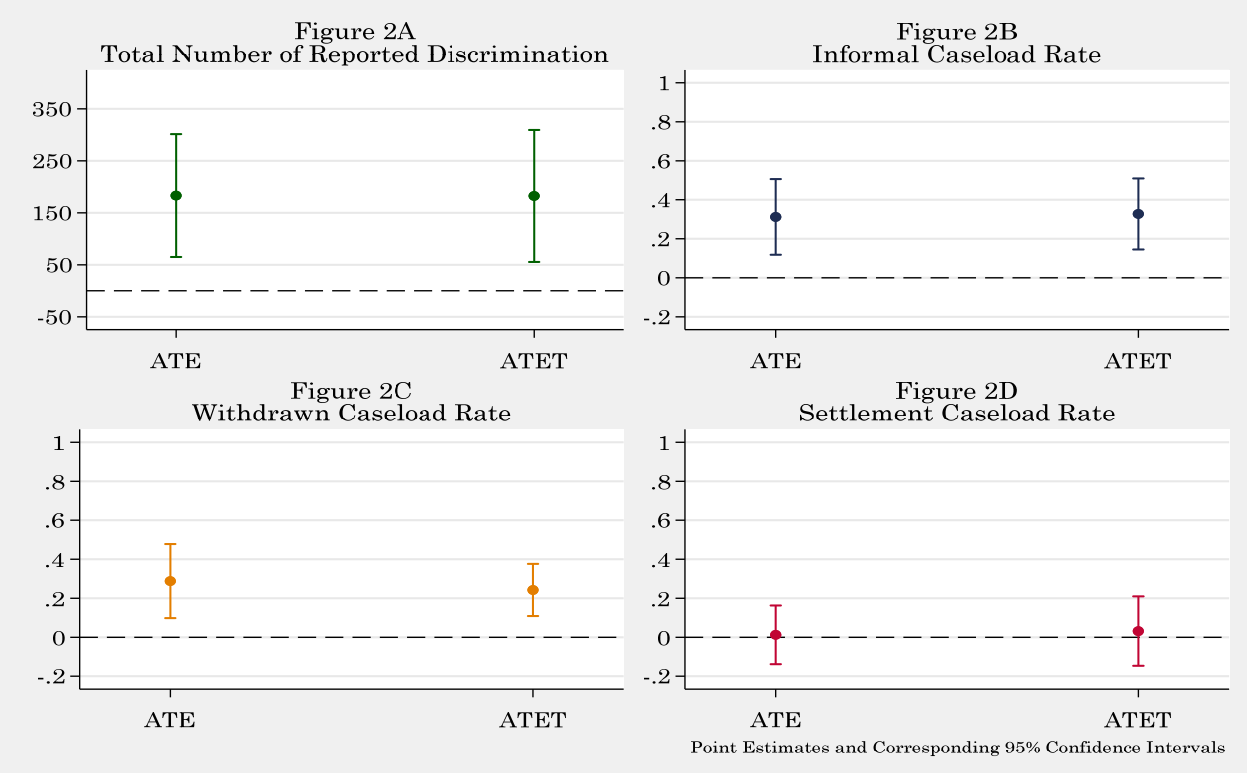
Next, discrimination caseload management is analyzed by evaluating whether agencies with coordinated leadership are more effective at resolving these disputes in the pre-formal complaint state of the process compared to those employing a disconnected leadership approach (**H2: Baseline Informal Caseload Resolution Hypothesis**). The second pair of plotted estimates appearing in **Figure 2B** indicate that the average difference for the informal caseload rate between CROA and non−CROA agency-year observations (ATE) is 31.20%. The ratio of the average CROA group's informal caseload rate to the average non−CROA group counterparts is 2.34 (54.58% / 23.38%). Similarly, the ATET is 32.74% (and 4.06 times) higher for those CROA agencies compared to if instead this subset of agencies had chosen not to comply with the EEOC directive. This is because 43.46% of reported discrimination cases are handled without a formal complaint being filed for CROA compliant agencies, compared to slightly more than a tenth of the caseload (10.71%) if those CROA agencies had chosen to eschew a coordinated leadership approach. These findings indicate that federal agencies tangibly benefit from CROAs with respect to managing discrimination caseloads by reducing both administrative and reputational costs.

Disaggregating informal caseload rates into withdrawn case versus settlement case components enables testing of **H3a (Low Cost Informal Caseload Resolution Hypothesis)** and **H3b (High Cost Informal Caseload Resolution Hypothesis)** positing that the agency benefits from coordinated leadership on withdrawn caseloads, but do not likewise when settlement outcomes are required to avoid the filing of a formal complaint. The estimates in **Figure 2C** demonstrate that CROAs substantially increase the percentage of reported discrimination cases that are withdrawn following either traditional counseling or alternative dispute resolution (ADR). The average difference in the

withdrawn case rate for CROA agencies to non−CROA agencies, ATE, is nearly one fifth (28.81%) of an agency's typical annual reported discrimination caseload. This constitutes 2.53 times greater relative caseload consisting of withdrawn cases for coordinated leadership agencies (47.68%) compared to those where the EEO office and agency head are disconnected (18.87%). The ATET is 24.24% higher for CROA agencies compared to if they had chosen not to comply with the EEOC directive, thus improving the percentage of withdrawn cases by a factor of 3.28 for this subset of agencies (34.88%) compared to if they had refused to follow EEOC policies (10.63%). This pattern contrasts with the impact of

**FIGURE 2**

**Estimating the Differential Effects of CROAs on U.S. Federal Agency Discrimination**




CROAs on informal discrimination caseloads resolved through costly settlements displayed in **Figure 2D** where the estimated ATE in the settlement case rates is a trivial 1.25%, while the ATET estimate also reflects a statistically negligible difference (3.16%). This

evidence offers unambiguous support for both **H3a** and **H3b** since CROA agencies complying with this EEOC directive are more effective at increasing withdrawn claim outcomes than non−CROA agencies; yet these organizational benefits are not realized for settlement outcomes in lieu of a formal complaint being filed.

## Does The Dual Exposure−Informal Resolution Strategy Vary Across Administrative Environments?

An analysis is undertaken to evaluate whether these strategies are equally effective across public agencies with varying degrees of latent organizational fairness (henceforth, *OF*): *High*, *Moderate*, and *Low*. Agencies that have the most benefit from CROAs are those public agencies with low OFs that are prone to the most relative suffering from latent discrimination problems. Conversely, federal agencies exhibiting high OF levels may accrue additional benefits from CROAs since the organizational culture is most conducive for employees to report incidents, and also willing to resolve them without filing a formal complaint. To analyze these distinctions, the sample is decomposed into three subsamples; whereby, High OF agencies comprise upper tercile OF values ($OF \geq 0.243207$); Moderate OF agencies comprise intertercile values ($-0.0520733 \leq OF < 0.243207$), while Low OF agencies comprise lower tercile values ($OF < -0.0520733$).

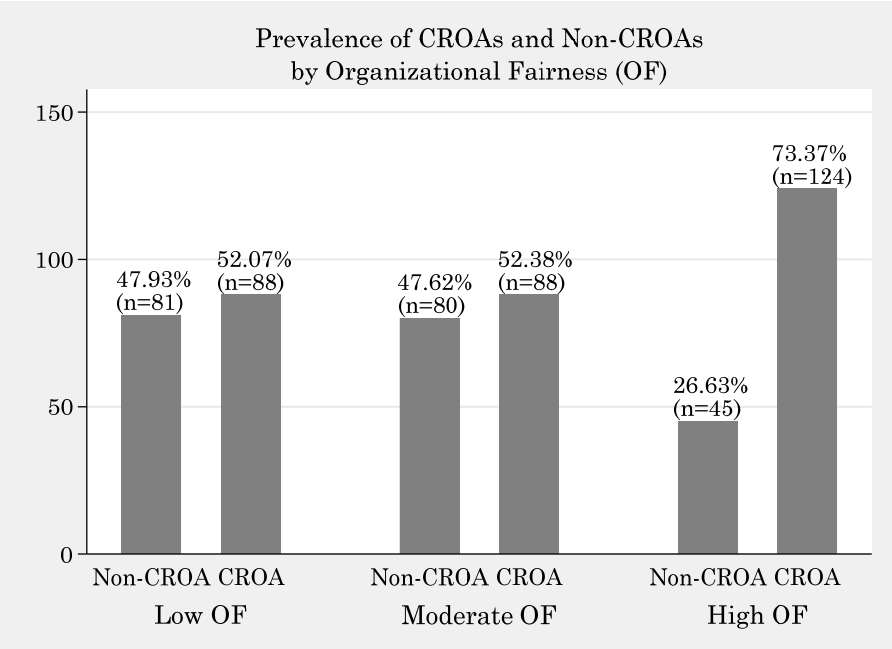
The results in **Figure 3** reveals that CROAs are much more common for High OFs (n = 124, 73.37%) than non−CROAs (n = 45, 26.63%). Interestingly, Low OFs adopt this organizational approach with similar absolute and relative frequency as Moderate OF counterparts. CROAs represent a bare majority for both Moderate and Low OFs (n = 88, 52.38%; n = 88, 52.07%) relative to non−CROAs (n = 80, 47.62%; n = 81, 47.93%).

For purposes of brevity, the discussion focuses on the estimated ATE and ATETs reported from each model in **Figure 4** (a full tabular representation of these statistical

estimates appears in **Appendix Tables A4** & **A5**). A cautionary note is in order. Because each set of model estimates is based on merely a third of the full sample, they must be interpreted with some caution since they often exhibit much less precision due to lower statistical power relative to the full sample estimates. Hence, these sub-treatment model estimates may be too conservative with respect to rejecting differences in discrimination

**FIGURE 3**

**Adoption of CROAs versus Non−CROAs in U.S. Federal Agencies**
***(Alternative Organizational Fairness of Administrative Environments)***



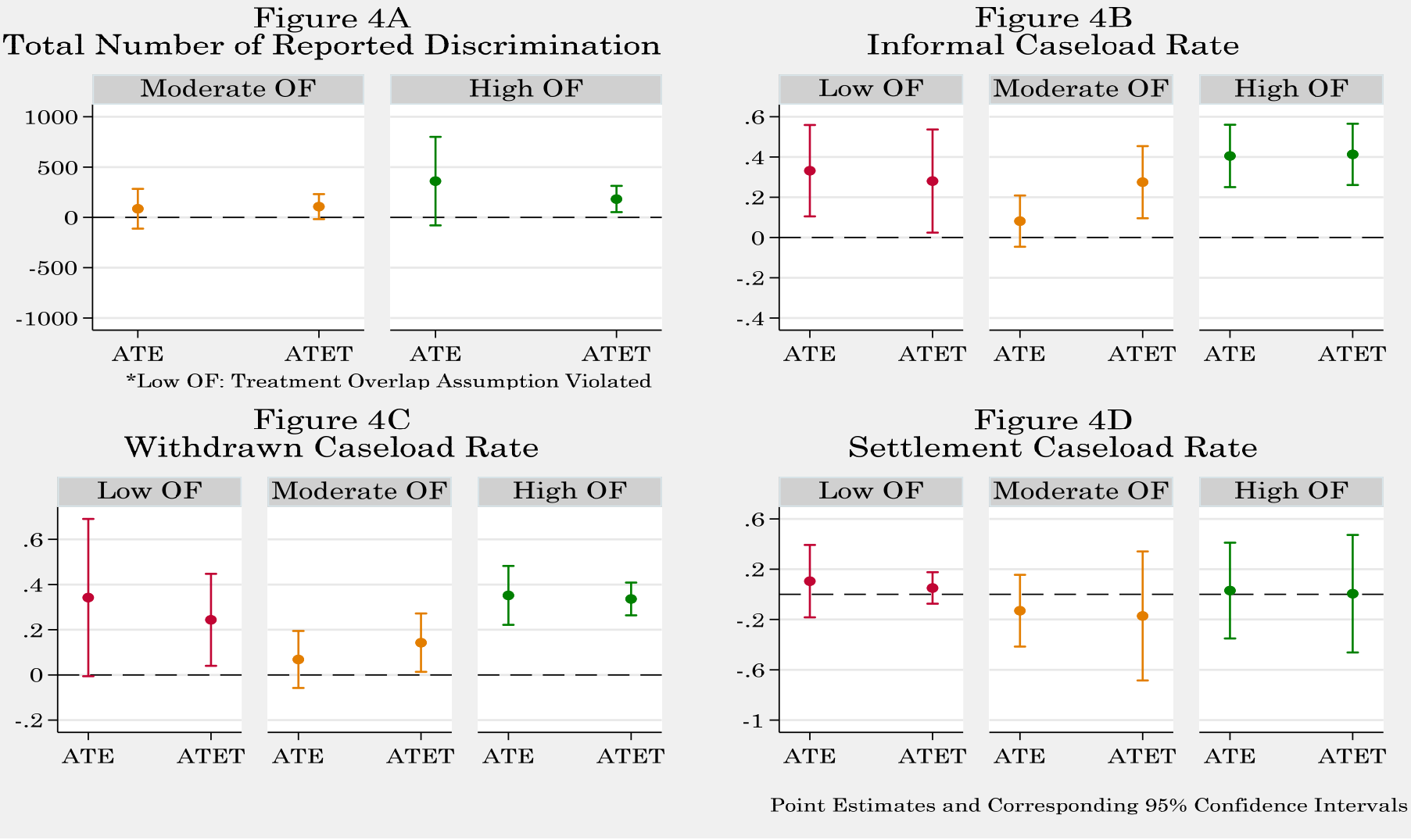

caseloads between CROA agencies and non−CROA agencies. **Figure 4A** shows the ATE and ATET estimates for total reported discrimination caseloads (**H1**) under each of these three discriminatory administrative environments. The respective estimated ATE and ATET effects reveal that CROA agencies only exhibit a greater level of discrimination reporting for High OFs (360.39 [p = 0.054, one-tailed test]; 181.91, p = 0.003, one-tailed test) – though the Low OF model is not reported since it did not yield credible estimates in this instance due to violation of the overlapping assumption. **Figure 4B** displays both the ATE and ATET estimated effects for CROAs for informal case load rates (**H2**). The average

difference effect (ATE) between CROA versus Non-CROA agencies with respect to informal caseload rates ranges from 40.52% ($p < 0.001$) for High OF agencies to 8.13% ($p = 0.106$, one-tailed test) for Moderate OF agencies, and 33.19% ($p = 0.002$, one-tailed test) for Low OF agencies. The ATET effects reveal a similar pattern by showing that CROA agencies with High OFs improve their informal discrimination caseload rate by 41.31% ($p < 0.001$) more than compared to if they had instead chosen to keep the agency EEO office from reporting to the agency head. Similar, albeit less potent ATET effects of CROA agencies are detected for Moderate OFs, with a substantial 27.50% ($p = 0.002$, one-tailed test) difference in the informal caseload rate compared to if this subset of agencies had not adhered to a CROA approach. The ATET effects observed for Low OF agencies constitute a 28.04% ($p = 0.016$) differential improvement in the informal caseload rate between CROA agencies and the counterfactual if these agencies had instead chosen not to adopt a CROA.

**Figures 4C** and 4**D** display the ATE and ATET estimates for withdrawn and settlement discrimination caseloads. The estimates for withdrawn cases revealed in **Figure 4C** are not only consistent with **H3a** across each of these organizational environments, and remain quite similar in substantive terms to those for the informal caseload rate for showing the importance of CROAs for improving withdrawn caseloads following the completion of either traditional counseling or ADR. **Figure 4D** reveals that agencies adopting such a coordinated leadership approach to addressing discrimination problems do not issue pre-formal complaint settlements at a higher rate than non-CROA agencies under alternative administrative environments with respect to organizational fairness. This evidence in support of **H3b** echoes the aggregate evidence presented in **Figure 2D**. In tandem, these latter set of findings indicate that those agencies that have the most to benefit from CROAs for pursuing a dual exposure-informal resolution strategy addressing agency discrimination problems (Low OFs), as well as those agencies who are in a strong

**FIGURE 4**

**Estimating the Differential Effects of CROAs on U.S. Federal Agency Discrimination**
**(*Alternative Organizational Fairness of Administrative Environments*)**



position to make CROAs work effectively in practice in pursuing these aims (High OFs). This subset of federal agencies accrues a disproportionate share of CROA benefits that accrue when agencies prioritize a leadership commitment for a coordinated organizational approach in addressing workplace discrimination.

## Discussion

Tackling employee discrimination within the U.S. federal government is inherently challenging since longstanding organizational cultures and routines often undermine these efforts. Motivated by this problem, the EEOC issued a directive that requires every U.S. federal agency's EEO office to be under the direct supervision of agency heads [29 C.F.R. § 1614.102(b)(4)]. Although coordinated reporting organizational arrangements (CROAs) reveal an agency's leadership commitment to this practice, a subset of agencies chose either not to comply with the directive at all, or only in an episodic manner. This study analyzes the effectiveness of CROAs regarding how agencies address discrimination problems. Agencies face clear incentives to simultaneously increase the exposure of discrimination problems through reported incidents, while seeking to redress these incidents through informal resolution that limits organizational costs relating to administrative and reputational costs.

The evidence offered in this study provides compelling support that this dual exposure-information resolution strategy is more effective when an agency's EEO office and chief executive display organizational commitment by adopting a CROA compared to when it eschews such a formal mechanism. Closer inspection of these data indicates that the disproportionate share of these organizational benefits accrued from CROAs are enjoyed by

those federal agencies which are best positioned to address discrimination problems, as those agencies are most prone to these workplace pathologies.

Unfortunately, this study cannot address certain issues that are beyond the scope of the present study, including individual-level analysis of discrimination cases involving data that are not publicly available for purposes of legal confidentiality. This study therefore cannot ascertain the precise manner by which individual EEO agency office program managers and counselors contribute to this dual exposure–informal resolution strategy for managing discrimination as an organizational-level problem. Further, the present study is incapable of acquiring insights into the informal nature of the relationship between these actors, and its consequences for managing discrimination at the organizational level. Although discrimination is analyzed as an organizational-level problem managed by U.S. federal agencies, one can neither infer the nature of procedural nor distributive justice relating to the individual-level outcomes associated with the agency discrimination process.

Despite these scope conditions, this study underscores the broader importance associated with organizational distance theories, and more specifically, structural proximity solutions to administrative problems such as agency management of workplace discrimination. That is, organizational arrangements that formally align units and actors for coordinated activities offer collective benefits such as effective communication, enhanced performance outcomes, and a reduction of employee withdrawal (Antonakis and Atwater 2002: 681, 685; Napier and Ferris 1993: 334, 343). The benefits of structural proximity between agency EEO offices and agency heads are greatest for those organizations that either are conducive to such leadership or most in need of it, while those falling somewhere in-between this divide enjoy the least performance benefits from coordinated leadership.

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*SUPPLEMENTARY APPENDIX DOCUMENT*

# Does Coordinated Administrative Leadership Improve U.S. Federal Agency Management of Discrimination Problems?

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## 0. Analytics of Endogenous Treatment Statistical Models within a Potential Outcomes Framework

Testing the theory's empirical predictions requires estimating causal effects from statistical models using a potential outcomes framework (see Imbens and Rubin 2015; Morgan and Winship 2015). This framework entails not only the handling of estimating treatment effects via regression adjustment for control covariates to ensure comparability between potential outcomes under both CROAs and their absence, but also endogeneity between the choice of CROA or lack thereof in relation to reported discrimination caseloads. The precise regression modeling framework adopted in this study is an endogenous treatment effects generalized linear model approach that accounts for treatment selection bias using control function methods (Terza, Basu, and Rathouz 2008; Wooldridge 2010: Chapter 18). This model can be characterized by the following set of equations:

$$Y_{i,t\ Non-CROA} = E\left(Y_{i,t\ Non-CROA}\left|\boldsymbol{X}_{i,t}\right.\right) + \varepsilon_{i,t\ Non-CROA} \qquad (SA-1a)$$

$$Y_{i,t\ CROA} = E\left(Y_{i,t\ CROA}\left|\boldsymbol{X}_{i,t}\right.\right) + \varepsilon_{i,t\ CROA} \qquad (SA-1b)$$

$$D_{i,t} = E\left(D_{i,t}\left|\boldsymbol{Z}_{i,t}\right.\right) + v_{i,t} \qquad (SA-2)$$

$$Y_{i,t} = D_{i,t}Y_{i,t\ CROA} + \left(1-D_{i,t}\right)Y_{i,t\ Non-CROA} \qquad (SA-3)$$

$$E\left(\varepsilon_{i,t\,j}\left|\boldsymbol{X}_{i,t\,j}\,Z_{i,t\,j}\right.\right) = E\left(\varepsilon_{i,t\,j}\left|\boldsymbol{Z}_{i,t\,j}\right.\right) = E\left(\varepsilon_{i,t\,j}\left|\boldsymbol{X}_{i,t\,j}\right.\right) = 0 \quad \text{for } j \in \{0,1\} \qquad (SA-4)$$

$$E\left(\varepsilon_{i,t\,j}\left|D_{i,t\,j}\right.\right) \neq 0 \quad \text{for } j \in \{0,1\}, \qquad (SA-5)$$

where Equations **(SA−1a)** and **(SA−1b)** represent the potential outcome regression equations for the CROA agencies and Non−CROA agencies, respectively; and Equation **(SA−2)** represents the treatment equation that accounts for endogenous choice by federal agencies whether or not to adopt a CROA, where $D_{i,t} = 1$ for CROA agencies and $D_{i,t} = 0$ for Non−CROA agencies. Equation **(SA−3)** weights the CROA agencies and Non−CROA agencies in the sample, while Equation **(SA−4)** assumes zero covariance between the

disturbance terms and respective potential outcome equation covariates ($\boldsymbol{X}_{i,t}$) and unique treatment equation covariates ($\boldsymbol{Z}_{i,t}$), while Equation **(SA−5)** relaxes the conditional independence assumption between the CROA treatment binary indicator ($D_{i,t}$) and discrimination caseload outcome ($Y_{i,t}$) measures.

The resulting control function model dervied from Equations **(SA−1a)** through **(SA−5)** yields estimates of both the ATE and ATET effects within a potential outcomes framework using Generalized Methods of Moments (GMM). Arriving at estimates employed to evaluate **H1** (*total volume of reported discrimination incidents*) requires an exponential link function to account **for** the event count nature of the dependent variable:

$$E\left(Y_{i,t\,j}\,\middle|\,\boldsymbol{X}'_{i,t}\,,\,v_i,\,D_i\right)=\exp\left(\boldsymbol{X}'_{i,t}\hat{\beta}_{1j}+\hat{v}\hat{\beta}_{2j}\right). \qquad (SA-6)$$

Hence, the ATE can be obtained by deriving the ATE from the statistical model by substituting the pair of potential outcomes denoted by Equations **(SA−1a)** and **(SA−1b)** into relevant estimating equation denoted by Equation **(SA−6)** as follows:

$$\begin{aligned} ATE &= \omega E\left(Y_{i,t\,j}^{CROA}\,\middle|\,\boldsymbol{X}'_{i,t}\,,\,\nu_{i,t},\,D=1\right)+\left(1-\omega\right)E\left(Y_{i,t\,j}^{CROA}\,\middle|\,\boldsymbol{X}'_{i,t}\,,\,\nu_{i,t},\,D=0\right) \\ &\quad -\left\{\omega E\left(Y_{i,t\,j}^{Non-CROA}\,\middle|\,\boldsymbol{X}'_{i,t}\,,\,\nu_{i,t},\,D=1\right)+\left(1-\omega\right)E\left(Y_{i,t\,j}^{Non-CROA}\,\middle|\,\boldsymbol{X}'_{i,t}\,,\,\nu_{i,t},\,D=0\right)\right\} \qquad (SA-6a) \\ &= w\left[\exp\left(\boldsymbol{X}'_{i,t}\hat{\beta}_{1j}+\hat{\nu}_{i,t}\hat{\beta}_{2j},D=1\right)\right]^{CROA}+\left(1-w\right)\left[\exp\left(\boldsymbol{X}'_{i,t}\hat{\beta}_{1j}+\hat{\nu}_{i,t}\hat{\beta}_{2j},D=0\right)\right]^{CROA} \\ &\quad -\left\{w\left[\exp\left(\boldsymbol{X}'_{i,t}\hat{\beta}_{1j}+\hat{\nu}_{i,t}\hat{\beta}_{2j},D=1\right)\right]^{Non-CROA}+\left(1-w\right)\left[\exp\left(\boldsymbol{X}'_{i,t}\hat{\beta}_{1j}+\hat{\nu}_{i,t}\hat{\beta}_{2j},D=0\right)\right]^{Non-CROA}\right\}, \end{aligned}$$

where Equation **(SA−6a)** represents the weighted average (denoted by $\omega$) of the expected difference between potential outcomes for total number of reported discrimination cases under each organizational reporting regime (CROA versus Non−CROA), conditional on the control covariates ($\mathbf{X}_{i,t}$) plus correction for endogenous treatment ($\nu_{i,t}$). The corresponding ATET captures the causal impact of CROAs on the level of reported discrimination

incidents relative to the counterfactual that these EEOC compliant agencies had instead adopted a disconnected leadership approach. The ATET estimate is analytically derived in an analogous manner:

$$ATET = E\left(Y_{i,t\,j}^{CROA} \,\middle|\, \boldsymbol{X}_{i,t}', \nu_{i,t}, D=1\right) - E\left(Y_{i,t\,j}^{Non-CROA} \,\middle|\, \boldsymbol{X}_{i,t}', \nu_{i,t}, D=1\right) \qquad (SA-6b)$$
$$= \left[\exp\left(\boldsymbol{X}_{i,t}'\hat{\beta}_{1j} + \hat{v}_{i,t}\hat{\beta}_{2j}, D=1\right)\right]^{CROA} - \left[\exp\left(\boldsymbol{X}_{i,t}'\hat{\beta}_{1j} + \hat{v}_{i,t}\hat{\beta}_{2j}, D=1\right)\right]^{Non-CROA}.$$

Evaluation of **H2**, **H3a**, and **H3b** employs a Fractional Probit link function to account for the proportion nature of this set of dependent variables:

$$E\left(Y_{i,t\,j} \,\middle|\, \boldsymbol{X}_{i,t}', \nu_{i,t}, D_i\right) = Y_{i,t}\,\Phi\left[\boldsymbol{X}_{i,t}'\hat{\beta}_{1j} + \hat{v}_{i,t}\hat{\beta}_{2j}\right] \qquad (SA-7)$$
$$+ \left(1-Y_{i,t}\right)\,\Phi\left[\boldsymbol{X}_{i,t}'\hat{\beta}_{1j} + \hat{v}_{i,t}\hat{\beta}_{2j}\right].$$

To simplify the subsequent notation for estimating the quantities of interest from the Fractional Probit link function, $FP = Y_{i,t}\Phi + \left(1-Y_{i,t}\right)\Phi$. Therefore, the ATE can be derived from substituting the pair of potential outcome equations denoted by Equations **(SA−1a)** and **(SA−1b)** into the relevant estimating equation denoted by Equation **(SA−7)**:

$$ATE = \omega E\left(Y_{i,t\,j}^{CROA} \,\middle|\, \boldsymbol{X}_{i,t}', \nu_{i,t}, D=1\right) + \left(1-\omega\right)E\left(Y_{i,t\,j}^{CROA} \,\middle|\, \boldsymbol{X}_{i,t}', \nu_{i,t}, D=0\right)$$
$$-\left\{\omega E\left(Y_{i,t\,j}^{Non-CROA} \,\middle|\, \boldsymbol{X}_{i,t}', \nu_{i,t}, D=1\right) + \left(1-\omega\right)E\left(Y_{i,t\,j}^{Non-CROA} \,\middle|\, \boldsymbol{X}_{i,t}', \nu_{i,t}, D=0\right)\right\} \qquad (SA-7a)$$
$$= w\left[FP\left(\boldsymbol{X}_{i,t}'\hat{\beta}_{1j} + \hat{v}_{i,t}\hat{\beta}_{2j}, D=1\right)\right]^{CROA} + \left(1-w\right)\left[FP\left(\boldsymbol{X}_{i,t}'\hat{\beta}_{1j} + \hat{v}_{i,t}\hat{\beta}_{2j}, D=0\right)\right]^{CROA}$$
$$-\left\{w\left[FP\left(\boldsymbol{X}_{i,t}'\hat{\beta}_{1j} + \hat{v}_{i,t}\hat{\beta}_{2j}, D=1\right)\right]^{Non-CROA} + \left(1-w\right)\left[FP\left(\boldsymbol{X}_{i,t}'\hat{\beta}_{1j} + \hat{v}_{i,t}\hat{\beta}_{2j}, D=0\right)\right]^{Non-CROA}\right\}.$$

The corresponding ATET is solved in an analogous manner using the following formula:

$$ATET = E\left(Y_{i,t\,j}^{CROA} \,\middle|\, \boldsymbol{X}_{i,t}', \nu_{i,t}, D=1\right) - E\left(Y_{i,t\,j}^{Non-CROA} \,\middle|\, \boldsymbol{X}_{i,t}', \nu_{i,t}, D=1\right) \qquad (SA-7b)$$
$$= \left[FP\left(\boldsymbol{X}_{i,t}'\hat{\beta}_{1j} + \hat{v}_{i,t}\hat{\beta}_{2j}, D=1\right)\right]^{CROA} - \left[FP\left(\boldsymbol{X}_{i,t}'\hat{\beta}_{1j} + \hat{v}_{i,t}\hat{\beta}_{2j}, D=1\right)\right]^{Non-CROA}.$$

## 1. Descriptive Statistics, Data Sources, Listing of Non-Nested & Nested Agencies

**TABLE A–1: Descriptive Statistics and Data Source for Variables in Analysis**

| Variables | Mean | SD | Min | Max | Source |
|---|---|---|---|---|---|
| The Total Number of Reported Discrimination[1] | 183.40 | 481.45 | 1 | 3940 | EEOC Annual Report 2010-2014 |
| Informal Caseload Rate[2] | 0.42 | 0.17 | 0 | 1 | EEOC Annual Report 2010-2014 |
| Withdrawn Caseload Rate[3] | 0.33 | 0.16 | 0 | 1 | EEOC Annual Report 2010-2014 |
| Settleement Caseload Rate[4] | 0.09 | 0.11 | 0 | 1 | EEOC Annual Report 2010-2014 |
| Direct Reporting[5] | 0.59 | 0.49 | 0 | 1 | EEOC Annual Report 2010-2014 |
| Perceived Organizational Fairness[6] | 0.11 | 0.34 | −0.87 | 1.14 | FEVS 2010-2104 |
| The Ratio of Women Supervisors[7] | 0.70 | 0.39 | 0.14 | 1.95 | OPM FedScope 2010-2014 September |
| The Ratio of Minority Supervisors[8] | 0.52 | 0.91 | 0.04 | 8.60 | OPM FedScope 2010-2014 September |
| ln(Organizational Size)[9] | 8.59 | 1.54 | 4.95 | 12.65 | OPM FedScope 2010-2014 September |
| Agency Politicization[10] | 0.03 | 0.05 | 0 | 0.47 | OPM FedScrope 2010-2014 & Dahlstrom, Fazekas, and Lewis Dataset |
| Nonnested Agency[11] | 0.28 | 0.45 | 0 | 1 | USA.gov website |
| Lagged Total Number of Reported Discrimination[12] | 184.16 | 480.03 | 0 | 3932 | EEOC Annual Report 2009-2013 |
| Lagged Informal Caseload Rate[13] | 0.43 | 0.16 | 0 | 1 | EEOC Annual Report 2009-2013 |
| Lagged Withdrawn Caseload Rate[14] | 0.33 | 0.16 | 0 | 1 | EEOC Annual Report 2009-2013 |
| Lagged Setttlement Caseload Rate[15] | 0.09 | 0.10 | 0 | 0.67 | EEOC Annual Report 2009-2013 |

[1] An event count outcome measure of the total number of reported incidences of discrimination in an agency for a given year. Collected from ***EEOC Annual Report on the Federal Work Force FY2010-FY2014 Table B-1***. *Retrieved November 28, 2019.* https://www.eeoc.gov/federal-sector/reports.

[2] The ratio of informal resolution outcomes (settlement + withdrawal) to the total number of reported discriminations in an agency for a given year. Collected from ***EEOC Annual Report on the Federal Work Force FY2010-FY2014 Table B-3***. *Retrieved November 28, 2019.* https://www.eeoc.gov/federal-sector/reports.

[3] The ratio of withdrawn cases to the total number of reported discriminations in an agency for a given year. Collected from ***EEOC Annual Report on the Federal Work Force FY2010-2014 Table B-3***. *Retrieved November 28, 2019.* https://www.eeoc.gov/federal-sector/reports.

[4] The ratio of settlement cases to the total number of reported discriminations in an agency for a given year. Collected from ***EEOC Annual Report on the Federal Work Force FY2010-2014 Table B-3***. *Retrieved November 28, 2019.* https://www.eeoc.gov/federal-sector/reports.

[5] A binary indicator that equals to 1 with a CROA agency and equals to 0 with a non-CROA agency in a given year. Collected from ***EEOC Annual Report on the Federal Work Force FY2010-FY2014 Appendix III***. Federal Agencies' Program Status. *Retrieved November 28, 2019.* https://www.eeoc.gov/federal-sector/reports.

[6] A latent factor score variable measuring employees' average response of perceived organizational fairness within the agency based on the ***Federal Employee Viewpoint Survey (FEVS) 2010-2014***.

[7] A measure of the ratio of women supervisors to men supervisors in an agency for a given year. Collected from ***OPM FedScope Employment Cube 2010-2014 September***. *Retrieved July 6, 2020.* https://www.fedscope.opm.gov/employment.asp.

[8] A measure of the ratio of minority supervisors to non-minority supervisors in an agency for a given year. Collected from ***OPM FedScope Diversity Cube 2010-2014 September***. *Retrieved July 6, 2020.* https://www.fedscope.opm.gov/diversity.asp.

[9] The natural logarithm of the total number of employees in an agency for a given year. Collected from ***OPM FedScope Diversity Cube 2010-2014 September***. *Retrieved July 6, 2020.* https://www.fedscope.opm.gov/diversity.asp.

[10] A measure of agency staffing politicization operationalized as the proportion of political appointees (the total number of PAS, noncareer SES, and schedule C employees) among supervisors within the agency. We thank David Lewis for generously providing his dataset for politicization data. Politicization data for agencies that are not covered in Dahlstrom, Fazekas, and Lewis Dataset are collected from ***OPM FedScope Diversity Cube 2010-2014 September*** (*Retrieved July 6, 2020.* https://www.fedscope.opm.gov/diversity.asp). Since FedScope suppresses data for small cells where employment counts are less than 4, we created the lower bound of politicization measure and the upper bound of politicization measure, and employed the lower bound of politicization measure. The correlation coefficient between the lower bound of politicization measure and the upper bound of politicization measure is 0.999.

[11] A binary indicator that equals to 1 for non-nested, stand-alone agencies, and equals to 0. Collected from ***USA.gov website, Branches of the U.S. Government***. *Retrieved July 6, 2020.* https://www.usa.gov/branches-of-government.

[12] An event count measure of the one-year lag of total number of reported incidences of discrimination in an agency for a given year. Collected from ***EEOC Annual Report on the Federal Work Force FY2009-FY2013 Table B-1***. *Retrieved October 06, 2021.* https://www.eeoc.gov/federal-sector/reports.

[13] One-year lag of the ratio of informal resolution outcomes (settlement + withdrawal) to the total number of reported discriminations in an agency for a given year. Collected from ***EEOC Annual Report on the Federal Work Force FY2009-FY2013 Table B-3***. *Retrieved October 06, 2021.* https://www.eeoc.gov/federal-sector/reports.

[14] One-year lag of the ratio of withdrawn cases to the total number of reported discriminations in an agency for a given year. Collected from ***EEOC Annual Report on the Federal Work Force FY2009-2013 Table B-3***. *Retrieved October 06, 2021.* https://www.eeoc.gov/federal-sector/reports.

[15] One-year lag of the ratio of settlement cases to the total number of reported discriminations in an agency for a given year. Collected from ***EEOC Annual Report on the Federal Work Force FY2009-2013 Table B-3***. *Retrieved October 06, 2021.* https://www.eeoc.gov/federal-sector/reports.

## TABLE A–2:

### Listing of U.S. Federal Agencies: Non–Nested versus Nested Structures (131 agencies)

| *Non-Nested, Stand-Alone Agencies* | *Nested Agencies* |
|---|---|
| Agency for International Development | Defense Commissary Agency |
| Broadcasting Board of Governors (U.S. Agency for Global Media) | Defense Contract Audit Agency |
| Commodity Futures Trading Commission | Defense Contract Management Agency |
| Consumer Product Safety Commission | Defense Finance and Accounting Service |
| Corporation for National and Community Service | Defense Human Resources Activity |
| Court Services and Offender Supervision Agency for the DC | Defense Information Systems Agency |
| Department of Education | Defense Logistics Agency |
| Department of Energy | Defense Missile Defense Agency |
| Department of Housing and Urban Development | Defense Office of the Inspector General |
| Department of State | Defense Threat Reduction Agency |
| Environmental Protection Agency | Defense TRICATRE Management Activity (Defense Health Agency) |
| Equal Employment Opportunity Commission | AG-Agricultural Marketing Service |
| Export-Import Bank of the US | AG-Agricultural Research Service |
| Federal Communications Commission | AG-Animal&Plant Health Inspection Service |
| Federal Election Commission | AG-Farm Service Agency |
| Federal Energy Regulatory Commission | AG-Food and Nutrition Service |
| Federal Housing Finance Agency | AG-Food Safety and Inspection Service |
| Federal Labor Relations Authority | AG-Foreign Agricultural Service |
| Federal Trade Commission | AG-Forest Service |
| General Services Administration | AG-National Agricultural Statistics Service |
| International Trade Commission | AG-Natural Resources Conservation Service |
| Merit Systems Protection Board | AG-Office Of Inspector General |
| National Aeronautics and Space Administration | AG-Office of the Chief Financial Officer |
| National Archives and Records Administration | AG-Risk Management Agency |
| National Credit Union Administration | Commerce-Bureau of Census |
| National Endowment for the Arts | Commerce-International Trade Administration |
| National Gallery of Art | Commerce-National Institute of STDs & Technology |
| National Labor Relations Board | Commerce-National Oceanic & Atmospheric Admin |
| National Science Foundation | Commerce-U.S. Patent and Trademark Office |
| National Transportation Safety Board | Department of Defense Education Activity |
| Nuclear Regulatory Commission | HHS-Administration for Children and Families |
| Office of Personnel Management | HHS-Ctrs for Disease Control & Prevention |
| Pension Benefit Guaranty Corporation | HHS-Centers for Medicare & Medicaid Services |
| Railroad Retirement Board | HHS-Food and Drug Administration |
| Securities and Exchange Commission | HHS-Health Resources & Services Admin |
| Selective Service System | HHS-Indian Health Service |
| Small Business Administration | HHS-National Institutes of Health |
| Social Security Administration | HHS-Office of the Secretary |
| | HHS-Substance Abuse & Mental Health Services Admin. |
| | DHS-Federal Emergency Management Agency |
| | DHS-Federal Law Enforcement Training Center |
| | DHS-Transportation Security Administration |
| | DHS-U.S. Citizenship & Immigration Services |
| | DHS-U.S. Coast Guard |
| | DHS-U.S. Customs and Border Protection |
| | DHS-U.S. Immigration & Customs Enforcement |

| | |
|---|---|
| | DHS-U.S. Secret Service |
| | Justice-Alcohol, Tobacco, Firearms & Explosives |
| | Justice-Bureau of Prisons |
| | Justice-Drug Enforcement Administration |
| | Justice-Executive Office for Immigration Review |
| | Justice-Executive Office for U.S. Attorneys |
| | Justice-Federal Bureau of Investigation |
| | Justice-Office of Justice Programs |
| | Justice-Offices, Boards, and Divisions |
| | Justice-U.S. Marshals Service |
| | Labor-Bureau of Labor Statistics |
| | Labor-Employment & Training Admin |
| | Labor-Wage and Hour Division |
| | Labor-Office of Workers Compensation Program |
| | Labor-Mine Safety & Health Admin |
| | Labor-Occupational Safety & Health Admin |
| | Defense-Department of the Air Force |
| | Defense-Department of the Army |
| | Interior-Bureau Of Indian Affairs |
| | Interior-Bureau Of Land Management |
| | Interior-Bureau Of Reclamation |
| | Interior-Bureau Of Surface Mining |
| | Interior-Fish And Wildlife Service |
| | Interior-Geological Survey |
| | Interior-Bureau of Ocean Energy Management, Regulation, and Enforcement (Minerals Management Service) |
| | Interior-National Park Service |
| | Interior-Office Of The Secretary |
| | Defense-Department of the Navy |
| | Treasury-Alcohol & Tobacco Tax & Trade Bureau |
| | Treasury-Bureau of Engraving and Printing |
| | Treasury-Bureau of the Public Debt |
| | Treasury-Departmental Offices |
| | Treasury-Financial Crimes Enforcement Network |
| | Treasury-Financial Management Service |
| | Treasury-Internal Revenue Service |
| | Treasury-Office of the Comptroller of the Currency |
| | Treasury-Office of the Inspector General |
| | Treasury-Office of Thrift Supervision |
| | Treasury-IG For Tax Administration |
| | Treasury-U. S. Mint |
| | Transportation-Federal Aviation Admin |
| | Transportation-Federal Highway Admin |
| | Transportation-Federal Motor Carriers Safety Admin |
| | Transportation-Federal Railroad Administration |
| | VA-National Cemetery Administration |
| | VA-Veterans Benefits Administration |
| | VA-Veterans Health Administration |

## 2. Tabular Endogenous Treatment Effect Regression Model Estimates Reported in Manuscript

**TABLE A–3: Endogenous Treatment Effect Model Estimates Reported in Manuscript (*FIGURE 2*)**

| Model Estimates | Expected Sign | Reported Levels of Discrimination (*H1*) | Informal Caseload Rate (*H2*) | Withdrawn Caseload Rate (*H3a*) | Settlement Caseload Rate (*H3b*) |
|---|---|---|---|---|---|
| **Average Treatment Effect (ATE)** | **+** | 173.12*** | 0.31*** | 0.29*** | 0.01 |
| | | (60.28) | (0.10) | (0.10) | (0.08) |
| **Baseline Effect for ATE** | + | 75.25*** | 0.23*** | 0.19*** | 0.08* |
| | | (19.43) | (0.05) | (0.04) | (0.05) |
| **Average Treatment Effect on the Treated (ATET)** | **+** | 182.41*** | 0.33*** | 0.24*** | 0.03 |
| | | (64.77) | (0.09) | (0.07) | (0.09) |
| **Baseline Effect for ATET** | + | 54.19** | 0.11 | 0.11** | 0.05 |
| | | (29.25) | (0.09) | (0.06) | (0.09) |
| **Regression Adjustment Covariates [*CROA Agencies*]** | | | | | |
| Latent Orgnizational Fariness $_{CROA}$ | − [+] | −0.75*** (0.18) | −0.22 (0.16) | −0.30+ (0.17) | 0.13 (0.19) |
| The Ratio of Women Supervisors $_{CROA}$ | − [+] | 0.33++ (0.12) | 0.17 (0.13) | 0.18 (0.15) | 0.03 (0.15) |
| The Ratio of Minority Supervisors $_{CROA}$ | − [+] | −0.07 (0.08) | −0.05 (0.04) | −0.04 (0.05) | −0.04 (0.03) |
| ln(Organizational Size) $_{CROA}$ | + | 0.87*** (0.05) | 0.00 (0.03) | −0.01 (0.03) | 0.02 (0.03) |
| **Regression Adjustment Covariates [*Non-CROA Agencies*]** | | | | | |
| Latent Orgnizational Fariness $_{Non-CROA}$ | − [+] | −0.83*** (0.25) | −0.06 (0.19) | 0.02 (0.15) | −0.04 (0.28) |
| The Ratio of Women Supervisors $_{Non-CROA}$ | − [+] | 0.24 (0.22) | 0.20 (0.16) | 0.14 (0.12) | 0.09 (0.18) |
| The Ratio of Minority Supervisors $_{Non-CROA}$ | − [+] | 0.04 (0.09) | −0.04 (0.08) | 0.02 (0.05) | −0.09 (0.08) |
| ln(Organizational Size) $_{Non-CROA}$ | + | 0.88*** (0.06) | −0.04 (0.05) | 0.03 (0.04) | −0.12+ (0.07) |
| **Endogenous Treatment Effect (0 = Non-CROAs, 1 = CROAs)** | | | | | |
| Latent Orgnizational Fariness $_{Treatment}$ | + | 0.65** (0.30) | 0.55** (0.30) | 0.56** (0.30) | 0.57** (0.30) |
| The Ratio of Women Supervisors $_{Treatment}$ | + | −0.53 (0.32) | −0.48 (0.31) | −0.48 (0.31) | −0.47 (0.31) |
| The Ratio of Minority Supervisors $_{Treatment}$ | + | 0.06 (0.16) | 0.03 (0.16) | 0.03 (0.16) | 0.04 (0.16) |
| ln(Organizational Size) $_{Treatment}$ | + | −0.10 (0.10) | 0.08 (0.08) | 0.08 (0.08) | 0.09 (0.08) |
| Nonnested Agency $_{Treatment}$ | + | 0.77*** (0.26) | 0.83*** (0.27) | 0.82*** (0.27) | 0.86*** (0.27) |
| Agency Staffing Politicization $_{Treatment}$ | − | −1.15 (2.00) | −1.50 (2.23) | −1.33 (2.27) | −1.21 (2.29) |
| Lagged Discrimination Caseload $_{Treatment}$ | + | 0.00** (0.00) | 0.89** (0.46) | 0.83** (0.40) | 0.37 (0.78) |
| Control Function Endogeneity Test: $\chi^2 \sim (2)$ | | 15.26 [0.00] | 6.02 [0.05] | 6.09 [0.05] | 0.22 [0.89] |

**Notes:** Robust standard errors are clustered by agencies. Probability values are inside brackets. Sample size is 506 agency-year observations. For '**Expected Sign**' column, the top expected signs pertain to the first set of models, **Reported Levels of Discrimination** (***H1***). The underneath expected signs with brackets ([+] or [−]) pertain to the remaining sets of models, **Informal Caseload Rate** (***H2***), **Withdrawn Caseload Rate** (***H3a***), and **Settlement Caseload Rate** (***H3b***). Lagged Discrimination Caseload $_{Treatment}$ represents Lagged Total Number of Reported Discrimination for **H1**, Lagged Informal Caseload Rate for **H2**, Lagged Withdrawn Caseload Rate for **H3**, and Lagged Settlement Caseload Rate for **H4**.

***(+++) $p < 0.01$ **(++) $p < 0.05$ *(+) $p < 0.10$. Based on one-tailed (two-tailed) probability tests.

**TABLE A−4: Endogenous Treatment Effect Model Estimates Reported in Manuscript (*FIGURES 4A, 4B*)**

| Model Estimates | Expected Sign | Reported Levels of Discrimination | | | Informal Caseload Rate | | |
|---|---|---|---|---|---|---|---|
| | | Low OF | Moderate OF | High OF | Low OF | Moderate OF | High OF |
| **Average Treatment Effect (ATE)** | + | N/A | 85.59 (101.14) | 360.39* (224.19) | 0.33*** (0.12) | 0.08 (0.07) | 0.41*** (0.08) |
| **Baseline Effect for ATE** | + | N/A | 115.66*** (39.43) | 34.78* (23.62) | 0.28*** (0.07) | 0.29*** (0.05) | 0.13*** (0.05) |
| **Average Treatment Effect on the Treated (ATET)** | + | N/A | 107.29** (63.33) | 181.91*** (66.60) | 0.28** (0.13) | 0.27*** (0.11) | 0.41*** (0.08) |
| **Baseline Effect for ATET** | + | N/A | 105.69* (72.17) | 17.53 (22.22) | 0.17* (0.12) | 0.15** (0.09) | 0.02 (0.05) |
| **Regression Adjustment Covariates [*CROA Agencies*]** | | | | | | | |
| Latent Orgnizational Fariness $_{CROA}$ | − [+] | N/A | −0.99*** (0.31) | −0.80* (0.60) | 0.35 (0.42) | −0.12 (0.53) | 0.13 (0.35) |
| The Ratio of Women Supervisors $_{CROA}$ | − [+] | N/A | −0.41*** (0.17) | 0.68++ (0.27) | 0.31* (0.22) | −0.12 (0.12) | 0.44** (0.25) |
| The Ratio of Minority Supervisors $_{CROA}$ | − [+] | N/A | 1.32+++ (0.38) | −1.09* (0.81) | −0.03 (0.05) | −0.46++ (0.22) | −1.05++ (0.52) |
| ln(Organizational Size) $_{CROA}$ | + | N/A | 0.93*** (0.03) | 0.90*** (0.08) | 0.01 (0.06) | −0.02 (0.04) | 0.03 (0.05) |
| **Regression Adjustment Covariates [*Non-CROA Agencies*]** | | | | | | | |
| Latent Orgnizational Fariness $_{Non-CROA}$ | − [+] | N/A | −2.02** (1.10) | −0.28 (0.93) | 0.87** (0.42) | −0.63 (0.58) | 0.17 (0.71) |
| The Ratio of Women Supervisors $_{Non-CROA}$ | − [+] | N/A | −0.05 (0.25) | 0.17 (0.74) | 0.11 (0.19) | 0.00 (0.17) | 0.98** (0.55) |
| The Ratio of Minority Supervisors $_{Non-CROA}$ | − [+] | N/A | 0.38++ (0.15) | −1.20 (2.48) | 0.08* (0.05) | 0.06 (0.06) | −3.12 (2.01) |
| ln(Organizational Size) $_{Non-CROA}$ | + | N/A | 0.99*** (0.08) | 1.10*** (0.15) | −0.02 (0.06) | 0.00 (0.07) | −0.07 (0.09) |
| **Endogenous Treatment Effect (0 = Non-CROAs, 1 = CROAs)** | | | | | | | |
| Latent Orgnizational Fariness $_{Treatment}$ | + | N/A | 2.11** (1.27) | −0.01 (0.66) | 2.02*** (0.76) | 1.91* (1.37) | −0.31 (0.74) |
| The Ratio of Women Supervisors $_{Treatment}$ | + | N/A | −0.29 (0.43) | −0.69 (0.50) | −1.06 (0.83) | −0.30 (0.44) | −0.75 (0.50) |
| The Ratio of Minority Supervisors $_{Treatment}$ | + | N/A | −0.64+ (0.37) | 2.03** (1.09) | −0.63 (0.43) | −0.57++ (0.27) | 2.30** (1.20) |
| ln(Organizational Size) $_{Treatment}$ | + | N/A | −0.18 (0.13) | −0.15 (0.14) | 0.12 (0.11) | −0.01 (0.11) | −0.00 (0.10) |
| Nonnested Agency $_{Treatment}$ | + | N/A | 0.95*** (0.36) | 0.86** (0.38) | 0.50 (0.41) | 1.11*** (0.37) | 0.94*** (0.39) |
| Agency Staffing Politicization $_{Treatment}$ | − | N/A | −4.12* (2.64) | 1.98 (3.06) | 1.13 (3.02) | −8.02*** (3.37) | 1.90 (2.90) |
| Lagged Discrimination Caseload $_{Treatment}$ | + | N/A | 0.00** (0.00) | 0.00* (0.00) | 2.02*** (0.76) | 0.65 (0.88) | 0.92* (0.66) |
| Control Function Endogeneity Test $\chi^2 \sim (2)$ | | N/A | 5.17 [0.08] | 5.18 [0.08] | 4.22 [0.12] | 5.92 [0.05] | 3.58 [0.17] |

**Notes:** Robust standard errors are clustered by agencies. Probability values are inside brackets. Low OF for **H1** is N/A (Not Available) since treatment overlap assumption is violated. Sample size is 168/169 agency-year observations for Moderate/High OFs for **H1**, and 168/166/167 agency-year observations for Low/Moderate/High OFs for H2. For the '**Expected Sign**' column, the top expected signs pertain to the first set of models, **Reported Levels of Discrimination**. The underneath expected signs with brackets (**[+]** or **[−]**) pertain to the remaining set of models, **Informal Caseload Rate**. Lagged Discrimination Caseload $_{Treatment}$ represents Lagged Total Number of Reported Discrimination for **H1** and Lagged Informal Caseload Rate for **H2**.

***(+++) $p < 0.01$ **(++) $p < 0.05$ *(+) $p < 0.10$. Based on one-tailed (two-tailed) probability tests.

**TABLE A–5: Endogenous Treatment Effect Model Estimates Reported in Manuscript (*FIGURES 4C, 4D*)**

| Model Estimates | Expected Sign | Withdrawn Caseload Rate | | | Settlement Caseload Rate | | |
|---|---|---|---|---|---|---|---|
| | | **Low OF** | **Moderate OF** | **High OF** | **Low OF** | **Moderate OF** | **High OF** |
| **Average Treatment Effect (ATE)** | **+ [0]** | 0.34** (0.18 | 0.07 (0.06) | 0.35*** (0.07) | 0.10 (0.15) | −0.13 (0.15) | 0.03 (0.19) |
| **Baseline Effect for ATE** | + | 0.20*** (0.05) | 0.26*** (0.03) | 0.09*** (0.02) | 0.07** (0.03) | 0.18* (0.14) | 0.09 (0.18) |
| **Average Treatment Effect on the Treated (ATET)** | **+ [0]** | 0.24*** (0.10) | 0.14** (0.07) | 0.34*** (0.04) | 0.05 (0.06) | −0.17 (0.26) | 0.01 (0.24) |
| **Baseline Effect for ATET** | + | 0.12* (0.09) | 0.21*** (0.06) | 0.00 (0.01) | 0.03 (0.06) | 0.25 (0.26) | 0.09 (0.24) |
| **Regression Adjustment Covariates [*CROA Agencies*]** | | | | | | | |
| Latent Orgnizational Fariness *CROA* | + | 0.20 (0.54) | −0.12 (0.55) | −0.06 (0.40) | 0.72* (0.55) | −0.02 (0.71) | 0.39 (0.41) |
| The Ratio of Women Supervisors *CROA* | + | 0.28 (0.29) | −0.03 (0.12) | 0.34* (0.26) | 0.28 (0.26) | −0.23 (0.27) | 0.28 (0.23) |
| The Ratio of Minority Supervisors *CROA* | + | −0.03 (0.05) | −0.34 (0.23) | −0.80 (0.56) | −0.00 (0.04) | −0.45 (0.46) | −0.80 (0.60) |
| ln(Organizational Size) *CROA* | + | 0.03 (0.06) | −0.04 (0.04) | 0.01 (0.04) | −0.04 (0.04) | 0.04 (0.06) | 0.07* (0.05) |
| **Regression Adjustment Covariates [*Non-CROA Agencies*]** | | | | | | | |
| Latent Orgnizational Fariness *Non−CROA* | + | 0.62** (0.37) | −0.71 (0.48) | 0.20 (0.98) | 0.86** (0.50) | 0.78 (1.04) | 0.12 (0.58) |
| The Ratio of Women Supervisors *Non−CROA* | + | 0.20 (0.22) | −0.10 (0.10) | 0.98* (0.67) | −0.05 (0.26) | −0.06 (0.23) | 0.55** (0.27) |
| The Ratio of Minority Supervisors *Non−CROA* | + | 0.07* (0.05) | 0.10*** (0.03) | −3.60 (2.61) | 0.01 (0.06) | −0.17+ (0.10) | −1.44 (1.58) |
| ln(Organizational Size) *Non−CROA* | + | 0.07** (0.04) | 0.09** (0.06) | −0.07 (0.13) | −0.16+ (0.10) | −0.11 (0.09) | 0.06 (0.12) |
| **Endogenous Treatment Effect (0 = Non-CROAs, 1 = CROAs)** | | | | | | | |
| Latent Orgnizational Fariness *Treatment* | + | −0.91 (0.81) | 1.96* (1.39) | −0.19 (0.71) | −1.04 (0.84) | 1.93* (1.41) | −0.27 (0.71) |
| The Ratio of Women Supervisors *Treatment* | + | −0.62 (0.42) | −0.32 (0.44) | −0.67 (0.48) | −0.55 (0.43) | −0.33 (0.43) | −0.74 (0.52) |
| The Ratio of Minority Supervisors *Treatment* | + | −0.01 (0.13) | −0.60++ (0.28) | 2.05** (1.12) | −0.00 (0.13) | −0.60+ (0.32) | 2.28** (1.16) |
| ln(Organizational Size) *Treatment* | + | 0.11 (0.11) | −0.03 (0.11) | 0.01 (0.10) | 0.15* (0.11) | 0.00 (0.11) | −0.01 (0.10) |
| Nonnested Agency *Treatment* | + | 0.55 (0.43) | 1.13*** (0.38) | 0.94*** (0.39) | 0.68** (0.41) | 1.09*** (0.37) | 1.00*** (0.42) |
| Agency Staffing Politicization *Treatment* | − | 1.37 (3.16) | −8.81*** (3.06) | 2.51 (2.95) | 0.01 (3.09) | −7.56** (3.56) | 2.86 (3.24) |
| Lagged Discrimination Caseload Treatment | + | 1.11* (0.80) | 1.66** (0.92) | 0.37 (0.60) | 2.11** (1.26) | −1.95 (1.42) | 1.60 (1.42) |
| Control Function Endogeneity Test $\chi^2 \sim (2)$ | | 2.23 [0.33] | 2.12 [0.35] | 3.71 [0.16] | 1.06 [0.59] | 1.41 [0.49] | 1.03 [0.60] |

**Notes:** Robust standard errors are clustered by agencies. Probability values are inside brackets. Sample size is 168/166/167 agency-year observations for Low/Moderate/High OFs, respectively. For the '**Expected Sign**' column, the top expected signs pertain to the first set of models, **Withdrawn Caseload Rate**. The underneath expected signs with brackets (**[+]** or **[−]** or **[0]**) pertain to the remaining set of models, **Settlement Caseload Rate**. Lagged Discrimination Caseload Treatment represents Lagged Withdrawn Caseload Rate for **H3** and Lagged Settlement Caseload Rate for **H4**.

***(+++) $p < 0.01$ **(++) $p < 0.05$ *(+) $p < 0.10$. Based on one-tailed (two-tailed) probability tests.

### 3. Construction of the Latent Variable – Organizational Fairness of Administrative Environment (OF)

The latent factor score variable, *Organizational Fairness of the Administrative Environment (OF)*, is constructed to measure employees' average response of perceived organizational fairness within the agency for the corresponding year observed in our sample (2010-2014). This variable was measured using three observable indicators from the Federal Employee Viewpoint Survey (FEVS), as follows: (1) "*I can disclose a suspected violation of any law, rule or regulation without fear of reprisal.*"; (2) "*Arbitrary action, personal favoritism and coercion for partisan political purposes are not tolerated.*"; and (3) "*Prohibited Personnel Practices (for example, illegally discriminating for or against any employee/applicant, obstructing a person's right to compete for employment, knowingly violating veterans' preference requirements) are not tolerated.*" Higher values are indicative of greater perceived organizational fairness displayed within the agency. This latent factor score both constructed and employed in the current study is a modified version of the multiple-item measure that has been tested and validated in earlier public management research (e.g., Cho 2017; Choi 2013; Choi and Rainey 2014). Previous research employed four survey items to create the measure, but one survey item, "*Complaints, disputes, or grievances are resolved fairly in my work unit*," was excluded in creating the *OF* latent factor variable because this item no longer exists in FEVS since 2010.

Confirmatory factor analysis (CFA) was conducted to create the latent variable, *OF*, and to test the model fit. First, based on findings from prior research, we presume that these indicator measures tap a single dimension, and thus employ a single-factor CFA model. By using a generalized structural equation measurement modeling approach, the data generating process explicitly accounts for the ordinal categorical property of each survey item by in the statistical model. Also, survey sample weights provided in the FEVS

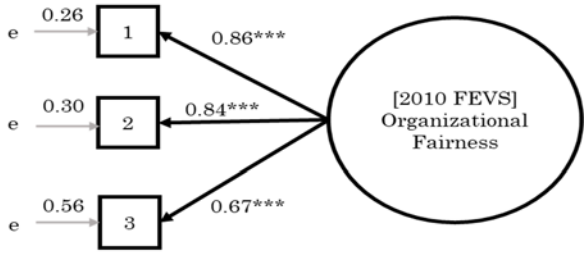
for each corresponding year were applied in the model to "*achieve the survey objective of making inferences regarding the perceptions of the population of Federal employees about workforce management in their analysis*." (Office of Personnel Management (OPM) 2013: 22). OPM calculated sampling weights to adjust for the different probability of being selected to participate in the survey across agency and agency subgroups, and the bias resulting from sample size variation (OPM 2013). Therefore, by designating the sampling weight variable in the estimation of CFAs, this study explicitly incorporates the sampling weights and averaged individual responses to the agency-level construct *OF*. The inclusion of these sampling weights is especially important for the purposes of this study since we are aggregating individual–level survey responses to the agency/organizational level.

After creating the latent variable *OF*, the general structural equation measurement model was evaluated to determine if model fit was adequate. Because model fit diagnostics are unavailable with generalized structural equation measurement modeling in Stat's *gsem* suite of commands, canonical structural equation model estimation (*sem*) was employed to evaluate model goodness of fit.[1] The model fit was analyzed by investigating through both the standardized root mean square (SRMR) and the coefficient of determination (CD) statistics which happen to be the only goodness-of-fit statistics generated when sample weights are used in statistical estimation. The SRMR is an absolute fit index that represents the average of the standardized residuals between the observed and predicted correlation matrices (Chen 2007). This goodness of fit statistic is interpreted as the

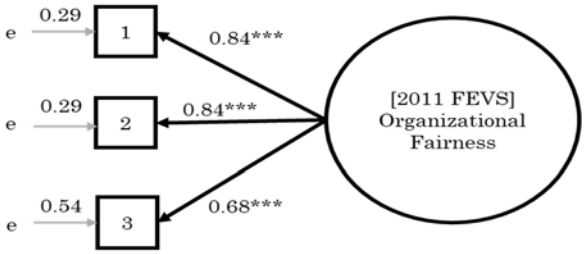
[1] The correlation between the latent variable *OF* created by *gsem* and the latent variable *OF* created by *sem* ranged from 0.9810 (2012 FEVS) to 0.9813 (2011 FEVS), and the pooled correlation coefficient was 0.994. High correlation between factor scores created by *gsem* and *sem* implies the possibility of using *sem* estimates for the model fit, as an alternative to *gsem* estimates.

indicator of a good fit when SRMR produces a value lower than 0.05 (Kline 2011; Hu and Bentler 1999). The SRMR of our hypothesized measurement model produced nearly 0.000 throughout the 2010-2014 surveys, indicating the model fits the data well. Regarding the CD statistics (the coefficient of determination statistics), a value of 1 implies a perfect fit, and a higher value of CD indicates a better fit of the model. The average value of CD for the measurement model in 2010-2014 surveys was 0.859. The goodness of fit indices suggested that the proposed one-factor structure of *OF* has a good fit. In order to have convergent validity of the measure, Kline (2011: 116) posits that all indicators to measure latent variables should "have relatively high standardized factor loadings on that factor," and suggests 0.70 as the critical value. The results of CFA showed that high proportions of variance in survey items, between 0.67 and 0.86, are accounted for by the theoretically hypothesized construct, providing moderate support for the convergent validity (see **Figure A-1** below). Based on these diagnostic tests, the measurement model employed to capture latent organizational fair environment in U.S. federal agencies provides valid estimates of the latent *OF* variable employed in this study.

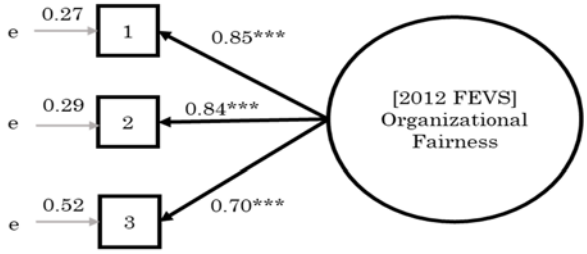
**Figure A–1. Confirmatory Factor Analyses Estimates of the Latent Variable, *OF (Organizational Fairness of Administrative Environment)***



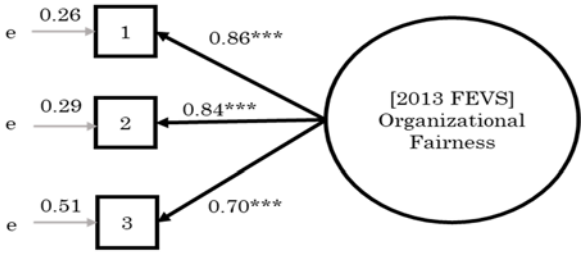

SRMR: 0.000 CD: 0.856



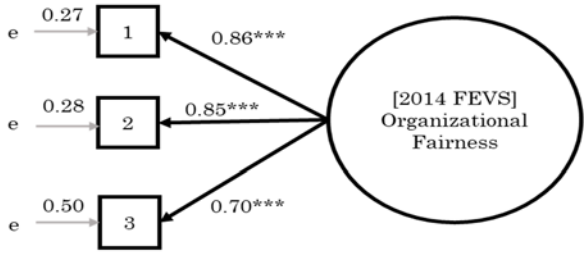

SRMR: 0.000 CD: 0.853




SRMR: 0.000 CD: 0.859




SRMR: 0.000 CD: 0.862




SRMR: 0.000 CD: 0.863

Note: Standardized parameter estimates.

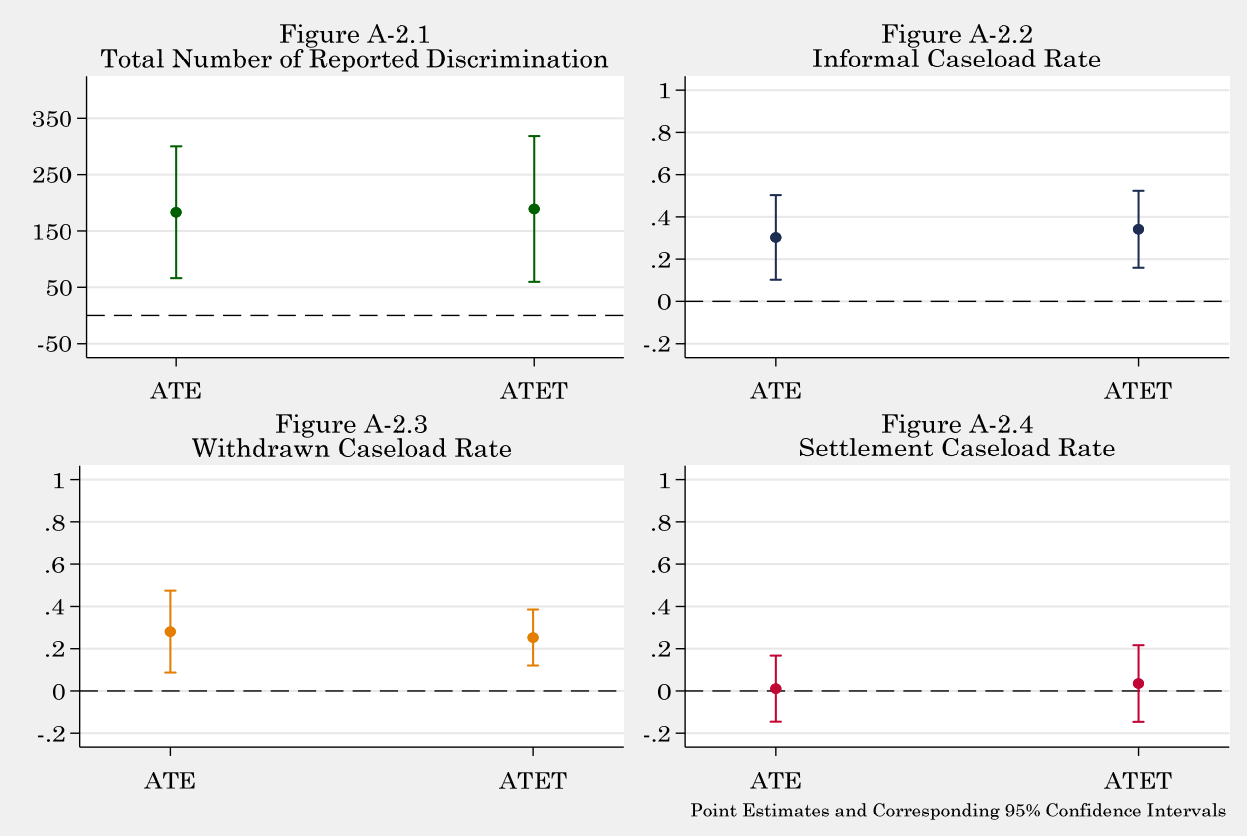
*** $p < .001$

## 4. Sensitivity Check # 1: Model Specification Choice Involving Agency Politicization Covariate

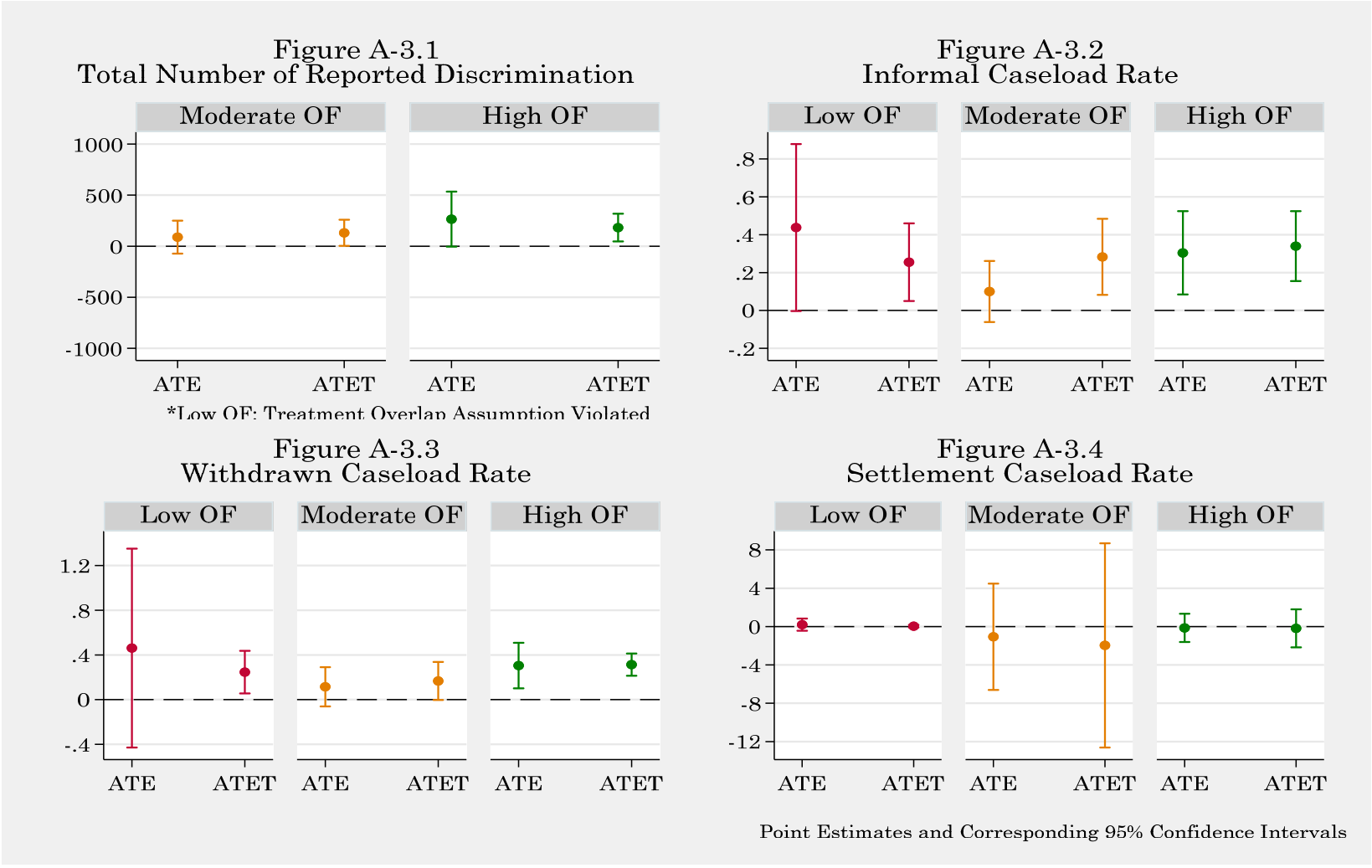
We also evaluate the sensitivity of the estimates evaluating organizational mitigation theory by assuming that agency politicization may instead affect discrimination outcome variables instead of working as a unique regressor that only affects the probability of observing CROA. The statistical analyses yield similar substantive findings to those presented in the main manuscript, with the following exceptions – **H1**: High OF model [ATE]: 265.01 versus 360.39; **H2**: High OF model [ATE / ATET]: 30.41% / 33.97% versus 40.05%/41.31%, Low OF model [ATE]: 43.79% versus 33.20%; and **H3a**: Low OF model [ATE]: 46.18%, p = 0.156 versus 34.24%, p = 0.027. *Due to Supplementary Appendix Document Space Limitations, the Full Set of Tabular Regression Estimates Can Be Obtained by Request from the Authors.*

**FIGURE A–2:**

**Estimating the Differential Effects of CROA on U.S. Federal Agency Discrimination Cases, Full Sample (*Based on Politicization Covariate Model Sensitivity Check*)**



**<u>FIGURE A–3:</u> Estimating the Differential Effects of CROA on U.S. Federal Agency Discrimination, OF Subsamples (*Based on Politicization Covariate Model Sensitivity Check*)**



## 5. Sensitivity Check # 2: Omission of Cases Involving CROA/Non–CROA 'Switching' & Single-Year Agencies

The following sensitivity checks omitting both 'switch back' agency cases (7 agencies, 5.3% of the sample) and single-year agency cases (9 agencies, 6.9% of the sample). Dropping these cases reduces the effective number of observations from 506 to 465. The statistical analyses yield substantively similar empirical findings to those presented in the manuscript regarding the core hypotheses generated from dual exposure-information resolution strategy with two exceptions where the estimated effect is smaller and estimated with greater imprecision and estimated with greater imprecision, respectively: **H1**: Moderate OF model [ATET]: 89.71 [p = 0.095, one-tailed test] versus 107.29 [p = 0.045, one-tailed test]; **H3a**: Low OF model [ATET]: p = 0.160 versus p = 0.027 [one-tailed tests]. Due to Supplementary Appendix Document Space Limitations, the *Full Set of Tabular Regression Estimates Can Be Obtained by Request from the Authors.*

**FIGURE A–4:**

**Estimating the Differential Effects of CROA on U.S. Federal Agency Discrimination Cases, Full Sample (*Based on* Omission of Cases Involving CROA/Non–CROA 'Switching' & Single-Year Agencies *Sensitivity Check*)**

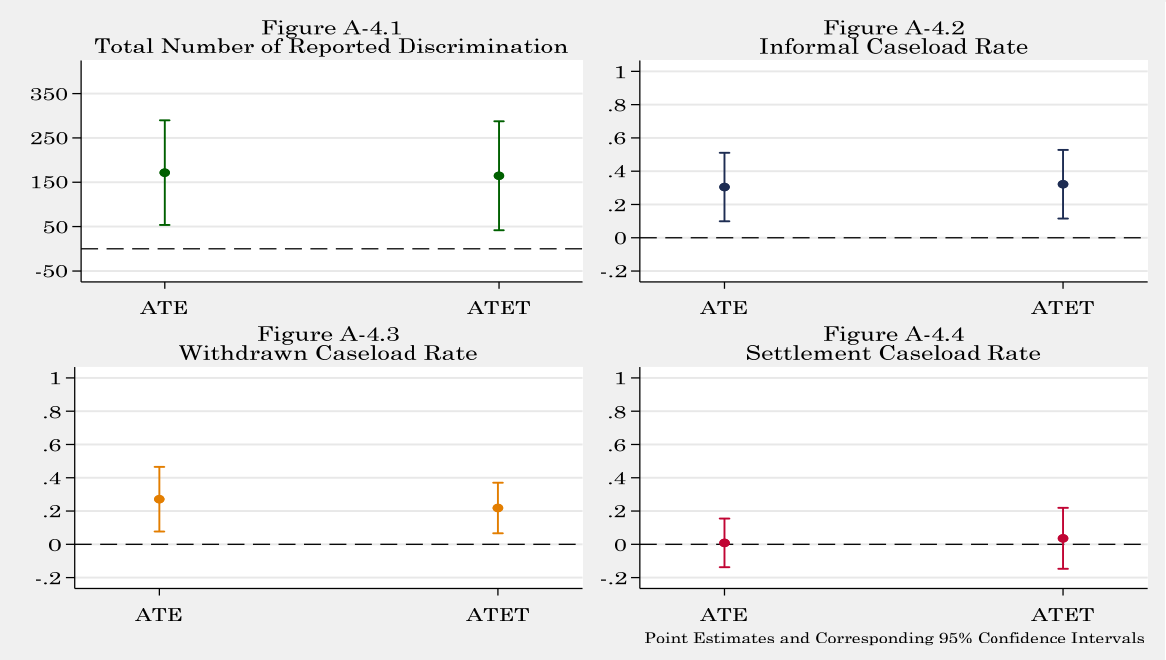
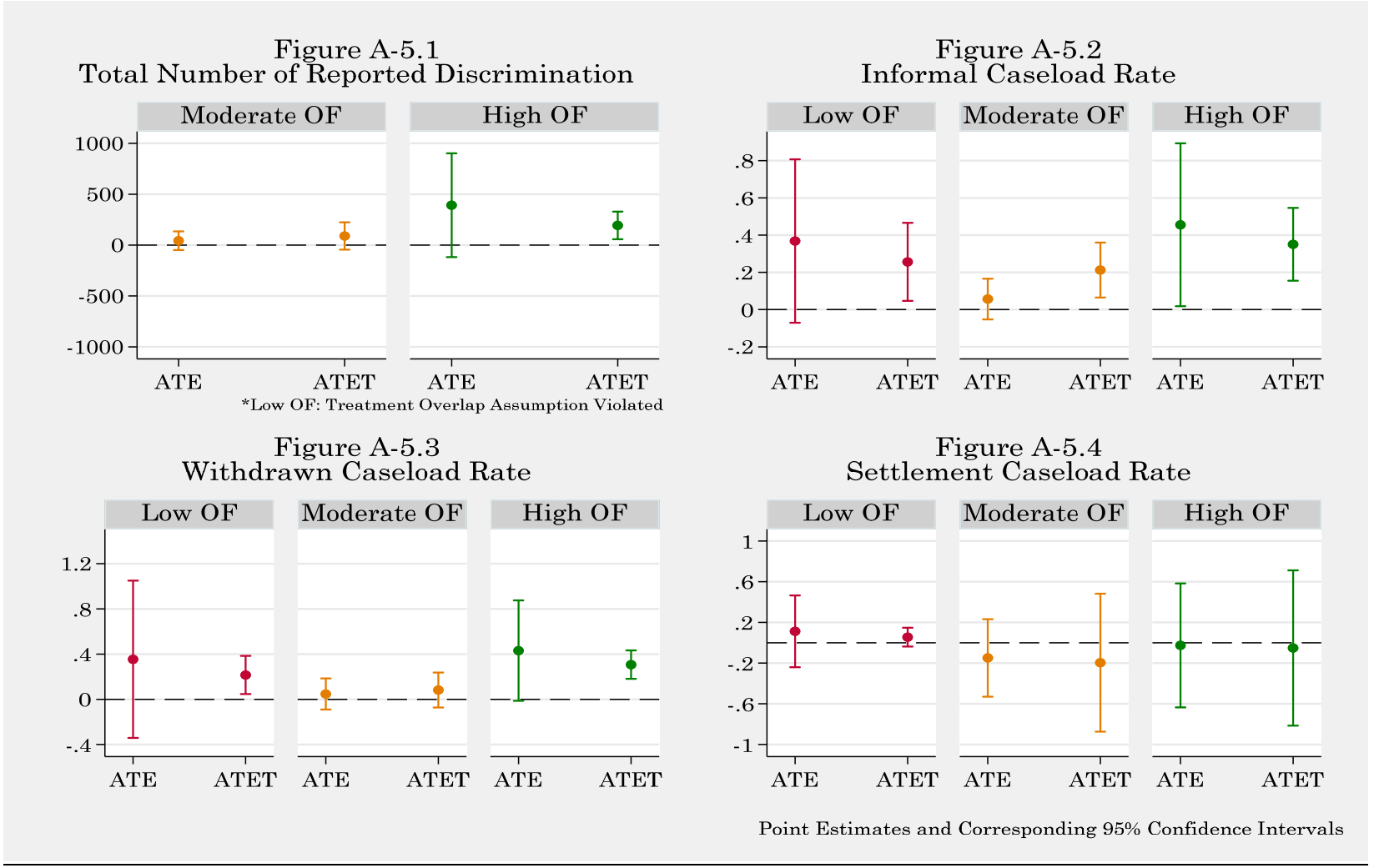


**FIGURE A–5:**

**Estimating the Differential Effects of CROA on U.S. Federal Agency Discrimination Cases, OF Subsamples (*Based on* Omission of Cases Involving CROA/Non–CROA 'Switching' & Single-Year Agencies *Sensitivity Check*)**



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