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Organizational Justice and the Inclusion of LGBT Federal Employees: A Quasi-Experimental Analysis Using Coarsened Exact Matching

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Abstract

Inclusiveness occurs when employees are considered a part of critical organizational processes, which means that they have access to information (including information that may be passed around through informal networks), a connectedness to coworkers, and the ability to participate in and influence the decision-making process. With an organizational justice framework, this study examines the level of inclusion federal lesbian, gay, bisexual, transgender (LGBT) employees perceive, compared to their heterosexual counterparts. Using a quasi-experimental method, coarsened exact matching, we find expected differences in perceptions of procedural and informational justice but no perceived differences in distributional justice between LGBT and heterosexual federal employees. The implications of our methodology and findings for the diversity management literature are discussed.

Keywords

organizational justice, inclusion, diversity, minority, LGBT

A core function of human resource management (HRM) is the managing of a diverse and heterogeneous workforce. Approaches to managing workforce diversity have expanded beyond ensuring there is a greater representation of minorities in government

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and preventing workforce discrimination against historically marginalized or disadvantaged minority groups to encompass a broader set of programs and policies geared toward getting the most value out of a diverse workforce (Roberson, 2006). As such, scholars have begun to focus on how diversity management contributes to creating an inclusive workplace in the public service (Ashikali & Groeneveld, 2015; Moon, 2018; Sabharwal et al., 2019).

Inclusion occurs when employees are considered a part of critical organizational processes, which means that they have access to information (such as information that may be passed around through informal networks), a connectedness to coworkers, and the ability to participate in and influence the decision-making process (Mor Barak, 2014; Pless & Maak, 2004). Inclusion differs from earlier diversity management efforts in that inclusion includes people being appreciated for their differences rather than the assimilation of diverse workers into a certain (e.g., White, hetero-normative) set of norms. On the contrary, exclusion usually occurs for those not in the majority group, either formally or informally through policies, networks, norms, organizational culture, or practices and behavior. Even when not overt, exclusion results when employees perceive that they are not regarded as an integral part of the organization. As such, earlier diversity efforts were exclusionary in that they focused on minority workers adapting to and following the status quo. Employee perceptions of exclusion have been associated with job dissatisfaction and increased turnover intention, lower trust in supervisors, poor employee morale, and slowed performance improvement (Cho & Sai, 2012; Moon, 2018; Pink-Harper et al., 2017).

To create a sense of inclusion among workers, effective diversity management practice requires a greater focus on how organizational behaviors and processes may affect those who are in the minority in terms of sociodemographic characteristics. Scholarship related to minority employees and diversity in the public sector has primarily focused on demographically visible minority groups, such as racial and ethnic minorities and women. Relatively little attention has been paid to invisible minority groups, which are those with attributes that can be hidden, such as sexual orientation, marriage status, immigration status, and health status. Invisible groups are difficult to study because, unlike race or gender, for instance, the person can choose to disclose or not disclose their invisible minority status (Griffith & Hebl, 2002). As a result, there is relatively little empirical research on diversity management and invisible minority groups (although see Federman & Elias, 2017; Jin & Park, 2017; Lewis & Pitts, 2017; Sabharwal et al., 2019). In this regard, this study examines the level of inclusion federal lesbian, gay, bisexual, transgender (LGBT) employees perceive, compared to their heterosexual counterparts.

This article makes three contributions to the literature. First, to empirically examine the broad concept of inclusion, we use an organizational justice framework in which three dimensions of organizational justice: distributional justice (e.g., pay, rewards, and performance), procedural justice (e.g., policies and procedures), and informational justice (e.g., information sharing) are used to measure perceived inclusion. Second, this study focuses on a recently federally protected, and less visible, minority group, LGBT employees. LGBT employees are a unique demographic in that "unlike members of other minority groups who may differ in outward appearances, such as gender or skin color, LGB individuals may intentionally conceal their minority status" (Pickern & Costakis, 2017, p. 74).[1] This is because, despite their invisible status, LGBT employees have experienced and still experience workplace discrimination, regardless of whether or not they have disclosed their LGBT status (Lewis & Pitts, 2017). Third, this is one of the first empirical efforts to explore federal LGBT employees using a quasi-experimental design with a coarsened exact matching (CEM) method to match heterosexual employees whose demographic and work-related characteristics are the same as LGBT employees. As LGBT employees compare themselves with similar employees to evaluate how they are treated at work (Lewis & Pitts, 2017), CEM is a particularly useful approach to empirically comparing perceptions of organizational justice between LGBT and heterosexual employees.

The article proceeds as follows. First, the article introduces organizational justice as a framework for studying inclusion, which is grounded in social identity theory. After providing a brief overview of the discrimination and the eventual protection of LGBT federal employees in the United States, hypotheses about differences in perceptions of organizational justice as inclusion are presented. The research methodology is explained along with the dataset. Findings show that the fairness of the personnel system is perceived similarly by LGBT and non-LGBT employees, but LGBT perceptions of the fairness of processes and procedures, and information sharing, are lower than their non-LGBT counterparts. The article concludes with a discussion of our findings within the LGBT and broader diversity management literature.

Organizational Inclusion as Perceptions of Organizational Justice

Inclusion is the degree to which an employee feels they are accepted and treated as an insider by others in the organization (Brimhall et al., 2017; Roberson, 2006). Individuals often perceive an organization as inclusive when they receive signals of belongingness from others within the workplace. Inclusive organizations value their employees and their ideas are taken into account and used, and employees within and across departments partner together successfully. These feelings of belonging are a function of many factors such as one's level of access to information and resources, involvement in work groups, and ability to influence decision-making processes (Mor Barak & Cherin, 1998; Roberson, 2006, p. 215). Inclusive organizations are attractive to prospective employees because the organization attends to diversity and "continuously fosters flexibility and choice" (Gasorek, 2000; Sabharwal et al., 2019, p. 484). Simply, people feel that they belong and are connected to each other and to the organization and its goals. Examining how individuals in the minority or out-group are treated compared with individuals in the majority group (i.e., in-group) is an important case for determining how inclusive an organization may be. That is, individuals who belong to the out-group may experience pervasive discrimination by others and define the organization as exclusionary and unfair (Branscombe et al., 1999).

Organizational justice theory provides a useful framework in which to compare in and out-group differences in the inclusion and fair treatment of workers. Organizational justice relates to perceptions of fairness (Colquitt, 2001; Cropanzano et al., 2001; Moorman, 1991) and is rooted in the theory of equity—employees have the right to expect that rewards will be fairly and justly distributed in proportion to their respective commitments to their organizations (Carrell & Dittrich, 1978). Organizational justice, or perceived fairness, in multiple aspects of organizational processes and policies from those in the out-group or the minority is a hallmark of inclusion.

While there is no literature directly linking organizational justice and inclusion, there are a few scholars who argue about the connection between them. Tyler and Lind's (1992) relational model of authority proposes that procedural justice is important because it provides information to individuals about their inclusion in valued groups (Fischer et al., 2011, p. 300). Roberson (2006) conducted several tests to distinguish between the concepts of diversity and inclusion and suggested that ideas related to organizational justice such as fair treatment, equitable systems, and information sharing, are significantly associated with the concept of inclusion.

Perceptions of fairness or justice are based on an individual's personal beliefs of how they are being treated compared with their coworkers; an employee's perception of organizational justice is formed by comparing their treatment as a member of a specific group compared with members of another group (Allen & Wilder, 1975; Billig & Tajfel, 1973). Namely, if the group one belongs to is categorized as a minority group, employees within that minority group will compare the ways they are being treated with employees who are not in that minority group. Unfair treatment is perceived to be due to their minority status and perceptions of organizational justice and inclusion are low.

Improving employees' beliefs about fairness and justice is critical in the workplace as high perceptions of organizational justice have been found to be positively associated with employee satisfaction, trust and commitment, job performance, and citizenship behavior (Cho & Sai, 2012; Cropanzano et al., 2007; Potipiroon & Rubin, 2018). On the contrary, research has shown that if employees believe that, relative to their coworkers, their contributions-to-rewards ratios are unfair and unequal, they will define their organization as unjust and their motivation and contributions are poor (Adams, 1965).

Previous research on organizational justice has found several dimensions of justice that parallel various organizational processes, such as pay and promotions (i.e., distributive justice), policies and procedures (i.e., procedural justice), and access to information (i.e., informational justice; Colquitt, 2001). Distributive justice is defined as "the perceived fairness of resources received" (Greenberg, 2002, p. 122). Many studies of distributive justice have emphasized the economic or instrumental aspects of fairness in organizational processes, including pay and promotions. An employee can experience a sense of inequality when the organization provides unfair treatment in terms of pay and promotions. For example, distributive justice is operationalized as an employee's comparison between their payment level and promotion opportunities with others in the organization at a similar work level (Cohen-Charash & Spector, 2001; Greenberg, 2002). Simply, distributive justice refers to the fairness of pay and promotions (Cohen-Charash & Spector, 2001), or the fairness in allocating employee benefits (Colquitt, 2001). When employees perceive inequality related to pay and promotions compared to other employees, they can be dissatisfied, angry, resentful, lose motivation, and have a higher turnover intention (Crosby, 1984; Steil et al., 1978). While distributive justice is a reflection of the more formal aspects of diversity management, employee perceptions related to pay, rewards, and promotions contribute to the sense of belonging and feeling valued that is essential to inclusion.

The second dimension, procedural justice, relates to the extent to which employees can express their views during work-related processes without fear of bias (Colquitt, 2001). Procedural justice refers to "the fairness of the means by which an allocation decision is made" (Greenberg, 2002, p. 123). The fairness of formal policies and procedures employees perceive, as well as perceiving decision-making processes as reliable and predictable, are key to explaining procedural justice (Lind & Tyler, 1988). Procedural justice in this context relates to the consistent and ethical implementation of policies and procedures in a way that is without bias (Leventhal, 1980). That is, procedures should be consistently applied to every employee and representative to all groups without being influenced by the decision-maker's self-interest. Information used should be accurate and the implementation of policies and procedures should uphold ethical standards. The system should also have a way for flawed decisions to be corrected (Colquitt, 2001; Moon & Christensen, 2015, p. 6). Empirically, procedural justice is positively associated with employees' satisfaction with their jobs, supervisors, and organizations and is negatively associated with turnover intention and personnel complaints (Rubin, 2009; Rubin & Chiqués, 2015). Essentially, if an organization's policies and procedures or their implementation are unfair, individuals are less likely to trust their organization and more likely to respond unhelpfully to their organizations (Cropanzano & Folger, 1989).

Informational justice is defined as "the extent to which the [supervisor] makes an effort to justify decisions and procedures" (Ellis et al., 2009, p. 138). Informational justice refers to whether one's boss provides adequate explanations regarding their decisions (Colquitt, 2001), and the fairness in access to information that the employee receives not only from formal channels between supervisor and coworkers but also from informal channels such as networking and mingling with coworkers and supervisors (Cho & Sai, 2012). An adequate explanation and providing the decision in a timely manner contribute to perceptions of fairness because adequate and timely explanations signal to employees that they are worthy of respect (Bies & Moag, 1986). In other words, informational justice relates to the more informal ways that employees can feel included—by having the same access to information and by being connected to supervisors and coworkers. Organizations that provide accurate information and communicate in a timely and sincere way about procedures are perceived as fairer (Colquitt, 2001; Crawshaw et al., 2013; Moon & Christensen, 2015, p. 7).

These three dimensions of organizational justice: distributional, procedural, and informational (e.g., pay and promotions, policies and procedures, and information sharing, respectively), align with the principles of inclusion (Fischer et al., 2011; Roberson, 2006; Tyler & Lind, 1992). The organizational justice framework allows us to examine with more nuance the ways in which diversity management processes and policies may contribute to LGBT federal employee perceptions of inclusion or exclusion in their workplace compared with their heterosexual counterparts (Harris et al., 2004).

Experiences of LGBT Employees in the Workforce

In the U.S. federal government, both LGBT individuals and individuals suspected of non-heterosexual orientations have historically been subjected to persistent workplace discrimination (Lewis, 1997; Lewis & Pitts, 2017; U.S. Merit Systems Protection Board [MSPB], 2014). For example, in the 1920s, the U.S. Post Office Department dismissed an employee because it suspected he was gay (Lewis, 1997). During the 1950s and 1960s, sexual orientation-based discrimination was so pervasive that almost 3,000 federal employees were officially dismissed or resigned from federal agencies because of their perceived sexual orientation (MSPB, 2014).

While the 1969 milestone case *Norton v. Macy* ruled that sexual orientation should not be grounds for terminating employment, it took a series of federal court cases to lead the U.S. Equal Employment Opportunity Commission to eventually ban discrimination based on sexual orientation under very limited conditions (Elias, 2017). In 2014, sexual orientation and gender identity were added to the list of federally protected classes in the workplace, which includes classes such as race, color, religion, sex, and national origin (Gates & Saunders, 2016). However, governmental protections for LGBT workers has been thrown into doubt with a trio of court cases heard by the U.S. Supreme Court in 2019 (*Altitude Express Inc. v. Zarda, Bostock v. Clayton County, R.G. & G.R. Harris Funeral Homes v. EEOC*). These cases challenge existing piecemeal policies in the United States about LGBT discrimination in the workplace. Specifically, policies protecting LGBT workers are based on Title VII of the Civil Rights Act of 1964; policies about non-discrimination related to gender identity and sexual orientation fall under the protected class of sex. At the time of this writing, a decision has not yet been handed down by the Court.

Despite an increase in attempts to protect LGBT federal workers, LGBT workers are still hesitant to reveal their sexual orientation and identity at work. In the United States, over 53% of LGBT workers have not revealed their sexual orientation or gender identity at work due to a long and persistent experience of formal and informal discrimination in the workforce (Fidas & Cooper, 2014). Furthermore, sexual orientation-based discrimination may persist in the workplace as LGBT employees continue to report lower levels of work-related attitudes (i.e., dissatisfactions with jobs, tasks, organizations, and relations with others) compared with heterosexual employees. For instance, Lewis and Pitts (2017) found that LGBT federal employees believe that they are treated less fairly than their heterosexual counterparts on a variety of dimensions related to performance appraisals, pay, turnover, and relationships with supervisors and peers. Jin and Park (2017) found that LGBT employees are less likely to engage in the working environment, which leads to less satisfaction with their job and work conditions than non-LGBT employees.

Synthesizing LGBT research in the private sector, Croteau (1996) highlighted that 25% to 66% of LGB individuals reported experiencing employment discrimination. LGBT employees receive significantly lower wages and fewer promotion opportunities than heterosexual employees (McFadden, 2015). In terms of wage discrimination, Laurent and Mihoubi (2012) found that wage discrimination for LGBT employees is worse in professional jobs than in low-skill jobs. LGBT individuals received fewer job opportunities than heterosexual employees when they disclosed their sexual orientation (Drydakis, 2009). In addition to discrimination in employment opportunities, sexual orientation discrimination is negatively associated with organizational commitment, job satisfaction, promotion opportunities and rates, and retention intention (Ragins & Cornwell, 2001).

On the other hand, research has found that positive and supportive work environments for LGBT employees can improve individual work-related outcomes and organizational performance (Griffith & Hebl, 2002; Ozeren, 2014; Pink-Harper et al., 2017). Organizations with pro-LGBT policies are positively associated with recruiting talented employees, reduced turnover intention, and improved organizational productivity (Sabharwal et al., 2019; Wang & Schwarz, 2010). LGBT employees are also likely to outperform heterosexual employees when working in positive and supportive work environments (Madera, 2010). LGBT employees in organizations with more supportive LGBT policies perceive a greater sense of inclusion than LGBT employees in organizations that are less supportive (Pichler et al., 2017).

It is important to note that finding more supportive coworkers, a more supportive work environment, or an organization with pro-LGBT policies could require disclosing sexual orientation, risking possible discrimination at work (Pizer et al., 2012; Tatum, 2018). Regardless of whether or not a person has revealed their sexual orientation at work, "the workplace perspectives of LGB employees are unique compared with heterosexuals, which results from experiences and expectations of discrimination and harassment" (Gacilo et al., 2018; Periard et al., 2018, p. 57), which can affect LGBT employees' perceptions of organizational justice and inclusion. Creating an inclusive workplace for LGBT employees can yield positive work-related outcomes for LGBT and other minority groups, regardless of whether they disclose their minority status.

LGBT Employees' Perceptions of Organizational Justice as Inclusion

Given the research presented above about LGBT experiences in the workforce, we derive the following three hypotheses about LGBT workers' perceptions of organizational justice compared with their non-LGBT counterparts. Considering distributional justice as inclusion through pay and promotions, research has found that LGBT workers are often paid less than their heterosexual counterparts. For example, in a survey of studies on LGBT discrimination in the workplace, findings show that between "10 to 28 percent were denied a promotion or given a negative performance evaluation [and]

10 to 19 percent reported receiving unequal pay or benefits" (Pizer et al., 2012, p. 72). Given this, we expect that an LGBT employee will perceive a lower level of distributive justice as inclusion through pay and promotions compared with a similar heterosexual employee.

> **Hypothesis 1:** LGBT employees will perceive lower levels of distributive justice related to pay and promotions compared to heterosexual employees in federal workplaces.

Regarding procedural justice as inclusion through procedures and policies, LGBT employees who work in organizations with non-discrimination policies and who are covered by non-discrimination policies report higher job satisfaction and have improved relationships with coworkers and supervisors (Badgett et al., 2013; Galupo & Resnick, 2016, p. 273). However, as Galupo and Resnick (2016, p. 273) note, "even with the presence of non-discrimination policies in the workplace, LGBT employees are still at-risk to experience discrimination, particularly in the form of microaggressions, as they may not be covered under conventional non-discrimination policies." Given this, we expect that an LGBT employee will perceive a lower level of procedural justice as inclusion through policies and procedures compared with a similar heterosexual employee. Specifically,

> **Hypothesis 2:** LGBT employees will perceive lower levels of procedural justice related to policies and procedures compared to heterosexual employees in federal workplaces.

Finally, with regard to informational justice as inclusion through information sharing, LGBT workers are often more dissatisfied with their supervisors, peers, and levels of employee empowerment (Lewis & Pitts, 2017). As an example, in a study about microaggressions experienced by LGBT workers, "multiple participants discussed feeling left out or excluded from office events" (Galupo & Resnick, 2016, p. 283). Given this, we expect that an LGBT employee will perceive a lower level of informational justice as inclusion through information sharing compared with a similar heterosexual employee. Specifically,

> **Hypothesis 3:** LGBT employees will perceive lower levels of informational justice related to information sharing compared to heterosexual employees in federal workplaces.

Methodology and Data

Recently, public administration scholars have made greater use of experimental designs to randomly assign individuals into a treatment or a control situation; however, randomization is not always feasible on many occasions due to ethical or practical reasons. For example, *LGBT status* cannot be randomly assigned to individuals in this study. In the absence of experimental design, quasi-experimental methods enable us to create a plausible counterfactual comparison group that resembles the treatment group to estimate a treatment effect by comparing differences in outcomes between two groups. In this study, we use the coarsened exact matching (CEM) method to create a comparison group of heterosexual employees with the most similar observed aspects in terms of demographic and work-related characteristics with those employees who identified themselves as LGBT. Since previous studies have noted that younger and less experienced employees are more likely to disclose their LGBT status (Lewis & Pitts, 2017), and LGBT employees are more likely to be affected by having supportive working environments than heterosexual employees (Jin & Park, 2017; Madera, 2010), we expect that by matching observed characteristics, called matching covariates, between the two groups will reduce potential alternative explanations for our findings between the treatment (*LGBT status*) and non-treatment groups, and outcomes (the three organizational justice measures) (Stuart, 2010).

Data

The data used in this study were sourced from the 2015 Federal Employee Viewpoint Survey (FEVS), which included respondents' sexual orientation identification information. The FEVS is administered by the U.S. Office of Personnel Management (OPM) and was launched in 2002 to promote better understanding of "government employees with the opportunity to candidly share their perceptions of their work experiences, their agencies, and their leaders" (OPM, 2016, p. 2). The OPM began to provide an additional set of FEVS data including the LGBT identification variable in 2012.[2] The 2015 FEVS response rate was 49.7%, as 421,748 of the 848,237 federal employees to whom the OPM sent the surveys responded. Nearly 1/5th of the respondents did not provide their sexual orientation; after removing observations with one or more missing variables, the sample size is 330,414 federal employees.[3]

Outcome variables. Our empirical model includes three outcome variables to measure the three dimensions of organizational justice: *Pay and Promotions* as a measure of distributional justice, *Procedures and Policies* as a measure of procedural justice, and *Information Sharing* as a measure of informational justice. All three variables were measured as an average summated score of three survey items, with the responses ranging from 1 (negative) to 3 (positive). The survey items used in this study to measure the three dimensions of organizational justice were validated in previous studies of organizational justice in federal workplaces (Cho & Sai, 2012; Moon, 2018). To measure distributional justice, we created a score using survey items related to *Pay and Promotions*: "Promotions in my work unit are based on merit," "Pay raises depend on how well employees perform their jobs," and "Awards in my work unit depend on how well employees perform their jobs." The variable *Pay and Promotions* has a mean of 2.15 and a standard deviation of 0.63. Cronbach's alpha is .74. Second, to measure procedural justice, we created a score using survey items related to *Procedures and Policies*: "I can disclose a suspected violation of any law, rule, or regulation without fear of reprisal," "Arbitrary action, personal favoritism, and coercion for partisan political purposes are not tolerated," and "Prohibited personnel practices are not tolerated." This variable has a mean of 2.47 with a standard deviation of 0.65 and Cronbach's alpha is .81. Finally, to measure informational justice, we created a score from survey items related to *Information Sharing*: "Managers communicate the goals and priorities of the organization," "Managers promote communication among different work units," and "How satisfied are you with the information you receive from management on what's going on in your organization?" This variable has a mean of 2.34 with a standard deviation of 0.70 and the Cronbach's alpha is .84.

Treatment variable. The treatment variable is *LGBT Status*. The survey question to capture a respondent's *LGBT Status* was "Do you consider yourself to be one or more of the following?" whereby the employee could select one or more of the following options: "Heterosexual or Straight; Gay, Lesbian, Bisexual, or Transgender; Prefer not to say." In the OPM survey, respondents were initially instructed to identify their specific LGBT status, but the four categories were subsequently restructured into a single category (i.e., LGBT), which is reflected in the dataset. *LGBT status* is coded as a binary variable where 1 indicates *LGBT* (n = 11,094) and 0 indicates *heterosexual* (n = 319,320). Responses of "Prefer not to say" are coded as missing variables.[4]

Matching covariates. In order to ascertain that the main difference in the values of the three measures of organizational justice between the two groups is due to sexual orientation (i.e., *LGBT Status*), individual demographic and work-related variables were adopted as matching covariates. These variables were used to match LGBT employees with heterosexual employees who reported the same values of matching covariates (i.e., demographic and work characteristics). For the individual demographic characteristics, we selected female, racial minority, age group, and years of work experience as matching covariates. The measure for *Female* is treated as a binary variable where 1 refers to *female* and 0 indicates *any other gender identification*. In the sample dataset, before the matching process, 47% of survey respondents identified themselves as female employees. The measure for *Racial minority* is also treated as a binary variable whereby *non-White* ethnicity status was assigned 1 and 0 indicated *White/Caucasian*. In the original data before the matching process, 34% of respondents indicated they were a racial minority. We also created multiple dummy variables to capture one's *Age group* and years of *Work experience*, as the response scales allowed employees to only select from a range. Given the nature of the date, a dummy variable was created for each age range listed on the survey: under 40, 40–49, 50–59, and 60 and over; and the 3 years of work experience ranges were captured via three dummy variables: less than 5 years, 6–14 years, and 15 years or over.

Work-related characteristics used in this study are agency dummies, diversity management, and work engagement to reduce potential bias stemming from different work conditions. First, *Agency* dummy variables enable us to control for agency-specific characteristics that may also influence feelings toward inclusion and organizational justice. For instance, Ragins and Cornwell (2001) found that workplace culture is an important factor in gay individuals' reporting of sexual orientation-based discrimination in their workplaces. Likewise, in a study conducted by Lewis and Pitts (2017), LGBT employees reported that different agencies have different work-related attitudes and cultures. Adding these dummy variables to the model thus allows us to match LGBT employees with heterosexual employees at similar agencies.

Diversity management is included because perceptions of a supervisor's diversity management efforts can influence employees' perceptions of organizational justice and inclusion. For instance, Jin and Park (2017) found that diversity management levels affect work-related outcome levels for all employees, especially those that identify as LGBT. For the measure of *Diversity management*, we adopted a summated rating of three survey items: "Policies and programs promote diversity in the workplace," "My supervisor is committed to a workforce representative of all segments of society," and "Supervisors work well with employees of different backgrounds." These survey items were validated in four previous studies (Choi & Rainey, 2010; Fernandez et al., 2015; Jin & Park, 2017; Moon, 2018). Cronbach's alpha is .74 with a mean of 7.68 and a standard deviation of 1.8.

Finally, we included work engagement as empirical evidence indicating that LGBT employees are less likely to engage in working environments, which leads to less satisfaction with their job and work conditions than non-LGBT employees (Jin & Park, 2017). Five survey items were used to capture respondents' *Work engagement*: "My talents are used well in the workplace," "The people I work with cooperate to get the job done," "I know how my work relates to the agency's goals and priorities," "I am held accountable for achieving results," and "I am constantly looking ways to do my job better." Cronbach's alpha for these items is .65 with a mean of 13.5 and a standard deviation of 1.95.

Matching Strategy: CEM

The basic mechanism of CEM is to reduce the levels of imbalance in terms of matching covariates between treated and untreated units. CEM is particularly useful compared with other matching strategies when there is a large imbalance between the treated and untreated units because of its consistent and reliable matching results (King et al., 2011; King & Nielsen, 2019). To reduce imbalance levels, CEM first sorts all observations into multiple strata so that each stratum has specific values of matching covariates. Each treated unit is randomly assigned to an untreated unit with the same values of matching covariates (Iacus et al., 2012). In cases where there was no match between treated and untreated units, untreated units are discarded. Thus, CEM works best when the number of untreated units is relatively larger than the number of treated units, which is consistent with our case—our sample has 11,094 LGBT employees and 319,320 heterosexual employees. These reiterative processes are used to reduce the levels of imbalance to eventually create a group of untreated (i.e., heterosexual employees) units whose matching covariates are the same as the treated (i.e., LGBT employees) units. Since treated and untreated units were randomly matched by their covariate characteristics during the matching process, CEM does not require testing of balance results like other matching methods, which is another advantage of using CEM over other matching methods (Iacus et al., 2012). Due to CEM's comparative abilities, such as its applicability for large imbalances and unevenness between treated and untreated units, CEM is now being used as one type of quasi-experimental method in public administration research (see, Yu & Lee, 2019).

We computed the CEM (i.e., one-on-one matching) using STATA15 to determine the level of imbalance. Before conducting the matching process, CEM enables us to estimate a global imbalance, which identifies the absolute differences across all matching covariates between the treated and untreated units, where $L_1 = 1$ indicates perfect imbalance and $L_1 = 0$ denotes perfect balance. The global imbalance before the matching process was 0.656, which would signal the presence of a sizable imbalance between treatment and comparison units without the matching process (see Appendix A). The univariate imbalance also refers to the imbalance levels of each covariate separately. For example, the imbalance level of minority status between treated and untreated units is 0.071.

As can be seen in Appendix B, after completing this matching, the global measure of imbalance was $L_1 = 0$, indicating a perfect balance between the treated and untreated units in terms of matching covariates; the univariate measure of imbalance for each variable following the application of the CEM was 0 as well. These results indicate that the imbalance in matching covariates between the two groups was eliminated, whereby a comparison group comprising heterosexual employees shared the exact same values in matching covariates with the LGBT employees.

The Matched Sample After CEM

Using CEM, we found near-perfect matches for 96% of the LGBT employee respondents; 10,667 heterosexual employees (out of the full 319,320 samples) were matched with 10,667 LGBT employees (out of the full 11,094 LGBT subsample). Our final sample size is now 21,334, and their demographic and work-related characteristics describe the characteristics of LGBT federal employees after the matching process. There are a few differences that should be noted between the full sample and the sample after matching. Employees in the matched sample are younger and have less work experience in federal agencies, likely because the LGBT employees that disclosed their status are younger and less experienced (Lewis & Pitts, 2017).

We also found after matching that the percentage of female employees and non-White employees in the sample declined from 47% to 43% and 34% to 28%, respectively. A decline in the percentages of female and non-White employees may suggest that employees who already have visible minority status (e.g., race or gender) in the workplace may hesitate to disclose their invisible minority status, even on an anonymous survey. "Double minority" respondents may be tentative to disclose due to having experienced discrimination as a result of belonging to another, visible minority group (Gacilo et al., 2018). In other words, the CEM method produces a sample of comparable LGBT and heterosexual employees that are as a whole younger, less experienced, and more likely to be White and male than the full sample used in correlational analyses

Table 1. Summary Statistics After Matching Process.

Variable	*M*	*SD*	Minimum	Maximum
Outcome variables				
Pay and promotions	2.10	0.65	1	3
Procedures and policies	2.41	0.68	1	3
Informational sharing	2.26	0.73	1	3
Treatment variable				
LGBT (1 = yes; 0 = no)	0.5	0.5	0	1
Matching covariates				
Female (1 = yes; 0 = no)	0.43	0.49	0	1
Minority (1 = yes; 0 = no)	0.28	0.44	0	1
Age group				
Under 40 (1 = yes; 0 = no)	0.28	0.45	0	1
40–49 (1 = yes; 0 = no)	0.26	0.44	0	1
50–59 (1 = yes; 0 = no)	0.33	0.47	0	1
60 or older (1 = yes; 0 = no)	0.08	0.28	0	1
Federal tenure				
5 or fewer years (1 = yes; 0 = no)	0.23	0.42	0	1
6–14 years (1 = yes; 0 = no)	0.38	0.48	0	1
15 or more years (1 = yes; 0 = no)	0.38	0.48	0	1
Diversity management	7.45	1.81	3	9
Work engagement	13.28	2.10	5	15

Note. Sample size = 21,334. Agency dummies (28 federal agencies) are not listed. LGBT = lesbian, gay, bisexual, transgender.

in other studies (e.g., Lewis & Pitts, 2017; Sabharwal et al., 2019). Table 1 presents the summary statistics of the sample after the matching process.

Empirical Results

The empirical analyses comparing differences in our three measures of organizational justice (i.e., *Pay and Promotions, Procedures and Policies*, and *Information Sharing*) compared with their heterosexual counterparts are presented in Table 2.

After matching covariates between the two groups, we find that while LGBT employees have lower perceptions of *Pay and Promotions* than similar heterosexual employees, the difference is not statistically significant. Thus, we do not find support for Hypothesis 1; LGBT employees do *not* perceive lower levels of distributive justice as inclusion through pay and promotions compared to similar heterosexual employees. This is counter to the findings of similar correlational studies (e.g., Lewis & Pitts, 2017; Sabharwal et al., 2019).

In terms of *Procedures and Policies*, employees who identified themselves as LGBT tended to report lower perceptions of procedural justice by 0.027 units relative to their heterosexual counterparts, which is a statistically significant difference ($p < .01$). This

Table 2. Differences in Perceptions of Organizational Justice Between LGBT and Non-LGBT Employees.

	Organizational justice		
Treatment variable	Pay and promotions	Procedures and policies	Information sharing
LGBT (1 = yes; 0 = no)	−0.014 (0.009)	−0.027** (0.010)	−0.041*** (0.010)

Note. Two-sided hypotheses tests are conducted. Standard error in parenthesis. LGBT = lesbian, gay, bisexual, transgender.
*$p < .05$. **$p < .01$. ***$p < .001$.

result indicates that, considering no difference in terms of observed characteristics between the two groups, LGBT employees reported lower levels of procedural justice as inclusion than heterosexual employees, providing support for Hypothesis 2. Finally, LGBT employees have lower perceptions of informational justice as inclusion through *Information Sharing*, compared to their non-LGBT counterparts by 0.041 units, which is a statistically significant difference ($p < .001$), providing support for Hypothesis 3.

Overall, we find support for two of our three hypotheses; LGBT employees perceive lower levels of procedural and informational justice. Unexpectedly, our empirical results indicate that differences in perceptions of organizational justice between LGBT and heterosexual employees are not statistically significant for distributional justice in terms of *Pay and Promotions*. This makes sense given that two dimensions of organizational justice, namely, *Procedures and Policies* and *Information Sharing*, have been noted by other researchers to be more informal, and thus hard to prove when discrimination has occurred in the workplace. For example, three survey items used to capture *Procedures and Policies* measure the personal belief that an employee will be protected by their agency if they disclose the wrongful behaviors of others. Although it is mandated by law to protect whistle-blowers, employees hesitate to disclose sensitive information, especially if they have perceived unfairness due to their minority status in the workplace. Similarly, it is relatively easy for managers or employees to treat employees inequitably in subtle ways, such as through limited information sharing or poor communication styles. For instance, our three survey items used to capture *Information Sharing* asked respondents if their manager communicates well with employees in terms of information related to work and organization. It is difficult to prove discrimination either by not sharing information at all, or in the amount of information that is shared.

Discussion

Following our examination of the perceived inclusion of LGBT employees after being granted federally protected status using the CEM method, we find that our results diverge somewhat from similar research on LGBT employee perceptions in the federal workplace. Specifically, we find that LGBT employees do not perceive unfair treatment in distributional outcomes based on merit and performance appraisal; that is, *LGBT status* does not affect perceptions of distributional justice. In other words, the personnel system is perceived similarly in terms of fairness by LGBT and non-LGBT employees. This finding is contrary to the rest of the literature. However, in concordance with the literature, we find that LGBT employees do perceive unfair treatment in regard to procedures and policies (procedural justice) and information sharing (informational justice).

These findings can be explained by differences in formal and informal discrimination methods (Croteau, 1996; Levine & Leonard, 1984; McFadden, 2015). Formal discrimination refers to institutionalized actions related to public personnel systems, such as hiring, firing, promotion, pay, and human resource benefits, while informal discrimination occurs via unofficial, hidden actions related to interpersonal relations in workplaces, such as verbal and nonverbal harassment, exclusion, and disrespect from supervisors and colleagues (Levine & Leonard, 1984). In the U.S. federal government, court decisions, executive orders, and administrative actions regarding federal workplaces have mainly focused on prohibiting such formal sexual orientation-based discrimination. Our findings suggest that these formal mechanisms to reduce sexual orientation-based discrimination may be effective as we found no significant differences in the perceived fairness of Pay and Performance between LGBT and non-LGBT employees.

Informal discrimination is harder to address, and formal mechanisms can only do so much when hidden discrimination may be present in the workplace. As Sabharwal and colleagues (2019) suggest, providing necessary resources cannot be enough to make employees feel perceived inclusion, because "preventing the harassment of LGB employees goes beyond simply having policies in place, unless organizations take measures to enforce and uphold, they will have little to no impact on the treatment of LGB employees" (Pickern & Costakis, 2017, p. 76). Thus, in addition to formal policies and mechanisms to prevent discrimination, managerial efforts should focus on ways to create inclusive workplaces where LGBT employees do not have to fear hidden discrimination.

Moreover, the results of procedural and informational justice can be explained by a problem of information asymmetry between a supervisor or manager and their employees. Employees may perceive injustice if one's supervisor does not share with employees the process or appropriate information they used to make decisions (Lubatki et al., 2007; Skarlicki & Folger, 1997). Thus, employees may perceive increased levels of injustice in terms of processes and information sharing not only because of unfair treatment they received compared with other employees but also because of unclear, vague information they received from their supervisor.

To address both of these issues, managers can engage in high performance or high involvement work practices (HPWPs) related to information sharing, relationship building, and mentoring. Specifically, HPWPs associated with employee engagement offers employees "meaningful ways or opportunities to participate and feel included in their organizations, including information sharing, participation in teams, involvement in decision-making, and other empowerment or engagement practices" (Johansen & Sowa, 2019, p. 550). HPWPs like employee engagement can be used to not only improve overall organizational performance but these practices can also potentially minimize differences in perceptions of inclusion and organizational justice across diverse groups.

Employee engagement can improve perceptions of organizational justice as inclusion in several ways. One way is that by asking for and valuing the opinion of an employee, other employees are more likely to consider that person a valuable member of the group. In addition to signaling to others in the organization that an employee or group of employees is part of "the group," a manager also signals to the individual that they are valued, which makes the individual feel included in the organization. Moreover, managerial efforts to involve employees in decision making encourage mutual trust, which also improves perceptions of organizational justice (Brimhall et al., 2017).

Relatedly, quality mentoring can have a positive influence on perceptions of organizational justice (Brimhall et al., 2017; Soni, 2000; Tremblay et al., 2010). Mentoring is associated with providing job-related and developmental feedback, information sharing, and access to informal social networks. Poor mentoring, or a lack of mentoring, can enforce perceptions of discrimination. Indeed, Soni's (2000) case study of a federal agency found that the majority of employees in all minority groups believed that supervisors needed training in the mentoring process. Procedures for mentoring, and training public administrators to engage in quality mentoring, is one way that perceptions of procedural and informational justice can be improved. In sum, employee engagement practices show employees that the organization values their opinions and can signal a commitment by the manager to treat individuals fairly, thereby increasing perceptions of procedural and informational justice.

Although our empirical findings have meaningful implications for diversity management practice, we must be cautious in interpreting our results. First, we acknowledge the possibility that not all LGBT employees disclosed their sexual orientation in the survey dataset, or at work. Although the FEVS is conducted anonymously, the survey respondents may have been reluctant to report personal sexual orientation out of fear of potential discrimination (Mallory & Sears, 2014). Moreover, studies have suggested that LGBT employees who disclose their sexual orientation at work are more likely to report higher levels of justice and fairness than LGBT employees who choose not to disclose their sexual orientation at work (Day & Schoenrade, 1997; Griffith & Hebl, 2002). Indeed, research suggests that employees who choose not to disclose their sexual orientation may already note the presence of workplace discrimination (Ragins & Cornwell, 2001). On the contrary, employees who work for inclusive organizations are less likely to feel that they need to hide their minority status and are more likely to disclose their sexual orientation (Pickern & Costakis, 2017, p. 75). Given this, the size of our coefficients would likely change if we were able to take into account those who did not disclose their LGBT status on the survey or at work.

Second, both age and work experience were measured as ranges. In other words, LGBT and heterosexual employees were matched by age range and range of years of work experience, not exact age and years of work experience. As a result, our empirical results need to be interpreted cautiously, as our findings regarding pay and promotions could differ if we were to use instead the exact years of age or work experience in the matching process. We expect that future research will be able to collect more accurate measures of LGBT status and matching covariates to test the effect of LGBT status on perceptions of organizational justice.

We also have two suggestions for future research. First, to better understand sexual orientation-based discrimination and its consequences on work-related attitudes, researchers must undertake additional investigations of sexual orientation disclosure in the workplace. Unlike other, visible, minority groups, invisible groups have the added complexity of deciding if and when to disclose their invisible minority status. As sexual orientation is an invisible personal trait, individuals may not experience discrimination unless they disclose their sexual orientation, but they may still feel exhausted and dissatisfied by the fact that they have to hide their sexual orientation (Ragins & Cornwell, 2001). Second, transgender employees may perceive different justice levels than LGB employees. Studies have shown that transgender employees have historically suffered from even more pervasive biases and discrimination as well as difficulties in sexual identification and categorization in the workplace (Elias, 2017; Taylor, 2007). We suggest that future research devote special attention to the work-related attitudes and experiences of transgender employees.

Conclusion

There has been a long history of discrimination of LGBT employees, and only after over 40 years of small steps to eliminate federal discriminatory policies were sexual orientation and gender identity finally named as federally protected classes in the United States in 2014 (Gates & Saunders, 2016; Lewis & Pitts, 2017). Despite a series of efforts to eliminate sexual orientation-based discrimination in the U.S. federal government, we remain unsure about the consequences of certain efforts. In this study, we apply the organizational justice framework to LGBT research by looking at differences between LGBT employees' perceived levels of fairness, or inclusion, and heterosexual employees' perceived levels of fairness. However, whether our findings indicate that the glass is half full or still half empty remains an open question. At the very least, the results of our study indicate that LGBT employees do not perceive discrimination in the context of distributional justice. This may be a product of recent efforts against sexual orientation-based discrimination. Furthermore, this implies that formal mechanisms to encourage inclusion can be effective for newly protected minority groups, whether that group is visible or not.

At the same time, however, these findings could be interpreted as indicating that the glass is still half empty. LGBT employees continue to perceive discrimination in both the procedural and informational justice contexts; they feel that procedures and communications within workplaces are unfair for LGBT employees. HPWPs that encourage employee engagement may address perceived discrimination in these areas. Research on diversity management practices for inclusion that focuses on the subtle and covert microaggressions and discrimination that employees may experience is sorely needed if we are to achieve a truly equitable and representative bureaucracy.

Appendix A. Imbalance Levels Between Treated and Untreated Units Before Matching With LGBT Status.

	0.656						
Multivariate L1 distance:	L1	*M*	Minimum	25%	50%	75%	Maximum
Diversity management	0.053	−0.241	0	−1	0	0	0
Work engagement	0.063	−0.298	0	−1	−1	0	0
Supervisory status	0.007	0.007	0	0	0	0	0
Female	0.044	−0.044	0	0	0	0	0
Minority status	0.071	−0.071	0	0	0	0	0
Age: Under 40	0.074	0.074	0	0	0	1	0
Age: 40–49	0.013	0.013	0	0	0	0	0
Age: 50–59	0.021	−0.021	0	0	0	0	0
Age: 60 or older	0.066	−0.066	0	0	0	0	0
Federal tenure: 5 or fewer years	0.035	0.035	0	0	0	0	0
Federal tenure: 6–14 years	0.024	0.024	0	0	0	0	0
Federal tenure: 15 or more years	0.061	−0.061	0	0	0	0	0

Note. This imbalance check used all observations (n = 330,414). 28 agency dummies were included in matching process. LGBT = lesbian, gay, bisexual, transgender.

Appendix B. Imbalance Levels Between Treated and Untreated Units After Matching With LGBT Status.

	0.000						
Multivariate L1 distance:	L1	*M*	Minimum	25%	50%	75%	Maximum
Diversity management	0.000	0.000	0	0	0	0	0
Work engagement	0.000	0.000	0	0	0	0	0
Supervisory status	0.000	0.000	0	0	0	0	0
Female	0.000	0.000	0	0	0	0	0
Minority status	0.000	0.000	0	0	0	0	0
Age: under 40	0.000	0.000	0	0	0	0	0
Age: 40–49	0.000	0.000	0	0	0	0	0
Age: 50–59	0.000	0.000	0	0	0	0	0
Age: 60 or older	0.000	0.000	0	0	0	0	0
Federal tenure: 5 or fewer years	0.000	0.000	0	0	0	0	0
Federal tenure: 6–14 years	0.000	0.000	0	0	0	0	0
Federal tenure: 15 or more years	0.000	0.000	0	0	0	0	0

Note. This imbalance check used only matched observations (n = 21,334). 28 agency dummies were included in matching process. LGBT = lesbian, gay, bisexual, transgender.

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Notes

1. Croteau (1996), Gacilo et al. (2018), Periard et al. (2018), and Pickern and Costakis (2017) focus only on LGB individuals. Quotations and references to their work denote "LGB" employees rather than "LGBT" employees.
2. In this survey, some demographic variables were restricted, and all responses were recoded to a 3-point Likert-type scale ranging from 1 (*negative*), through 2 (*neutral*), to 3 (*positive*), from a 5-point Likert-type scale anchored at 1 (*strongly disagree*) and 5 (*strongly agree*).
3. We found no meaningful differences between the observations with and without missing data.
4. While respondents may respond that they are LGBT, this does not mean that they have disclosed their LGBT status at work or to their supervisor.

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