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Auditing: A Journal of Practice & Theory
Vol. 40, No. 2
May 2021

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AUDITING: A JOURNAL OF PRACTICE & THEORY
Vol. 40, No. 2
May 2021
pp. 161–192

American Accounting Association
DOI: 10.2308/AJPT-18-029

Employee Satisfaction and Work-Life Balance in Accounting Firms and Audit Quality

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SUMMARY: The PCAOB's audit-quality framework posits that superior inputs are essential for achieving high audit quality, and these inputs depend on the accounting firm's ability to recruit and retain quality personnel. However, the link between these inputs and audit quality has gone largely unexplored. We use employees' reviews of accounting firm employers from Glassdoor.com to examine perceptions of these inputs, and test whether accounting firms' internal characteristics explain employee satisfaction and audit quality. Our descriptive evidence suggests that "career opportunities," "senior management," and "culture and values" play a more important role in employees' satisfaction than do "compensation and benefits" or "work-life balance." Although work-life balance is not among the most important factors that are associated with audit employees' job satisfaction, better work-life balance is nonetheless associated with higher audit quality. However, we do not find a significant association between audit-employees' job satisfaction and audit quality.

Keywords: audit quality indicators; auditor work-life balance; audit quality framework; firm culture; Glassdoor.com.

I. INTRODUCTION

Policy discussions of the determinants of audit quality focus on the role of input and output factors (IAASB 2014; PCAOB 2015). Some of the most unobservable input factors are those driven by auditors' overall perceptions of their employer, such as the quality of senior management (tone at the top) and—a much-debated component of accounting-firm employee satisfaction—the work-life balance on the job (PCAOB 2013, 2014). Yet, such internal audit firm characteristics and their link to audit quality have been largely unexplored by accounting researchers due to a lack of data. We use a unique dataset that allows us to explore this link. We obtain crowd-sourced employee reviews from Glassdoor.com (hereafter, Glassdoor), a jobs and recruiting site. The reviews, which cover nearly 140 accounting firms from 2008 to 2016, contain five-star scale ratings of employees' overall assessment of their employers, as well as assessments of five specific characteristics: career opportunities, compensation and benefits, work-life balance, senior management, and culture and values.[1]

We are grateful for the helpful comments and suggestions provided by two anonymous reviewers, Linda A. Myers (editor), Tom Adams, Hilal Atasoy, Sudipta Basu, Dmitri Byzalov, Yufan Dong, Neil Fargher (discussant), Nathan Goldman (discussant), Jayanthi Krishnan, Ivy Lee, Yi Liang, Xinjie Ma, Steve Maex, Matt MacNaughton, Ehi Rajsky, Barbara Su, Colin Tipton, Wei Wang, participants at the 2018 AAA Auditing Section Midyear Meeting, 2018 AAA Annual Meeting, and workshop participants at Temple University. We thank Glassdoor.com for providing the data and Lev Verkhovsky and Shuting (Ada) Wang for their outstanding research assistance. Jagan Krishnan acknowledges research support from Temple University Fox School's Merves Research Fellowship. Joshua Khavis acknowledges financial support from the University at Buffalo, SUNY.

An earlier version of the paper was circulated under the title "Accounting Firms' Internal Characteristics and Audit Quality."

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Editor's note: Accepted by Linda A. Myers, under the Senior Editorship of Christopher P. Agoglia.

Submitted: February 2018
Accepted: November 2020
Published Online: December 2020

[1] Recent studies have used employee reviews of their employers on Glassdoor to explore outcomes unrelated to audit firms: employee satisfaction and corporate performance (Huang, Li, Meschke, and Guthrie 2015), future corporate disclosures (Hales, Moon, and Swenson 2018), financial constraints (Jing, Keasey, Lim, and Xu 2019), stock returns (Green, Huang, Wen, and Zhou 2019), analysts' performance and career advancement (Hope, Li, Lin, and Rabier 2020), and tax avoidance and employee perceptions (Lee, Ng, Shevlin, and Venkat 2020). As we discuss later, Huang, Masli, Meschke, and Guthrie (2017) examine the association between client employee satisfaction and audit effort.

We present two sets of analyses in this study. First, we examine how accounting-firm employees in general perceive their employers, as proxied by their overall rating of their employers, and what employer characteristics best explain employees' overall job satisfaction. Audit quality is the outcome of the engagement team's work, which in turn is driven by several firm characteristics, such as, "tone at the top, the incentive system, recruiting, retention, [and] training" (PCAOB 2015).[2] However, large accounting firms find recruiting and retaining qualified audit staff for the engagements to be a continuous challenge (AICPA 2011, 2014; Hermanson, Houston, Stefaniak, and Wilkins 2016). Because employee satisfaction plays an important role in overcoming this challenge, we first study how perceptions of accounting-firm characteristics vary across employee types and how they are associated with employees' overall satisfaction with their employers. We use Glassdoor ratings to capture employees' perceptions of accounting-firm characteristics. Although the Glassdoor data are not free from limitations, they help us assemble descriptive evidence based on a large sample of responses provided by CPA firm employees. A further advantage of the Glassdoor data are that the responses come from "rank and file employees," and therefore contain "private or qualitative information about the working condition for employees or of employee mood" (Teoh 2018, 114).

Second, we examine the link between *audit* employees' job satisfaction and audit quality. Based on prior studies that view employees as a key asset of the firm (e.g., Carlin and Gervais 2009; Zingales 2000), we expect to observe such a link documenting that positive perceptions of their employers are associated with increased employee productivity and better firm performance (Harter, Schmidt, and Hayes 2002; Whitman, van Rooy, and Viswesvaran 2010; Edmans 2011; 2012; Huang et al. 2015). As an important part of this second analysis, we examine specifically the link between audit employees' perceptions about work-life balance and audit quality. Using the employee-level Glassdoor ratings, we build auditor-level summary measures of overall job satisfaction and work-life balance for audit employees using principal components analysis. We use discretionary accruals, financial restatements, and going concern opinions to proxy for audit quality.[3]

For our first analyses, we document the following findings. First, accounting-firm employees' job satisfaction is more strongly associated with "career opportunities," "senior management," and "culture and values," characteristics that generally require steadfast commitment and investment by the accounting firm for improvement, than with "work-life balance" or "compensation and benefits," characteristics that appear more easily adjustable. Second, employees consistently rate the Big 4 higher than non-Big 4 employers. Third, *audit* personnel rate career opportunities higher and work-life balance and compensation and benefits lower than do other professionals at the accounting firm. These findings provide some insight into how accounting firms can best allocate resources to recruit and retain quality personnel and may also be of interest to students eyeing the public accounting profession. For our second analyses, we find that the work-life balance of audit employees is positively associated with audit quality for clients. However, we do not find a significant association between audit-employees' overall job satisfaction and audit quality. These results hold in several additional tests.

Our study adds to the ongoing discussions about audit quality by providing new insight into audit quality drivers. Francis (2011, 138) notes that "research on the relation between accounting firms and audit quality is severely limited by the availability of data on characteristics of accounting firms. To date, research on this topic has relied on variables that can be constructed from public disclosures such as client-based measures of industry expertise or office size."[4] Our unique crowdsourced dataset allows us to provide a first large-sample glimpse into the connection between employee-level perceptions of satisfaction and work-life balance at accounting firms and audit quality.

Our study is relevant to the profession. Audit firm characteristics are widely considered instrumental in attracting and retaining new employees. Consequently, an audit firm's ability to recruit and retain top talent is perceived as an important determinant of audit quality (PCAOB 2013; 2015). Persellin, Schmidt, Vandervelde, and Wilkins (2019) report that both regulators and audit employees are concerned that long working hours at audit firms may negatively affect audit quality. We provide some insight into factors that are associated with employee satisfaction at the accounting firm and empirically test for the relationships between audit quality and both employee job satisfaction and work-life balance perceptions.

We acknowledge that our study is, in part, descriptive in nature. We argue that such in-depth descriptive research is important, as Gow, Larcker, and Reiss (2016) point out, to "deepen our knowledge of the behavior and institutions

[2] In a recent concept release, the PCAOB seeks comments on 28 potential quantitative measures that may indicate audit quality (PCAOB 2015). The proposed audit quality indicators (AQIs) are grouped into three categories: audit professionals, audit process, and audit results. The "audit professionals" category includes indicators pertaining to the engagement team. The "audit process" category includes measures such as "tone at the top and leadership," and "audit results" includes such indicators as "financial statements" and "going concern."

[3] We estimate discretionary accruals models via OLS, and restatements and going concern opinions models via logit.

[4] Similarly, DeFond and Zhang (2014, 304) state that "we currently know little about basic characteristics of audit firms such as . . . audit quality control systems, compensation schemes, or audit technology."

[accounting-firm employees and their output]" that researchers seek to explore. We also acknowledge imperfections in our data. The Glassdoor reviews suffer from selection bias because Glassdoor users self-select to visit the website and access job-related information possibly because they are dissatisfied with their jobs.[5] Thus, our distribution of ratings may not be representative of the general population of employees. We are unable to incorporate this self-selection bias into our empirical model because there are no data on employees who do not provide online reviews. However, despite this selection issue, our results are nonetheless interesting because they show how the *variation* in perceptions of the employer within this self-selected group is associated with audit quality. Further, to the extent that the reviewers are more likely to be dissatisfied with their current jobs than employees not providing reviews, they may also be most likely to negatively affect audit quality.

II. BACKGROUND AND HYPOTHESES DEVELOPMENT

Factors Associated with Audit Employees' Job Satisfaction

Finding and retaining qualified audit staff poses serious concerns for large accounting firms (AICPA 2011, 2014; Hermanson et al. 2016). Employee dissatisfaction with long hours and uncompetitive compensation packages is often cited as a driver of high employee-turnover rates, sometimes as high as 30 percent, at large accounting firms (AICPA 2004, 2011). In particular, work-life balance has been an issue for audit employees (López and Peters 2012; Bills, Swanquist, and Whited 2016; Hermanson et al. 2016).[6] Based on interviews of 18 auditors (eight of which were partners), Hermanson et al. (2016) identify long hours as a negative aspect of auditing careers. Using survey responses from 700 audit professionals, Persellin et al. (2019) find that high audit workloads negatively impact auditors' job satisfaction and excitement about an auditing career.

Despite some anecdotal evidence of attempts by accounting firms to adjust workloads, the efficacy of such arrangements is not clear. Some studies suggest that the Big 4 offer alternative work arrangements more in form than in substance, as they do not provide enough organizational support for such arrangements (Johnson, Lowe, and Reckers 2008; Kornberger, Carter, and Ross-Smith 2010). Some Big 4 employees question the ability to use alternative work arrangements and remain effective at their jobs (Buchheit, Dalton, Harp, and Hollingsworth 2016). Anecdotal evidence also suggests that regional accounting firms capitalize on this negative sentiment and lure talent away from the Big 4 by offering a better work-life balance.[7]

Despite the work-life balance issues reported in survey studies (conducted at single points in time), it is not clear how overall job satisfaction is affected by low work-life balance. Other aspects of the working environment (e.g., greater opportunities to advance career) may contribute to high satisfaction levels that outweigh work-life balance considerations (Dalton, Buchheit, and McMillan 2014).[8] Studies suggest that staff accountants may be willing to endure long working hours at the beginning of their careers in order to gain public accounting experience (Hermanson et al. 2016) and that auditors are more likely than tax specialists to trade off stable daily schedules for better future career opportunities (Dalton et al. 2014). The Glassdoor data (described below) allow us to explore the relative role of work-life balance and other characteristics that are associated with overall job satisfaction at the accounting firm.

Auditors' Job Satisfaction, Work-Life Balance, and Audit Quality

Human relations and social psychology theories support the common belief that happier people are more productive people. Human relations theories (e.g., Maslow 1943; Herzberg, Mausner, and Snyderman 1959; McGregor 1960) view employees as key assets capable of creating substantial value for the firm by building client relationships. These theories argue that satisfaction improves employee motivation, thereby benefiting the firm. Indeed, Petty, McGee, and Cavender (1984) provide evidence that overall job satisfaction directly relates to employee performance. Social psychology theories suggest that

[5] However, such bias is likely to be systematic across our sample of accounting firms.

[6] Comments such as "there is no work-life balance" and "if you don't mind a 90% work 10% life, this is the place for you" are rife in Big 4 reviews found on Glassdoor. Hermanson et al. (2016) provide similar examples: "So you're working on average 60 hours [per week], and then ... you get to January ... we worked at least 90 hours [per week]. I remember [one week] submitting my timesheet and having 128 hours."

[7] Regional firms often include testimonies of recent hires from the Big 4 into their recruitment materials to call attention to the lack of work-life balance at the large audit firms. For example, see: http://www.kmco.com/careers-blog/my-experience-at-a-big-four-firm-vs-a-regional-firm/.

[8] Anecdotal evidence suggests that public accounting firms emphasize factors other than work-life balance and compensation. For example, PwC emphasizes that it provides "world-class career development opportunities and the chance to work with some of the world's premier organizations" (PWC 2017). Studies in more general settings also suggest that some intangible job aspects may be more important to employees than compensation. Chamberlain (2017) finds that "across all income levels, the top predictor of workplace satisfaction is not pay: It is the culture and values of the organization, followed closely by the quality of senior leadership and the career opportunities at the company . . . compensation and benefits were consistently rated among the least important factors of workplace happiness." Korn Ferry (2017) concludes, based on a study of 1,200 professionals from around the world, that "nearly two-thirds of respondents (63 percent) said they would prefer to get a promotion with no salary increase than a salary increase with no promotion."

human attitudes are linked to behavior, and numerous studies find that overall job satisfaction is linked to job performance (Iaffaldano and Muchinsky 1985; Judge, Thoresen, Bono, and Patton 2001).

Bowling (2007) offers an alternative explanation for the observed association between employee satisfaction and performance, arguing that it might not reflect a causal relationship, but rather results from "both satisfaction and performance sharing similar causes." Factors such as role ambiguity (Brown and Peterson 1993), trust in management (Rich 1997), and employee self-esteem (Gardner and Pierce 1998) might engender a (spurious) association between satisfaction and performance. Using a meta-analytic approach, Bowling (2007) documents that the relationship between satisfaction and performance is "partially eliminated after controlling for either general personality traits . . . or for work locus of control and . . . [is] almost completely eliminated after controlling for organization-based self-esteem."

Prior studies also document, in non-audit settings, a link between employee satisfaction and firm performance. Edmans (2011) finds a positive association between employee satisfaction and long-run stock returns, and Huang et al. (2015) document, using Glassdoor data, that employee satisfaction predicts firm performance as measured by Tobin's q and return on assets. Oswald, Proto, and Sgroi (2015), using an experimental setting, find evidence consistent with happiness resulting in increased productivity.

Correspondingly, we expect that greater employee satisfaction at accounting firms will translate into better performance, as measured by the audit quality outputs for the firm.[9] Thus, we state the following hypothesis:

H1: Audit-employee satisfaction is positively related to audit quality.

Employees experiencing low levels of work-life balance often have lower levels of job satisfaction and organizational commitment (Kossek and Ozeki 1998; Burke and Greenglass 1999). Lower work-life balance for employees has also been shown to be associated with increased stress and burnout (Kinnunen and Mauno 1998; Anderson, Coffey, and Byerly 2002), lack of concentration, low alertness, and cognitive difficulties such as staying awake (MacEwen and Barling 1994), and reduced levels of energy and general health (Frone, Russell, and Barnes 1996). Konrad and Mangel (2000) find that the relationship between work-life programs and firm productivity is strongest in organizations whose workforce is predominantly composed of professionals. These findings are relevant to public accounting firms and to audit professionals, who are often expected to work overtime (Sweeney and Summers 2002; Padgett, Gjerde, Hughes, and Born 2005). Given this environment, major audit stakeholders and regulatory bodies are concerned about audit-industry workloads and their potentially deleterious effects on audit quality. In an address to students eyeing the audit profession, Jay Hansen (PCAOB board member at the time) questions whether "the firms are doing enough to monitor excessive workloads and take appropriate real-time measures to ensure both the quality of work being done as well as the toll it takes on the lives of those involved" (PCAOB 2014).

A recent auditor survey finds that auditors at large accounting firms are overworked, working on average several hours above the threshold at which the auditors themselves perceive audit quality to start deteriorating (Persellin et al. 2019). Even though accounting firms must adhere to internal quality-control procedures that comply with the AICPA's quality-control standards (AICPA 1997) as well as with the PCAOB's quality-control standards for public-company audits (AICPA 2015), high workloads may lead to compromised audit procedures and impair auditors' judgements (Persellin et al. 2019), resulting in decreased audit quality. We pose the following hypothesis:

H2: Audit-employee work-life balance is positively related to audit quality.

III. DATA, EMPIRICAL DESIGN, AND RESULTS

Glassdoor.com Data

Glassdoor.com, a leading career website, crowdsources firm-specific reviews from current and former employees. We obtain 22,046 employee reviews of U.S. accounting firms submitted to Glassdoor.com from January 2008 to March 2016. After eliminating reviews with missing ratings, our final employee-ratings sample consists of 19,673 reviews submitted by individual employees of 137 accounting firms (Table 1, Panel A). In addition to the ratings (discussed below), we obtain information about employers (i.e., the identity of the accounting firm), job type (audit, tax, other), job title (manager or not), job status (full-time employee or not), gender, and time of submission of the review (busy season or not). The extent of disclosure differs across these dimensions.

[9] Huang et al. (2017) find that *client firms* whose employees provide lower Glassdoor ratings are associated with higher audit risk assessment by their auditors, as reflected in higher audit fees and audit lags, and a higher likelihood of receiving a going concern opinion. In supplementary tests, we control for client firms' employee satisfaction.

TABLE 1
Employee Ratings

Panel A: Sample Selection

	Observations
Initial Sample (Glassdoor.com Employee Reviews, January 2008–March 2016)	22,046
Less:	
Missing five-star ratings (i.e., *CareerOpps, WorkLife, CompBenefits, SrManagement*)	(2,373)
Final Sample (137 unique accounting firms)	19,673

Panel B: Ratings Observations by Year

Year	n	% of Total	Big 4	Non-Big 4	Audit	Tax
2008	1,196	6.10%	86.60%	13.40%	28.30%	15.20%
2009	1,170	5.90%	86.70%	13.30%	19.80%	8.00%
2010	1,137	5.80%	80.60%	19.40%	16.00%	7.40%
2011	841	4.30%	77.50%	22.50%	13.80%	7.10%
2012	1,315	6.70%	78.90%	21.10%	18.60%	9.40%
2013	2,450	12.50%	76.00%	24.00%	15.20%	8.00%
2014	3,890	19.80%	73.80%	26.20%	17.80%	8.40%
2015	6,361	32.30%	74.20%	25.80%	12.40%	5.50%
2016	1,313	6.70%	74.30%	25.70%	10.30%	4.60%
Total	19,673	100.00%	76.70%	23.30%	15.80%	7.50%

Panel C: Summary Statistics for Ratings

Rating	Mean	Median	Q1	Q3	S.D.
OverallRating	3.58	4.00	3.00	4.00	1.11
CompBenefits	3.45	3.50	3.00	4.00	1.02
CareerOpps	3.78	4.00	3.00	5.00	1.10
SrManagement	3.33	3.50	3.00	4.00	1.19
WorkLife	3.03	3.00	2.00	4.00	1.24
CultureValues[a]	3.65	4.00	3.00	5.00	1.23
n	19,673				

Panel D: Big 4 Versus Non-Big 4

Rating	Big 4	Non-Big 4	Diff.	t-stat.
OverallRating	3.63	3.39	0.24***	12.90
CompBenefits	3.48	3.32	0.16***	9.36
CareerOpps	3.88	3.45	0.43***	23.62
SrManagement	3.38	3.20	0.18***	8.98
WorkLife	2.94	3.30	−0.36***	−17.55
CultureValues[b]	3.71	3.48	0.23***	9.81
n	15,082	4,591		

***, **, * Denote significance at the 0.01, 0.05, and 0.10 levels (two-tailed), respectively.

[a] Unlike all other Glassdoor ratings that are available from 2008, the *CultureValues* rating was only introduced on Glassdoor in 2012 and thus has 14,896 observations.

[b] *CultureValues* has 11,131 and 3,765 observations for Big 4 and Non-Big 4 samples, respectively.

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Employees who review their employer submit ratings across several dimensions using a Likert-type scale of one to five stars (1 = very dissatisfied, and 5 = very satisfied). The dimensions include an overall assessment of their employer (*OverallRating*), compensation and benefits (*CompBenefits*), career opportunities (*CareerOpps*), senior management (*SrManagement*), work-life balance (*WorkLife*), and, starting in 2012, culture and values (*CultureValues*).[10] The Glassdoor site uses automated as well as manual fraud-detection mechanisms to ensure that all submitted reviews are legitimate. As per its community guidelines, Glassdoor strives to build trust among its user base by providing transparent company reviews, assuring users that it never alters or edits a review's content, and never deletes content simply because it is negative.[11]

Although we believe the reviews offer potentially useful insights into employees' job satisfaction, we acknowledge several concerns about voluntarily submitted online reviews. First, many websites that solicit online reviews suffer from a bimodal, or "J-shaped," distribution of ratings—a high proportion of highly negative and positive ratings, and few ratings in the middle—that results from the self-selection of reviewers with strong opinions (Hu, Zhang, and Pavlou 2009). To overcome this problem, Glassdoor relies on a "Give-to-Get" policy to achieve a balanced online review sample. This policy requires that users first contribute to the site, typically by submitting a review of their recent employment experience, before they receive full access to the site's content. Thus, users have an economic incentive to contribute reviews. Appendix B presents the density distribution for several employee ratings. It suggests that our ratings sample is not susceptible to the bimodal distribution problem. We also examine the internal consistency of the items in our online ratings by using Chronbach's alpha (Nunnally 1978; Murphy and Davidshofer 1988; Peterson 1994). The Chronbach's alpha for all ratings is 0.88, which is within the commonly acceptable range (0.7 to 0.95).

Second, our review sample could be drawn from a non-random sample of employees if they consist mainly of persons who are dissatisfied with their current jobs or those seeking new employment opportunities. However, to the extent that less satisfied audit employees are more likely to adversely affect the audit process, the reviews are useful for our purposes. Further, we rely on the variation within the auditor-submitted reviews to draw our inferences. In untabulated analyses, we considered if we can assess the "intensity" of employee ratings coverage of audit firms to see if there are systematic differences across accounting firms. As a rough indicator of each audit firm's annual "coverage" on Glassdoor, we scale the number of its Glassdoor reviews by the number of its employees (obtained from *Accounting Today*, see https://www.accountingtoday.com) for each given year. This proportion of employees posting reviews has been increasing over the years, which is not surprising because Glassdoor has gained recognition over time, attracting more visitors to its site. The average proportion of reviews posted by the employees of the Big 4 over 2014–2015 is about 2.5 percent, with little variation across firms. We conclude, based on this very rough indicator, that there is no systematic difference across accounting firms in their employees' tendency to post ratings.[12]

Figures 1–4 show different aspects of the employee ratings. In Figure 1, we validate our employee ratings sample by comparing each accounting firm's share of total employee reviews to its share of total revenues for the top 50 accounting firms in our sample. The share of the total number of employee reviews is strikingly similar to that of total annual revenues over the 2008 to 2016 period for the largest eight accounting firms.[13] Figure 2 shows the sample distribution of the ratings across the top 20 accounting firms. Big 4 reviews make up nearly 77 percent of the sample, with Deloitte comprising 27 percent of all reviews.

Because the Big 4 and non-Big 4 differ in clientele, work environments and, more importantly, audit quality, we examine differences in their employees' perceptions in Figure 3, Panel A (Becker, DeFond, Jiambalvo, and Subramanyam 1998; Lawrence, Minutti-Meza, and Zhang 2011; Eshleman and Guo 2014). The Big 4 command a rating premium over the non-Big 4 in overall satisfaction. They also have a premium in all component areas but one, work-life balance. The highest premium is for career opportunities (12.5 percent). Figure 3, Panel B focuses exclusively on the Big 4 accounting firms and illustrates that auditors differ from non-auditors in rating their Big 4 employer. Big 4 auditors rate career opportunities higher and work-life balance and compensation/benefits lower than do non-audit employees. This is consistent with anecdotal evidence and prior literature suggesting that auditors that self-select into public accounting accept low levels of work-life balance to advance their careers (e.g., Dalton, et al. 2014; Hermanson et al. 2016), and are paid less than non-audit personnel (Hoopes, Merkley, Pacelli, and Schroeder 2018).

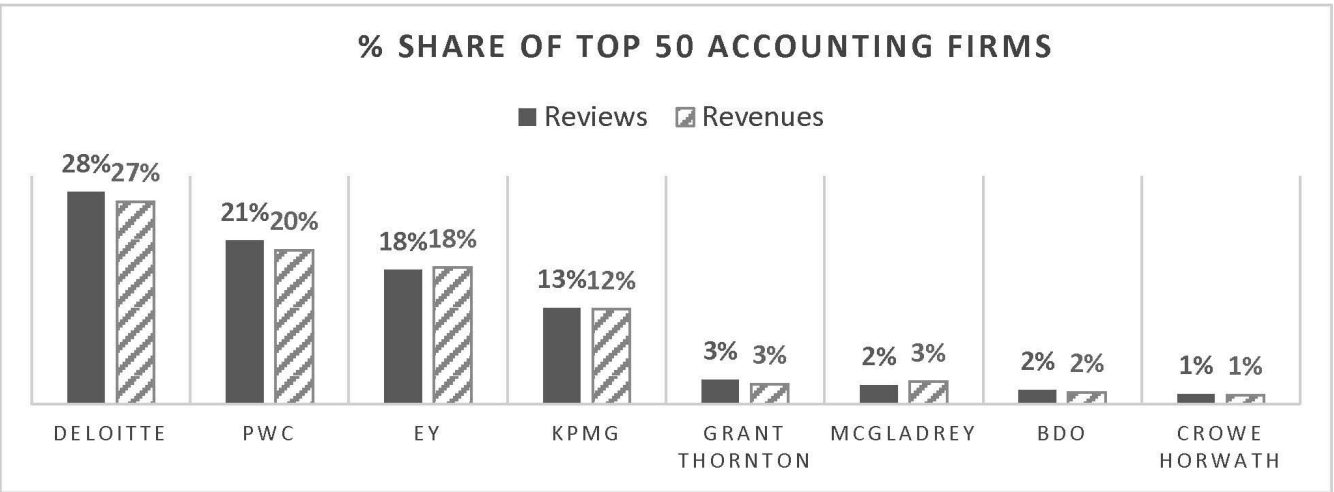
[10] These terms are not explicitly defined by Glassdoor. However, given that the terms are self-explanatory, we assume that the reviewers are unlikely to confuse these terms with something else.

[11] Glassdoor's community guidelines can be accessed at: http://help.glassdoor.com/article/Community-Guidelines/en_US. Its "Give-to-Get" policy can be viewed at: http://help.glassdoor.com/article/Give-to-get-policy/en_US/.

[12] If dissatisfied employees looking for new jobs are more prone to submit Glassdoor reviews, then audit firms with a greater portion of employees submitting reviews (greater "coverage") will have more dissatisfied employees. We also ran the audit quality models discussed later using the coverage ratio as a measure of employee dissatisfaction. We find no link between the "coverage" ratio and audit quality.

[13] We obtain annual *total* U.S. revenues and employees from 2008 to 2016 for the top 50 accounting firms in our sample from *Top 100 Firms*, an annual report published by *Accounting Today*. The results are similar when we compute the share of total annual employees for the top 50 accounting firms.

FIGURE 1
Comparison of Distribution of Reviews and Revenues of Accounting Firms



This figure compares an accounting firm's share of total number of employee reviews to its share of total annual revenues for the 2008 to 2016 period. Annual revenues are obtained from *Top 100 Firms*, an annual report published by *Accounting Today* and *Revenues* (%) is calculated as the annual revenues for an accounting firm divided by the total annual revenues for the 50 largest accounting firms in our sample. *Reviews* (%) is calculated based on the total number of Glassdoor.com reviews for the 50 largest accounting firms in our sample.

Figure 4 plots the temporal overall rating, work-life balance, and career opportunities of Big 4 and non-Big 4 employees. Panel A illustrates that the Big 4 command a higher overall rating throughout our sample period. Panel B demonstrates that ratings of work-life balance at the non-Big 4 are higher on average than at the Big 4 in all years except 2011. Panel C shows that the Big 4 are rated higher on career opportunities compared to the non-Big 4 throughout our sample period.

Table 1, Panel B presents the breakdown of the ratings sample by year. Panel C presents univariate statistics for the ratings variables. On a scale of one to five stars, the employees in our sample rate their employer overall with 3.58 stars (*OverallRating*). Career opportunities (*CareerOpps*) at 3.78 stars, and work-life balance (*WorkLife*) at 3.03 stars, have the highest and lowest ratings, respectively. Panel D shows that Big 4 employees rate their employer overall with 3.6 stars on average, about a quarter of a star higher than non-Big 4 employees rate theirs. The Big 4 command higher star ratings (as we showed in Figure 3, Panel A) than the non-Big 4 in all dimensions except work-life balance, garnering for example a 0.43 stars premium in career opportunities (*CareerOpps*) over the non-Big 4, but lagging behind the non-Big 4 by 0.36 stars in work-life balance (*WorkLife*).

Employee Ratings Model

We examine how perceptions of overall satisfaction and its components vary across accounting-firm employees by estimating the following OLS model:

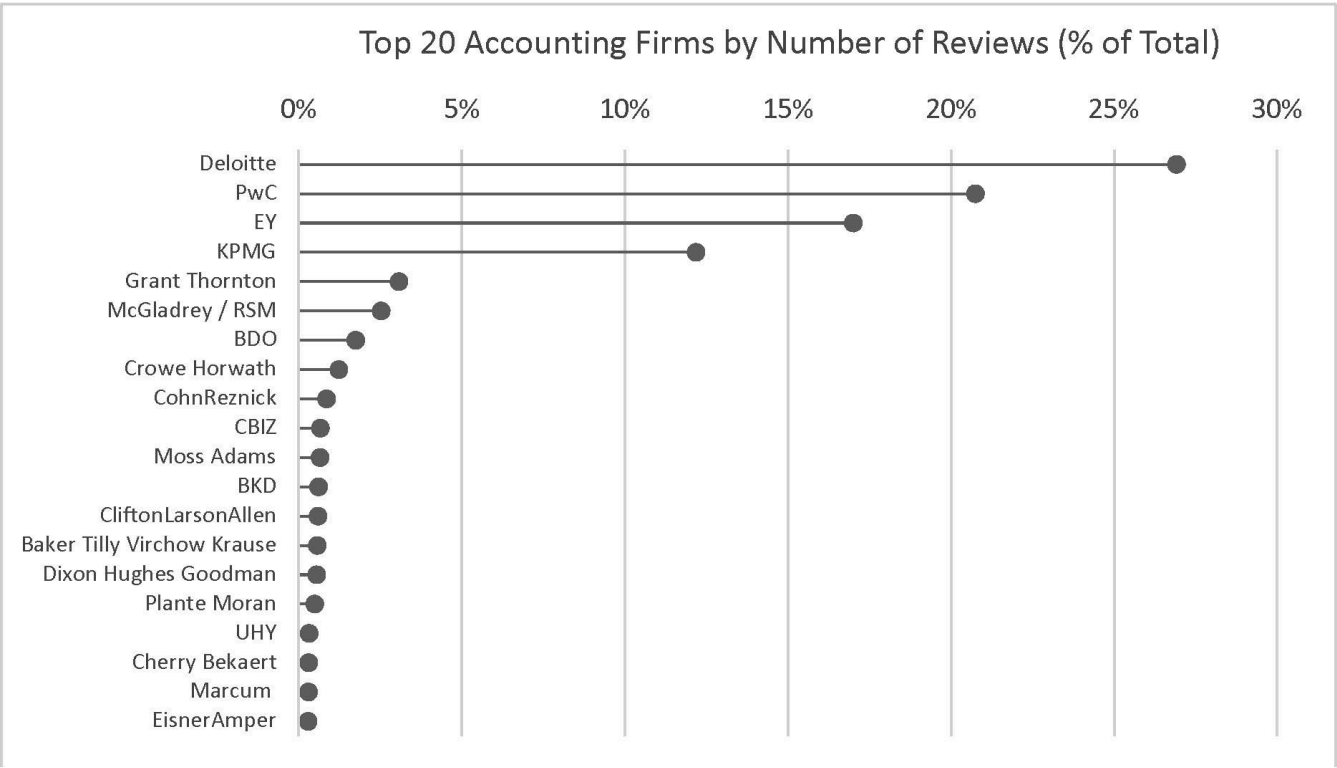
$$\begin{aligned} EmployeeRating = {} & \alpha_0 + \alpha_1 Big4 + \alpha_2 Audit + \alpha_3 Tax + \alpha_4 Female + \alpha_5 Manager + \alpha_6 EmpFullTime + \alpha_7 BusySeason \\ & + \alpha_8 SeriousDeficiency + \alpha_9 Inspection + StateFE + YearFE + \varepsilon, \end{aligned} \quad (1)$$

where *EmployeeRating* is either *WorkLife*, *CareerOpps, CompBenefits, SrManagement, CultureValues,* or *OverallRating*. *Big4* is an indicator set to 1 if the rating pertains to one of the Big 4 accounting firms, and 0 otherwise. We include indicator variables to control for reviewer characteristics. *Audit, Tax, Female, Manager,* and *EmpFullTime* indicate whether the reviewer is an auditor, tax specialist, female, manager, or full-time employee, respectively.[14,15] *BusySeason* is an indicator of whether the review is submitted during the accounting busy season (January through April). Two variables indicate characteristics of

[14] We code these variables as 0 when the relevant data are unavailable.

[15] We define a reviewer with "audit" or "assurance" in their job title as an audit employee (*Audit*). This measure is noisy since audit employees may provide a generic job title (e.g., associate) or simply leave their job title blank. However, this would bias against us finding significant differences between auditor and non-auditor reviews. Inferences are unchanged when ratings with missing job titles are excluded from our analysis.

FIGURE 2
Distribution of Employee Ratings Across Accounting Firms



This figure illustrates the share of total number of employee reviews for the top 20 accounting firms submitted to Glassdoor.com from January 2008 to March 2016.

PCAOB inspections of accounting firms. *SeriousDeficiency* indicates if a review is submitted within six months after a PCAOB inspection report identifying a serious audit deficiency relating to a GAAP departure or resulting in a restatement (Gramling, Krishnan, and Zhang 2011; Abbott, Gunny, and Zhang 2013). *Inspection* indicates if a review is submitted during a PCAOB inspection of the audit firm. We include fixed effects for reviewers' state location (*StateFE*) and year of review (*YearFE*) and cluster standard errors by accounting firm.[16] All variable definitions are detailed in Appendix A.

Employee Ratings Results

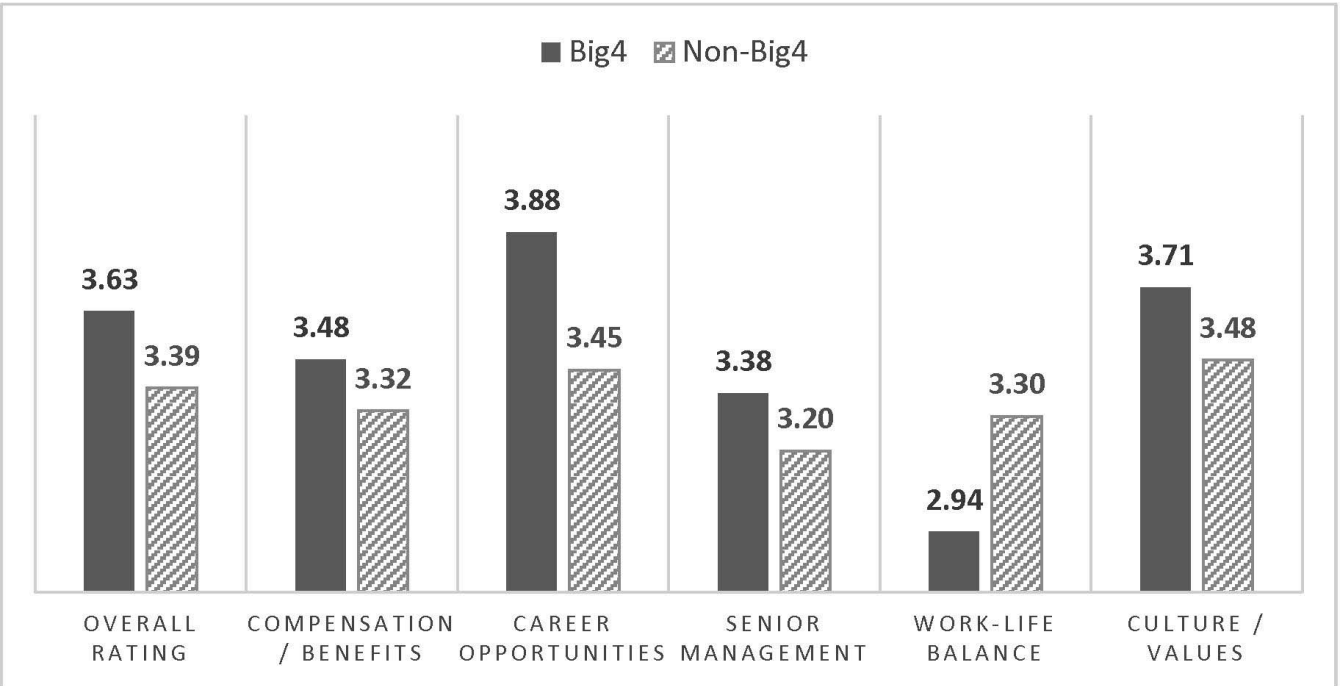
Table 2 contains descriptive statistics for the control variables. Of the 19,673 ratings, 16 percent and 8 percent come from audit and tax professionals, respectively. The remaining 76 percent of ratings are submitted by other professionals (e.g., consultants), those that provided incomplete titles (e.g., "Associate") and those that did not provide any information about their positions. Of those that provided job titles, 23 percent are audit professionals and 11 percent are tax professionals (untabulated).[17]

Table 3, Panel A presents OLS estimates for Equation (1). In columns (1) through (6), we present models with *WorkLife*, *CareerOpps*, *CompBenefits*, *SrManagement*, *CultureValues*, and *OverallRating* as dependent variables. Notably, the coefficients for *Big4* indicate that the Big 4 auditors have higher ratings on all dimensions, except for *Worklife*, than non-Big 4 auditors. Its negative and significant coefficient ($p < 0.01$) in column (1) is consistent with Buchheit et al.'s (2016) finding that Big 4 professionals experience higher levels of work-life conflict and burnout than those in smaller public accounting firms.

[16] Inferences are unchanged when we use city-location fixed effects.
[17] The relatively low proportion of auditors is not surprising because audit revenues as a percentage of total revenues for the top eight accounting firms has been declining and was below 40 percent in 2016 (*Accounting Today*).

FIGURE 3
Employee Ratings: Big 4 Versus Non-Big 4

Panel A: Employee Ratings at Big 4 and Non-Big 4 Firms



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The coefficients on *Audit* show that auditors rate work-life balance and compensation as significantly lower, but career opportunities, senior management, and culture and values as significantly higher than other (non-tax) professionals. However, despite these differences in individual components of job satisfaction, the insignificant *Audit* coefficient in column (6) indicates that auditors do not differ from other employees in their overall assessment of their employer. The numbers also point to interesting differences between audit and tax professionals, as indicated by the F-tests reported at the bottom of the panel. Auditors' rating of work-life balance and compensation is significantly lower, and of career opportunities significantly higher than that of tax specialists. However, auditors' and tax professionals' ratings of senior management and culture and values, as well as their overall assessment of their employers, are not significantly different (columns (4), (5), and (6)). Together, these results are consistent with the high workloads reported by auditors (Persellin et al. 2019) as well as perceptions that a career in audit provides a less stable daily routine but better future job opportunities than does a career in tax (Dalton et al. 2014).

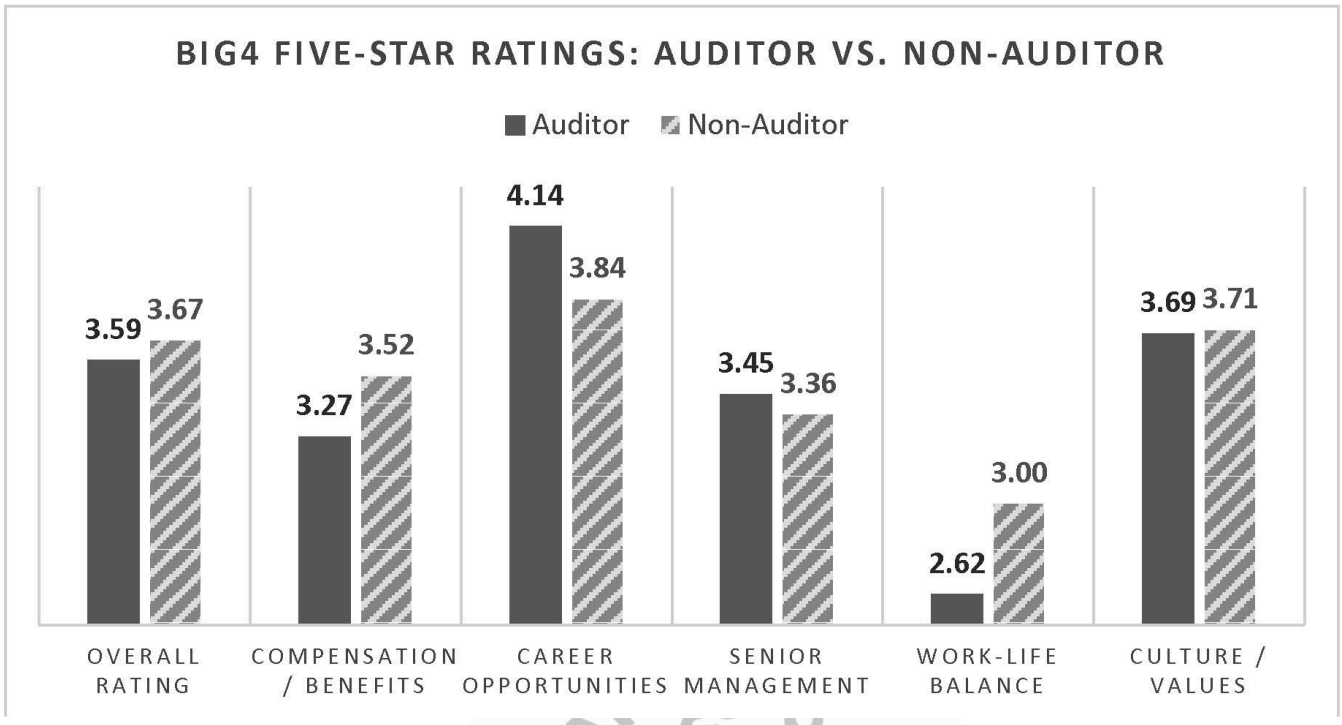
Coefficients on *Female* indicate that women at accounting firms rate compensation and benefits higher than men, consistent with women recognizing and appreciating the equal pay structure offered by the audit profession (Madsen 2013). Despite this, female employees rate their accounting firm lower on career opportunities, senior management, and overall satisfaction (columns (2), (4), and (6), respectively) compared to male employees.

In columns (7) through (8) of Table 3, Panel A, we present models with total job satisfaction rating *OverallRating* as the dependent variable, but extend the model to include the individual job character ratings. Because *CultureValues* is available for only part of our sample period, we present this extended model with and without this variable (resulting in a difference of 4,777 observations between the models). In both columns, *Big4* has a significant positive coefficient, indicating greater overall satisfaction even after controlling for other ratings and employee characteristics.

Not surprisingly, all five ratings are positively and significantly related to employees' overall satisfaction with their accounting-firm employer. To examine the relative importance of each characteristic in employee's perceptions, we present tests (in Table 3, Panel B), comparing the magnitude of the coefficients (in Panel A, column (8)) for the five

FIGURE 3 (continued)

Panel B: Audit and Non-Audit Employee Ratings at the Big 4



This figure illustrates how accounting-firm employees rate their employer across six categorical measures (ranging from one to five stars), on average. All ratings span 2008–2016 except for the "Culture/Values" measure, which begins in 2012, its first year of introduction. Panel A compares the average ratings of Big 4 and Non-Big 4 employees. Panel B compares the average ratings of audit and non-audit employees at the Big 4. An audit employee is defined as a reviewer with "audit" or "assurance" in their job title.

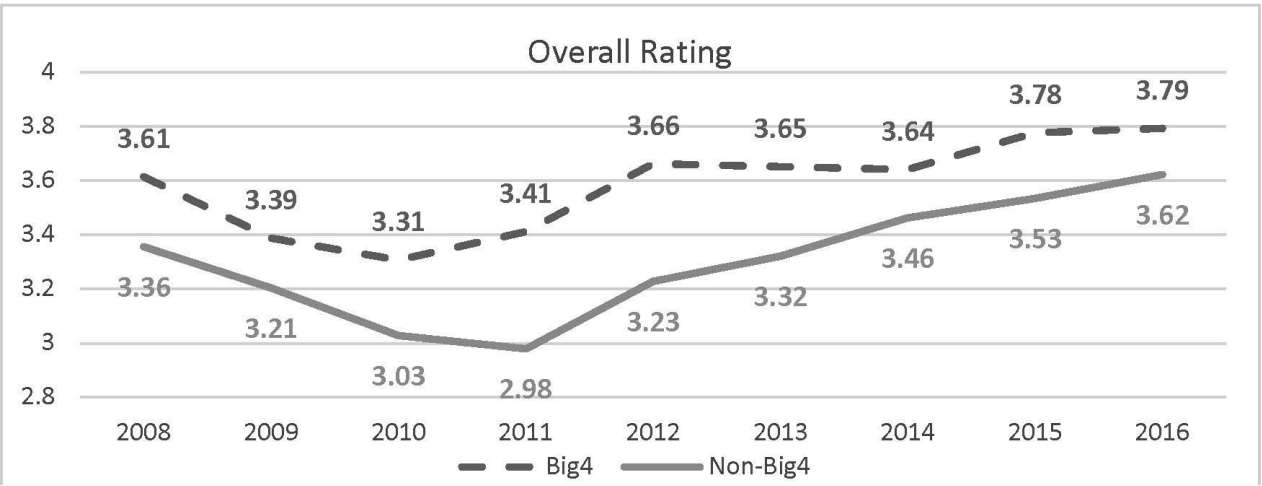
factors. The coefficients, listed in descending order, indicate that career opportunities (*CareerOpps*) and corporate culture (*CultureValues*) explain the overall rating significantly more than does any other rating. The coefficients for *CompBenefits* and *WorkLife* are not significantly different and are the least important factors associated with overall satisfaction as their coefficients are significantly lower ($p < 0.01$) than those for *CareerOpps*, *SrManagement*, or *CultureValues*.

In Table 3, Panel A, columns (9) through (10), we present the extended models for audit employees only, including and excluding *CultureValues*. Similar to the full sample results, the individual job characteristics have positive and significant coefficients in both columns. The *Big4* coefficient continues to be positive but is significant only in column (9). In Table 3, Panel C, we show tests of comparisons of the coefficients. The ranking of the coefficients differs slightly from that in Panel B for the full sample, but the tenor of results remains similar in the two panels. Career opportunities (*CareerOpps*) and corporate culture (*CultureValues*) explain the overall rating significantly more than compensation (*CompBenefits*) or work-life balance (*WorkLife*) do. The coefficients for *CompBenefits* and *WorkLife* are no different from each other and are the least important factors associated with overall satisfaction.

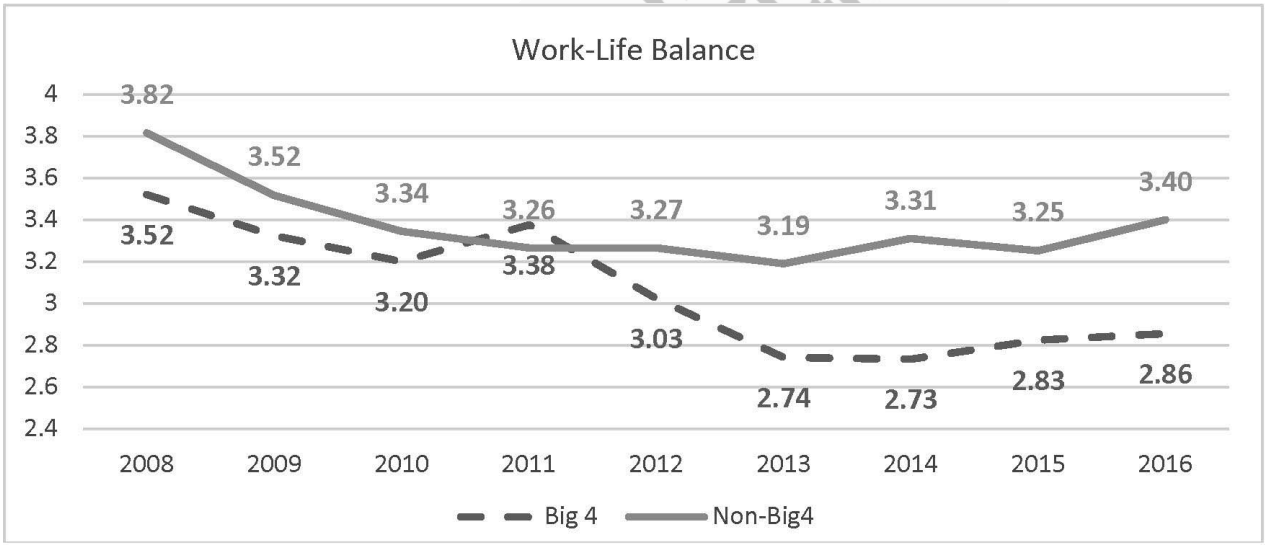
Overall, we find that firm culture, senior management, and career opportunities are greater drivers of employee satisfaction than are work-life balance and compensation for all employees of accounting firms, as well as for audit employees. Although it is somewhat surprising that salient factors such as work-life balance and compensation appear less important than other factors in explaining overall employee satisfaction, this is consistent with accounting firms trying to recruit staff, especially auditors, by emphasizing less tangible aspects of the job, such as career opportunities and the quality of the experience afforded to new recruits (Almer, Higgs, and Hooks 2005). Accounting firms that offer better career opportunities may impose higher workloads on their employees and still achieve greater overall workplace satisfaction for their employees.

FIGURE 4
Employee Ratings Over Time: Big 4 Versus Non-Big 4

Panel A: Overall Rating



Panel B: Work-Life Balance



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Audit Quality Measures

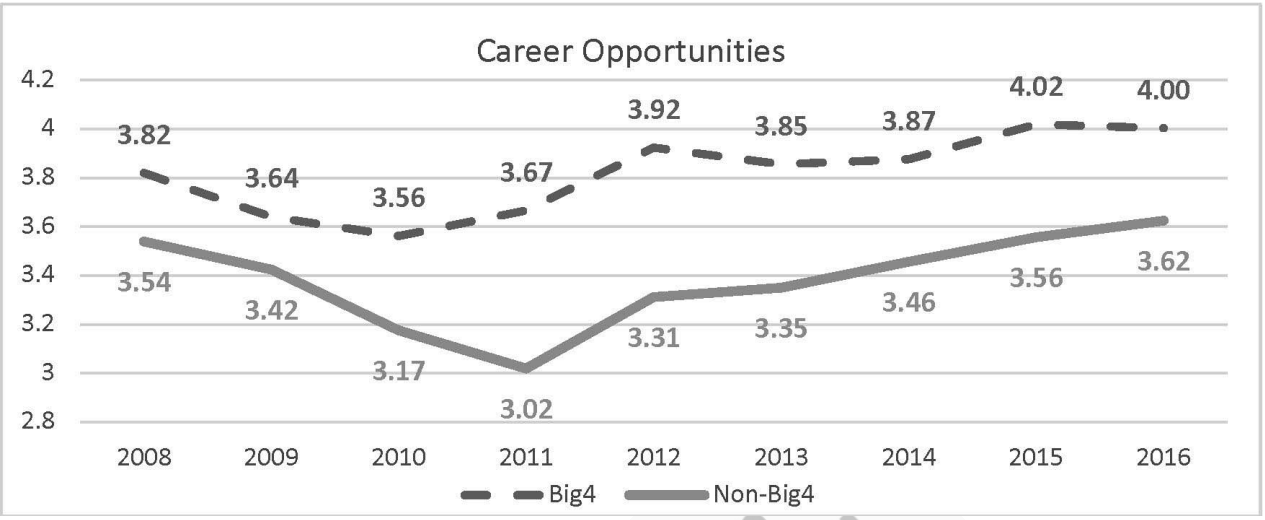
Having examined the job satisfaction characteristics of accounting firms—the setting in which auditors work—we turn now specifically to the association between auditors' job satisfaction and audit quality. Following prior work, we use three measures of audit quality, discretionary accruals (*DA*), financial restatements (*Restate*), and the going concern opinion (*GoingConcern*).

To construct *DA*, we first estimate normal accrual levels via OLS for each industry year using the Byzalov and Basu (2016) model:[18]

[18] Byzalov and Basu (2016) extend previous accruals models (e.g., Allen, Larson, and Sloan 2013) by incorporating conditional conservatism. The model yields improved "statistical power and type I error in earnings management tests." In Table 7, Panel E, we present sensitivity tests using other accrual measures.

FIGURE 4 (continued)

Panel C: Career Opportunities



This figure illustrates Big 4 and Non-Big 4 accounting-firm employees' overall satisfaction (Panel A), work-life balance (Panel B), and career opportunities (Panel C) at their employer from 2008 to 2016 using annual average Glassdoor.com ratings (ranging from one to five stars).

$$Acc_t = \theta_0 + \theta_1 SGR_t + \theta_2 EGR_t + \theta_3 CF_{t-1} + \theta_4 CF_t + \theta_5 CF_{t+1} + \theta_6 DS_t + \theta_7 DS_t * SGR_t + \theta_8 DE_t + \theta_9 DE_t * EGR_t + \theta_{10} DC_{t-1} + \theta_{11} DC_{t-1} * CF_{t-1} + \theta_{12} DC_t + \theta_{13} DC_t * CF_t + \theta_{14} DC_{t+1} + \theta_{15} DC_{t+1} * CF_{t+1} + \upsilon_t, \quad (2)$$

where Acc_t is working capital accruals in year t scaled by average total assets; SGR_t is the annual sales growth; EGR_t is the annual employee growth; CF_t, CF_{t-1}, and CF_{t+1} are annual cash flows scaled by average total assets; *DS*, *DE*, and *DC* are dummy variables set equal to 1 if *SGR*, *EGR*, and *CF*, respectively, are negative, and 0 otherwise. Equation (2) is estimated cross-sectionally for each two-digit SIC industry-year with at least ten observations. Discretionary accruals (*DA*) are measured as the signed OLS residual from Equation (2). Following previous work (e.g., Reynolds and Francis 2000; Hribar and Nichols 2007; Reichelt and Wang 2010), we interpret lower *DA* as indicative of greater audit quality.

Our second audit quality measure, *Restate*, is coded 1 if the client's current financials are included in any future restatement announcement, and 0 otherwise. We assume that any restatement of financial statements reflects lower audit quality (Newton, Wang, and Wilkins 2013).

We use the propensity of an auditor to issue a going concern opinion as our third proxy for audit quality (*GoingConcern*). Following prior work, our going concern sample consists of distressed clients (those reporting a loss or negative cash flows) who did not receive a going concern opinion in the prior year (e.g., Reynolds and Francis 2000; DeFond, Raghunandan, and Subramanyam 2002; Carson et al. 2013).

Audit Quality Model

To test the association between audit-employee job ratings and audit quality, we estimate the following model:

$$\begin{aligned} AUDQUAL = {} & \beta_0 + \beta_1 JobSatScore + \beta_2 WorkLifeScore + \beta_3 Big4 + \beta_4 AudTenure + \beta_5 IndSpecialist + \beta_6 ClientAge \\ & + \beta_7 BusinessSeg + \beta_8 GeographicSeg + \beta_9 ClientSize + \beta_{10} BTM + \beta_{11} CFO + \beta_{12} ROA + \beta_{13} Leverage \\ & + \beta_{14} Inventory + \beta_{15} Receivables + \beta_{16} Financing + \beta_{17} Merger + \beta_{18} Issuance + \beta_{19} MaterialWeakness \\ & + \beta_{20} Loss + \beta_{21} LitRisk + \beta_{22} SaleChange + \beta_{23} ROAChange + \beta_{24} SaleVolatility \\ & + \beta_{25} CurrentAccrualsLag + \beta_{26} Foreign + IndustryFE + YearFE + \mu. \end{aligned} \quad (3)$$

The dependent variable *AUDQUAL* is *DA*, *Restate*, or *GoingConcern*. We estimate the model via OLS for *DA*, and we use logistic regressions for *Restate* and *GoingConcern*. *JobSatScore* and *WorkLifeScore* are the principal components of

TABLE 2

Control Variables: Summary Statistics

Variable	Mean	Median	Q1	Q3	S.D.	n
Big4	0.77	1.00	1.00	1.00	0.42	19,673
Audit	0.16	0.00	0.00	0.00	0.36	19,673
Tax	0.08	0.00	0.00	0.00	0.26	19,673
Female	0.16	0.00	0.00	0.00	0.37	19,673
Manager	0.14	0.00	0.00	0.00	0.35	19,673
EmpFullTime	0.50	0.00	0.00	1.00	0.50	19,673
BusySeason	0.32	0.00	0.00	1.00	0.47	19,673
SeriousDeficiency	0.04	0.00	0.00	0.00	0.20	19,673
Inspection	0.12	0.00	0.00	0.00	0.33	19,673

several annual-average Glassdoor ratings and capture the overall satisfaction and work-life balance of current audit employees, respectively. We explain their construction below. Based on H1 and H2, we predict negative signs on β_1 and β_2 when *DA* or *Restate* are the dependent variables and positive signs when *GoingConcern* is the dependent variable.

We include control variables for auditor and client characteristics based on prior literature.[19] *Big4* is coded 1 if the client employs a Big 4 auditor, and 0 otherwise; *AudTenure* is the natural log of the number of years a client is audited by the current auditor; *IndSpecialist* is coded 1 if the auditor has the largest audit fee revenue in the client's industry (by two-digit SIC code) in a particular year, and 0 otherwise; *ClientAge* is the natural log of the number of years that a client appears on COMPUSTAT; *BusinessSeg* is the natural log of the client's business segments; *GeographicSeg* is the natural log of client's geographic segments; *ClientSize* is the natural log of total assets; *BTM* is the client's book-to-market ratio; *CFO* denotes cash flow from operations scaled by lagged total assets; *ROA* is the return on assets ratio, measured as earnings before extraordinary items scaled by lagged total assets; *Leverage* is the client's leverage ratio; *Inventory* is total inventory scaled by lagged total assets. *Receivables* is total accounts receivables scaled by lagged total assets; *Financing* is coded 1 if the sum of new long-term debt plus new equity exceeds 2 percent of lagged total assets, and 0 otherwise; *Merger* is coded 1 if client has an acquisition that contributes to sales, and 0 otherwise; *Issuance* is coded 1 if the client issues any debt or equity, and 0 otherwise; *MaterialWeakness* is coded 1 if the client reports at least one material weakness in internal controls over financial reporting, and 0 otherwise; *Loss* is a dummy variable coded 1 if the client experiences a loss in the current year, and 0 otherwise; *LitRisk* is coded 1 if the client operates in a highly litigious industry, and 0 otherwise; *SaleChange* is the annual change in sales scaled by lagged total assets; *ROAChange* is the annual ROA growth; *SaleVolatility* is the standard deviation of the sales to lagged total assets ratio for the past five years; *CurrentAccrualsLag* is client's total current accruals from the prior year scaled by lagged total assets; *Foreign* is coded 1 if the client has any foreign income or loss, and 0 otherwise. We include two-digit SIC (*IndustryFE*) and year (*YearFE*) fixed effects and cluster all errors by client.

Audit Quality Sample

We begin our audit-quality sample with the intersection of COMPUSTAT and Audit Analytics databases from 2008 to 2015, which comprises 39,253 client-year observations. We manually create a matching key of auditor names that consists of U.S. audit firms common to both our audit-quality sample and the employee-ratings sample. We then use the Glassdoor data to construct average annual ratings of audit employees for each audit firm. We focus on ratings of current *audit* employees because we are interested in how the satisfaction of employees who are involved in the audit process relates to audit quality.[20] The annual rating scores are then matched to public clients in the audit-quality sample based on client year and auditor name.

[19] For example, Reynolds and Francis (2000), Frankel, Johnson, and Nelson (2002), Ashbaugh, LaFond, and Mayhew (2003), Hribar and Nichols (2007), Feldmann, Read, and Abdolmohammadi (2009), Reichelt and Wang (2010), Blankley, Hurtt, and MacGregor (2012), Carcello and Li (2013), Lobo and Zhao (2013), Lennox and Li (2014).

[20] The stark differences between audit and non-audit employees (see Figure 3, Panel B) motivated us to construct average ratings measures based on audit-employee reviews specifically as opposed to all employee reviews. Further, while Glassdoor reviews are submitted by both current and former employees, we focus on reviews submitted by current employees (similar to Huang et al. 2017 and Hales et al. 2018). We exclude reviews of former employees since such reviews may not reflect the working conditions at the accounting firm for the year tested.

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TABLE 3

Employee Satisfaction at the Accounting Firm

Panel A: Multiple Regression Tests

	Dependent Variable									
	Full Sample								Audit Sample	
	WorkLife (1)	*Career Opps* (2)	*Comp Benefits* (3)	*Sr Management* (4)	*Culture Values* (5)	*Overall Rating* (6)	*Overall Rating* (7)	*Overall Rating* (8)	*Overall Rating* (9)	*Overall Rating* (10)
Big4	−0.426***	0.470***	0.165***	0.188***	0.226***	0.263***	0.104***	0.079***	0.070**	0.044
	(−6.604)	(12.629)	(4.404)	(4.444)	(3.578)	(6.818)	(9.587)	(6.944)	(2.410)	(1.505)
CompBenefits							0.153***	0.136***	0.148***	0.128***
							(41.746)	(25.205)	(14.770)	(9.165)
WorkLife							0.195***	0.126***	0.228***	0.151***
							(58.509)	(49.200)	(17.016)	(16.885)
CareerOpps							0.326***	0.255***	0.317***	0.255***
							(60.576)	(41.908)	(22.278)	(13.937)
SrManagement							0.344***	0.223***	0.349***	0.225***
							(41.884)	(23.340)	(25.571)	(9.646)
CultureValues								0.264***		0.250***
								(35.501)		(12.222)
Audit	−0.336***	0.361***	−0.156***	0.151***	0.076*	0.043	−0.038***	−0.027*		
	(−7.108)	(23.249)	(−2.854)	(5.704)	(1.934)	(1.269)	(−2.779)	(−1.805)		
Tax	−0.161**	0.258***	−0.027	0.106***	0.047	0.049	−0.037*	−0.039		
	(−2.226)	(6.861)	(−0.449)	(3.155)	(0.867)	(1.551)	(−1.850)	(−1.453)		
Female	−0.027	−0.065***	0.047**	−0.041**	−0.019	−0.041**	−0.008	−0.010	0.002	−0.008
	(−1.650)	(−3.475)	(2.049)	(−2.161)	(−0.801)	(−2.337)	(−1.152)	(−1.211)	(0.082)	(−0.277)
Manager	0.053	0.027	0.105***	0.030	0.133***	0.134***	0.088***	0.065***	0.098**	0.067
	(1.064)	(1.272)	(3.579)	(1.314)	(4.555)	(7.733)	(7.253)	(4.012)	(2.290)	(1.162)
EmpFullTime	−0.298***	−0.142***	−0.204***	−0.282***	−0.237***	−0.233***	−0.000	−0.030***	0.008	−0.024
	(−10.700)	(−5.980)	(−6.173)	(−12.033)	(−11.007)	(−11.334)	(−0.032)	(−4.081)	(0.272)	(−1.273)
BusySeason	−0.009	0.006	0.018	−0.004	−0.021	−0.026	−0.028***	−0.004	−0.065*	−0.045
	(−0.581)	(0.383)	(1.000)	(−0.222)	(−1.034)	(−1.487)	(−3.807)	(−0.411)	(−1.970)	(−1.345)
SeriousDeficiency	0.048	0.026	−0.001	0.011	0.118***	0.009	−0.012	−0.029	0.087	0.150***
	(1.491)	(0.869)	(−0.022)	(0.387)	(3.088)	(0.264)	(−0.383)	(−1.024)	(1.586)	(3.407)
Inspection	0.073	0.089	0.015	0.094*	0.123*	0.070	−0.008	−0.004	0.004	−0.100
	(1.489)	(1.491)	(0.377)	(1.967)	(1.684)	(1.365)	(−0.289)	(−0.146)	(0.069)	(−1.516)
Constant	4.024***	3.229***	3.355***	3.270***	3.630***	3.308***	−0.166***	0.062	−0.287***	0.037
	(83.769)	(77.250)	(96.382)	(100.891)	(78.560)	(87.396)	(−6.092)	(1.280)	(−3.820)	(0.539)
State F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
n	19,673	19,673	19,673	19,673	14,896	19,673	19,673	14,896	3,099	2,159
Adj. R^2	0.068	0.065	0.026	0.023	0.021	0.035	0.718	0.744	0.691	0.712
Coefficient Test: *Tax* = *Auditor*										
F-stat	6.64**	5.37**	5.81**	1.42	0.39	0.02	0.01	0.36	NA	NA
p-value	0.011	0.022	0.017	0.236	0.536	0.894	0.943	0.549	NA	NA

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TABLE 3 (continued)

Panel B: Coefficient Tests[a]

	Coefficient from Panel A, Column (8)	Significantly Different (Indicated by p-values) from Coefficient for			
		CultureValues	*CareerOpps*	*SrManagement*	*CompBenefits*
CultureValues	0.264				
CareerOpps	0.255	0.28			
SrManagement	0.223	**0.01**	**0.03**		
CompBenefits	0.136	**0.00**	**0.00**	**0.00**	
WorkLife	0.126	**0.00**	**0.00**	**0.00**	0.10

Panel C: Coefficient Tests (Audit Sample)[a]

	Coefficient from Panel A, Column (10)	Significantly Different (Indicated by p-values) from Coefficient for			
		CareerOpps	*CultureValues*	*SrManagement*	*WorkLife*
CareerOpps	0.255				
CultureValues	0.250	0.87			
SrManagement	0.225	0.33	0.53		
WorkLife	0.151	**0.00**	**0.00**	**0.01**	
CompBenefits	0.128	**0.00**	**0.00**	**0.00**	0.11

***, **, * Denote significance at the 0.01, 0.05, and 0.10 levels (two-tailed), respectively.
Values in bold denote significance at 5 percent or less.
[a] p-values for tests for difference in coefficients estimated in columns (8) and (10) of Panel A (e.g., "*CareerOpps* = *WorkLife*") are presented in Panels B and C, respectively. t-statistics are in parentheses below the coefficient estimates in Panel A; standard errors are clustered by accounting firm.
All variables are defined in Appendix A.

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TABLE 4

Audit Quality—Sample and Summary Statistics

Panel A: Audit Quality Sample

	Observations
Initial Sample (COMPUSTAT/Audit Analytics Intersection: 2008–2015)	39,253
Less:	
Client-years with non-U.S. auditor	(4,007)
Missing reviews/auditor matches	(8,683)
Missing variable values (e.g., *BTM, Lev, Accruals, ROA*)	(4,187)
Final Sample (4,788 unique clients and 64 unique auditors)	22,376
Less firms that are not financially distressed	(15,366)
Final Sample for *GoingConcern* analyses (2,862 unique clients and 55 unique auditors)	7,010

Panel B: Principal Components Analysis[a]

	Eigenvectors				
	JobSatScore	*WorkLifeScore*			
Variable	Comp 1	Comp 2	Comp 3	Comp 4	Comp 5
OverallRating	0.51	−0.15	0.02	0.65	−0.55
CareerOpps	0.40	−0.64	−0.05	0.08	0.64
CompBenefits	0.47	0.17	−0.75	−0.41	−0.13
SrManagement	0.49	−0.01	0.65	−0.56	−0.19
WorkLife	0.35	0.73	0.14	0.30	0.48
Eigenvalue	3.17	1.03	0.38	0.28	0.15
Variance Explained	0.63	0.21	0.08	0.06	0.03

(continued on next page)

After dropping observations with non-U.S. auditors and those missing Glassdoor reviews and data for control variables, the sample comprises 22,376 client years, 4,788 unique clients, and 64 unique auditors (Table 4, Panel A). All continuous variables are winsorized at 1 percent and 99 percent. For each of the audit quality models, we then retain observations for which data are available for the variables used. Further, for the going concern model, we use (following previous work, e.g., Reynolds and Francis 2000) a sample of financially distressed firms (i.e., firms with a loss or negative cash-flows from operations) that did not receive a going concern opinion in the prior year.

Summary Auditor-Level Measures of Employee Satisfaction

The raw Glassdoor ratings are highly correlated. Except for one, the correlations (untabulated) exceed 0.55, ranging between 0.552 and 0.845. Consequently, we use principal components analysis on the final audit quality sample to extract the underlying constructs from the annual average ratings of all current audit employees. The results of this analysis, shown in Table 4, Panel B, indicate that the first two components, both with eigenvalues greater than 1, capture the underlying constructs of most interest to us—overall satisfaction and work-life balance. The first component captures 63 percent of the ratings' variation, has positive weights for the five rating measures, and places the greatest weight (0.51) on *OverallRating*. We use it to proxy for overall audit-employee satisfaction at the audit firm (*JobSatScore*). We use the second component to proxy for auditors' work-life balance (*WorkLifeScore*) because it places the greatest weight (0.73) on the *WorkLife* rating.[21]

[21] Our sample begins in 2008. However, the data for *CultureValues* rating is available only from 2012. Therefore, we do not include *CultureValues* in the principal components analysis. Inferences from our main results are unchanged when we include the *CultureValues* rating and restrict the sample to 2012 and later years.

TABLE 4 (continued)

Panel C: Summary Statistics

	Mean	Median	Q1	Q3	Min	Max	S.D.	n
DA	0.00	0.00	−0.03	0.02	−0.18	0.20	0.06	16,384
Restate	0.14	0.00	0.00	0.00	0.00	1.00	0.34	22,376
GoingConcern	0.03	0.00	0.00	0.00	0.00	1.00	0.18	7,010
JobSatScore	0.00	0.27	−0.64	0.86	−11.06	7.87	1.78	22,376
WorkLifeScore	0.00	0.10	−0.94	0.61	−2.75	8.18	1.01	22,376
Big4	0.80	1.00	1.00	1.00	0.00	1.00	0.40	22,376
AudTenure	2.08	2.20	1.61	2.64	0.00	3.74	0.87	22,376
IndSpecialist	0.25	0.00	0.00	1.00	0.00	1.00	0.43	22,376
ClientAge	2.87	2.89	2.30	3.40	1.10	4.19	0.75	22,376
BusinessSeg	1.49	1.10	1.10	2.20	0.00	3.58	0.78	22,376
GeographicSeg	1.39	1.10	0.69	2.20	0.00	4.42	1.00	22,376
ClientSize	6.87	6.85	5.54	8.19	2.34	11.64	1.97	22,376
BTM	0.68	0.52	0.29	0.87	0.03	3.91	0.61	22,376
CFO	0.06	0.08	0.02	0.14	−0.73	0.45	0.16	22,376
ROA	0.00	0.03	−0.01	0.08	−0.91	0.37	0.18	22,376
Leverage	0.18	0.13	0.00	0.29	0.00	0.71	0.18	22,376
Inventory	0.10	0.04	0.00	0.15	0.00	0.62	0.13	22,376
Receivables	0.18	0.12	0.06	0.22	0.00	0.93	0.20	22,376
Financing	0.57	1.00	0.00	1.00	0.00	1.00	0.50	22,376
Merger	0.10	0.00	0.00	0.00	0.00	1.00	0.30	22,376
Issuance	0.91	1.00	1.00	1.00	0.00	1.00	0.29	22,376
MaterialWeakness	0.08	0.00	0.00	0.00	0.00	1.00	0.27	22,376
Loss	0.30	0.00	0.00	1.00	0.00	1.00	0.46	22,376
LitRisk	0.20	0.00	0.00	0.00	0.00	1.00	0.40	22,376
SaleChange	0.05	0.03	−0.03	0.11	−0.67	0.93	0.22	22,376
ROAChange	0.00	0.00	−0.02	0.03	−0.49	0.58	0.13	22,376
SaleVolatility	0.20	0.12	0.05	0.24	0.00	1.48	0.25	22,376
CurrentAccrualsLag	−0.03	−0.01	−0.05	0.01	−0.50	0.27	0.10	22,376
Foreign	0.51	1.00	0.00	1.00	0.00	1.00	0.50	22,376

[a] *CultureValues* ratings are not used because they are available only starting in 2012.
All variables are defined in Appendix A.

Audit Quality Results

Table 4, Panel C presents descriptive statistics for the full sample. The Big 4 auditors (*Big4*) represent 80 percent of our audit-quality sample.[22] The mean (median) discretionary accruals are 0.00 (0.00), 14 percent of client-year observations experience a restatement, and 3 percent of client-year observations receive a going concern opinion.[23]

Table 5, Panel A contains multiple regression results for the three audit quality proxies: discretionary accruals (*DA*), the likelihood that a client restates financials (*Restate*), and the likelihood that an auditor issues a going concern opinion (*GoingConcern*). The coefficient on *JobSatScore* is insignificant in all three columns, thus providing no support for H1. However, the coefficients on *WorkLifeScore* indicate that auditors' work-life balance is negatively associated with audit quality.

In column (1), work-life balance is associated with lower discretionary accruals (*DA*), as per the negative significant coefficient on *WorkLifeScore* ($p < 0.05$). This is consistent with the notion that auditors who are less likely to have their

[22] EY has the highest proportion of client-year observations (26 percent) in our sample, followed by PwC (19 percent), Deloitte (18 percent), and KPMG (17 percent). These top four audit firms (*Big4*) comprise 80 percent, and the top eight audit firms comprise 95 percent of our audit quality sample.

[23] As discussed, we construct *Restate* following Newton et al. (2013), who report a restatement rate of 15 percent. We adopt this definition because we are concerned with audit quality, and assume that a restatement of financial statements is indicative of lower audit quality in the year being restated. Our results are robust when we count a restatement only once, rather than applying it to all years affected by the restatement.

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TABLE 5
Audit Quality

Panel A: Ratings From Current Auditors

	Dependent Variable		
	DA (1)	*Restate* (2)	*Going Concern* (3)
JobSatScore	0.000	−0.015	−0.045
	(0.713)	(−1.235)	(−1.294)
WorkLifeScore	−0.002**	−0.135***	0.201**
	(−2.479)	(−3.859)	(2.498)
Big4	0.000	0.355***	0.055
	(0.191)	(3.077)	(0.215)
AudTenure	0.000	0.007	−0.052
	(0.416)	(0.167)	(−0.465)
IndSpecialist	−0.001	0.168**	−0.043
	(−1.370)	(2.458)	(−0.186)
ClientAge	−0.002***	−0.082	0.175
	(−2.704)	(−1.564)	(1.267)
BusinessSeg	−0.002**	0.255***	−0.831***
	(−2.216)	(4.703)	(−4.718)
GeographicSeg	−0.000	0.059	−0.215*
	(−0.423)	(1.382)	(−1.859)
ClientSize	−0.001***	0.016	−0.395***
	(−2.846)	(0.665)	(−4.148)
BTM	−0.001	0.150***	0.626***
	(−0.922)	(3.064)	(6.954)
CFO	−0.225***	−0.107	0.845
	(−24.851)	(−0.403)	(1.371)
ROA	0.185***	0.036	−4.409***
	(18.317)	(0.120)	(−6.536)
Leverage	0.004	0.765***	−1.334**
	(1.470)	(3.787)	(−2.116)
Inventory	0.024***	−0.087	0.596
	(4.340)	(−0.245)	(0.630)
Receivables	0.048***	−0.046	−1.172
	(8.027)	(−0.194)	(−1.469)
Financing	0.000	0.040	−0.019
	(0.546)	(0.682)	(−0.090)
Merger	0.001	0.175**	−0.391
	(0.946)	(2.322)	(−0.904)
Issuance	0.005***	0.141	−0.048
	(2.943)	(1.399)	(−0.188)
MaterialWeakness	−0.004*	1.814***	0.885***
	(−1.821)	(27.072)	(4.704)
Loss	0.004***	0.076	1.383*
	(2.705)	(1.018)	(1.701)
LitRisk	0.001	−0.106	−0.724*
	(0.696)	(−0.851)	(−1.817)
SaleChange	−0.004	−0.056	−0.089
	(−1.301)	(−0.453)	(−0.234)
ROAChange	−0.006	0.049	1.864***
	(−0.737)	(0.204)	(3.875)
SaleVolatility	−0.005**	−0.026	0.798***
	(−1.962)	(−0.208)	(2.901)

(continued on next page)

TABLE 5 (continued)

	Dependent Variable		
	DA **(1)**	***Restate*** **(2)**	***Going Concern*** **(3)**
CurrentAccrualsLag	−0.034***	0.035	2.091***
	(−3.749)	(0.124)	(3.169)
Foreign	−0.002**	0.091	0.341*
	(−2.004)	(1.094)	(1.755)
Constant	0.022***	−3.088***	−3.953***
	(5.424)	(−7.459)	(−3.532)
Industry Fixed Effects	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes
n	16,384	22,354	6,613
Adj./Pseudo R^2	0.149	0.091	0.298

Panel B: Sensitivity Tests

	Ratings From All Current Employees			Ratings From Auditors Excluding Part-Time Employees[a]		
	DA **(1)**	***Restate*** **(2)**	***Going Concern*** **(3)**	***DA*** **(4)**	***Restate*** **(5)**	***Going Concern*** **(6)**
JobSatScore	0.000	0.019	−0.017	0.000	−0.013	−0.033
	(0.928)	(1.338)	(−0.668)	(0.579)	(−1.131)	(−0.961)
WorkLifeScore	−0.003***	−0.126**	0.179*	−0.002**	−0.129***	0.212***
	(−3.005)	(−2.527)	(1.925)	(−2.328)	(−3.648)	(2.600)
Controls	Included	Included	Included	Included	Included	Included
n	17,159	23,641	7,234	16,373	22,330	6,606
Adj./Pseudo R^2	0.152	0.090	0.280	0.152	0.090	0.296

***, **, * Denote significance at the 0.01, 0.05, and 0.10 levels (two-tailed), respectively.
[a] Reviewers with "part-time" or "intern" in their employment status are defined as part-time employees.
t-statistics (Z-statistics) are in parentheses. Standard errors are clustered by client.
All variables are defined in Appendix A.

judgement impaired due to long working hours are more likely to detect and reduce clients' use of within-GAAP accrual manipulation to report higher earnings.

Column (2) shows that audit-employees' perception of better work-life balance is associated with lower incidence of financial restatements for clients. Using marginal effects and holding variables at their means, a one standard deviation decrease in *WorkLifeScore* is associated with a 1.5 percentage-points increase in the probability of a restatement (from 11.5 percent to 13.0 percent), an economically significant amount.[24]

Column (3) reports results from tests of the auditor's propensity to issue a going concern opinion for distressed clients. The positive significant coefficient on *WorkLifeScore* ($p < 0.05$) indicates that the better the auditors' work-life balance at the audit firm, the greater their propensity to issue a going concern opinion for a distressed client.[25] In terms of economic significance, using marginal effects and holding variables at their means, a one standard deviation increase in *WorkLifeScore* is linked with

[24] The economic and statistical significance of our results becomes stronger when we limit *Restate* to negative restatements only (i.e., those negatively affecting the financials).

[25] A similar result is obtained when we extend the sample to include firms with going concern opinion in the previous year, and include a control for the prior year going concern opinion.

an increase in the likelihood that an auditor issues a going concern opinion from 0.76 percent to 0.93 percent, an economically significant 22 percent increase. Overall, the collective evidence presented in Table 5, Panel A is consistent with H2.[26,27]

In Table 5, Panel B, we present two variants of our audit quality models. For brevity, we only report the coefficients for variables of interest. First, as we discussed above, the tests in Panel A were based on ratings provided only by reviewers we identified as audit professionals. However, because many reviewers did not clearly identify their job type, there is a possibility that a non-trivial number of the unidentified reviewers work in audit positions. In columns (1) through (3) of Table 5, Panel B, we present the audit quality tests using the ratings of *all* current employees. The results are very similar to those in Panel A. Second, perceptions about employers and audit quality outcomes can be different for full-time and part-time employees. In columns (4) through (6) of Table 5, Panel B, we present the audit quality tests after excluding the ratings of part-time employees. Once again, the results are similar to those reported in Panel A.

Additional Tests

Extended Audit Quality Tests

Next, we conduct finer audit quality tests for discretionary accruals. Burgstahler and Dichev (1997) and Bartov, Givoly, and Hayn (2002) suggest that firms benefit from meeting their earnings benchmarks and managers have strong incentives to avoid reporting earnings decreases or losses. In Table 6, Panel A, we focus on observations near earnings benchmarks where clients are most likely to engage in "within GAAP" accrual manipulation to achieve their reporting goals.

We separately look at clients who are within the [0, 0.01] earnings interval (i.e., those whose annual income or changes in income are between 0 and 1 percent of their lagged market value), and those within the [–0.01, 0) earnings interval.[28] We predict that auditors who are more satisfied and enjoy better work-life balance are more likely to detect and constrain accrual manipulation in earnings intervals where clients just meet their earnings benchmarks than where clients miss their benchmarks. The results in Table 6, Panel A, indicate no significant results when clients just miss their earnings benchmark. The coefficients on *JobSatScore* and *WorkLifeScore* are insignificant (column (1)). However, in column (2), the negative significant coefficient on *WorkLifeScore* ($p < 0.01$) suggests that auditors with better work-life balance are more likely to detect and prevent "within GAAP" accrual manipulation to meet earnings benchmarks.

Representativeness of Reviews

In Table 6 Panel B, we present two sensitivity tests using restricted samples. In columns (1) through (3) we restrict our sample to the 2012–2015 period, and our results continue to hold.[29] In columns (4) through (6) we require a minimum of five auditor reviews for each client-year observation and, once again, our results continue to hold. Our results are also similar (untabulated) when we change the minimum number of reviews to 15.

Client Satisfaction Versus Auditor Satisfaction

Huang et al. (2017) show that client-employee satisfaction is correlated with audit-relevant outcomes. To control for client-employee satisfaction, we construct satisfaction measures for client employees following the same steps we took to construct our audit-employee satisfaction scores. We obtain ratings from Glassdoor reviews submitted by clients' current employees and calculate annual averages for each client rating. We construct *ClientSatisfaction* by extracting the principal component from the annual averages.[30] We then re-run our main analysis with *ClientSatisfaction* as an additional control. The results, reported in

[26] In untabulated tests, we estimate the models in Table 5, columns (1) through (3), for Big 4 and non-Big 4 clients separately. We find a positive association between work-life balance and audit quality for both samples, and although some *WorkLifeScore* coefficients lose significance at the conventional levels, they retain their predicted signs. For the Big 4 sample, *WorkLifeScore* is negatively associated with discretionary accruals (*DA*) and restatements (both $p < 0.01$), but insignificant for *GoingConcern*. For the non-Big 4, *WorkLifeScore* is positively associated with issuance of a going concern opinion ($p < 0.05$) and negatively related to *DA* ($p < 0.10$, one-tailed test) and restatements ($p = 0.10$, one-tailed test).

[27] Qualitatively similar results are obtained when we control for audit fees and audit lag to proxy for audit effort.

[28] Our inferences are unchanged when we expand the interval to [–0.02, 0) and [0, 0.02] or when we use net income to construct our earnings intervals.

[29] Thus, we exclude reviews submitted during the recession period when employees may have rated their employers higher simply because they are still employed.

[30] *ClientSatisfaction* is the only principal component with eigenvalue > 1 derived from the five annual average client-employee ratings (i.e., *OverallRating, CareerOpps, CompBenefits, SrManagement,* and *WorkLife*).

TABLE 6

Additional Tests

Panel A: Earnings Manipulation Intervals

	Dependent Variable = *DA*	
Earnings Interval[a] ∈	**[−0.01, 0) (1)**	**[0, 0.01] (2)**
JobSatScore	−0.000	0.000
	(−0.310)	(0.204)
WorkLifeScore	−0.002	−0.004***
	(−0.948)	(−2.599)
Controls	Included	Included
n	1,974	3,065
Adj. R^2	0.209	0.171

Panel B: Representativeness of Reviews

	Audit Quality After Recession (2012–2015)			Min 5 Observations[b]		
	***DA* (1)**	***Restate* (2)**	***Going Concern* (3)**	***DA* (4)**	***Restate* (5)**	***Going Concern* (6)**
JobSatScore	0.000	0.007	−0.031	−0.000	−0.116***	−0.091
	(1.077)	(0.451)	(−0.669)	(−0.215)	(−3.151)	(−0.663)
WorkLifeScore	−0.003**	−0.228***	0.318**	−0.004***	−0.278***	0.632**
	(−2.282)	(−4.224)	(2.519)	(−3.174)	(−3.496)	(2.023)
Controls	Included	Included	Included	Included	Included	Included
n	8,295	11,593	2,976	14,278	19,043	5,057
Adj./Pseudo R^2	0.134	0.110	0.371	0.143	0.089	0.326

Panel C: Controlling for Client-Employee Satisfaction

	Dependent Variable	
	***DA* (1)**	***Restate* (2)**
JobSatScore	−0.000	0.036
	(−0.331)	(1.042)
WorkLifeScore	−0.004**	−0.424***
	(−2.435)	(−4.291)
ClientSatisfaction	0.000	−0.016
	(0.027)	(−0.713)
Controls	Included	Included
n	5,950	7,285
Adj./Pseudo R^2	0.134	0.104

(continued on next page)

Table 6, Panel C, indicate that auditor work-life balance is associated with lower discretionary accruals and lower restatement rates even after controlling for client-employee satisfaction.[31,32]

[31] Controlling for client-satisfaction results in a serious attrition of our going concern sample that prevents us from testing for the relationship between work-life balance and issuing a going concern opinion.

[32] Restatement results are qualitatively similar when we partition our sample on client complexity using amortization, the number of business segments, geographical segments, and R&D intensity as proxies.

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TABLE 6 (continued)

Panel D: Raw Ratings and Audit Quality

	Dependent Variable		
	DA (1)	*Restate* (2)	*Going Concern* (3)
OverallRating(Raw)	−0.003	−0.225*	−0.211
	(−0.884)	(−1.832)	(−0.686)
CareerOpps(Raw)	0.003	0.127	−0.113
	(1.237)	(1.055)	(−0.399)
CompBenefits(Raw)	0.003*	−0.017	0.097
	(1.766)	(−0.214)	(0.421)
SrManagement(Raw)	0.001	0.266***	−0.335
	(0.585)	(2.758)	(−1.322)
WorkLife(Raw)	−0.003	−0.238**	0.420*
	(−1.447)	(−2.221)	(1.858)
Controls	Included	Included	Included
n	16,384	22,354	6,613
Adj./Pseudo R^2	0.149	0.091	0.299

Panel E: Raw Ratings: *OverallRating* and *WorkLife* Only

	Dependent Variable		
	DA (1)	*Restate* (2)	*Going Concern* (3)
OverallRating(Raw)	0.003	0.097	−0.531***
	(1.421)	(1.183)	(−3.006)
WorkLife(Raw)	−0.004*	−0.278***	0.422**
	(−1.893)	(−3.181)	(2.238)
Controls	Included	Included	Included
n	16,384	22,354	6,613
Adj./Pseudo R^2	0.149	0.091	0.298

***, **, * Denote significance at the 0.01, 0.05, and 0.10 levels (two-tailed), respectively.
[a] Earnings Interval is the level of or change in income before extraordinary items scaled by lagged market value.
[b] Minimum of five auditor reviews for each client-year observation.
t-statistics (Z-statistics) are in parentheses. All standard errors are clustered by client.
All variables are defined in Appendix A.

Raw Ratings and Audit Quality

Because the raw Glassdoor ratings are highly correlated (as discussed above), we do not include them individually in our main analyses, and rely instead on the satisfaction scores that we construct using principal component analysis (PCA) above. Nonetheless, we examine whether the results in Table 5 hold when analyses are conducted using the raw ratings instead of the PCA scores. In Table 6, Panel D, our results hold when we include the raw ratings instead of the two PCA scores for *Restate* and *GoingConcern* but not for *DA*, as per the coefficients for *WorkLife(Raw),* the raw work-life balance rating. In Table 6, Panel E, we find stronger results when we conduct the analysis using only the two raw ratings of most interest to us (i.e., *OverallRating(Raw)* and *WorkLife(Raw)*).

Office-Level Auditor Satisfaction Measures

Because we measure employee satisfaction and work-life balance at the audit-firm level, we are more likely to capture firm-wide policies affecting audit-employee working conditions at the firm level rather than at the office level. We construct additional measures to better capture auditor satisfaction and work-life balance at the office level and test the robustness of our

results. To do so, we use the self-disclosed geographic location (i.e., city and state) of the reviewer to construct the office-level measures. This analysis serves as an additional finer test to corroborate our main results.

We calculate annual average ratings for each auditor by city, and, as before, extract the first two principal components, which capture overall satisfaction (*JobSatScore(Office)*) and work-life balance (*WorkLifeScore(Office)*). We then re-estimate the model in Table 5.[33] The composition of the sample, broken down by metro area, is presented in Table 7, Panel A. In addition to using all control variables and fixed effects (*Controls*) from Equation (3), we control for office size (*OfficeSize*), defined as the natural log of annual audit fees collected by the office, and whether an office is a city-level industry expert (*OfficeIndSpecialist*), defined as an office with the largest annual audit fees from clients in a two-digit SIC (Francis, Michas, and Yu 2013). Table 7, Panel B presents the results of estimating this model. Columns (2) through (3) show, consistent with Table 5, that work-life balance (*WorkLifeScore(Office)*) is associated with fewer restatements and a greater likelihood of issuing a going concern opinion.[34]

In Table 7, Panel C, we separately examine discretionary accruals of clients who are within the [0, 0.01] earnings interval, and those within the [−0.01, 0) earnings interval. In column (1), no significant results are found when clients just miss their earnings benchmark. However, in column (2), we continue to detect a negative relationship between work-life balance and accruals when clients just meet their benchmark. Our inferences are unchanged when we expand the interval to [−0.02, 0) and [0, 0.02].

In Table 7, Panel D, we present the office-level results where we control for client satisfaction (Huang et al. 2017). Consistent with our main results, the *WorkLifeScore*(*Office*) coefficient is negative in columns (1) and (2), marginally significant ($p < 0.10$ using the one-tailed test) in column (1) and significant in column (2) ($p < 0.05$). We are unable to estimate the going concern opinion model due to insufficient observations.

As an additional robustness check, we present the *DA* results above using alternative measures of discretionary accruals used in prior literature. Table 7, Panel E indicates that *DA* results are robust when estimated using the Allen et al. (2013) model in column (1), modified Jones model (Dechow, Sloan, and Sweeney 1995; Price, Sharp, and Wood 2011) in column (2), modified Jones model that controls for performance with lagged ROA (Kothari, Leone, and Wasley 2005) in column (3), and a discretionary accruals model that controls for performance with lagged ROA as per Ashbaugh et al. (2003) in column (4).

IV. CONCLUSION

We use crowd-sourced employee reviews of accounting firms on Glassdoor to examine how accounting firms are rated by their employees on different dimensions and, more importantly, how auditor satisfaction and work-life balance relate to audit quality.

We find that for employees in accounting firms, overall job satisfaction is positively associated with career opportunities, senior management, compensation and benefits, work-life balance, and culture and values. However, the associations between career opportunities, senior management, and culture and values and overall satisfaction are stronger than the associations between compensation or work-life balance and overall satisfaction. Further, work-life balance is as important as compensation in determining the overall satisfaction of accounting-firm employees. In addition, we document a brand name effect for the Big 4, as Big 4 employees consistently rate their employer higher overall than non-Big 4 employees do. Focusing specifically on auditors, we find that their perceptions about work-life balance and compensation is lower than that of other accounting firm employees.

Our audit quality analysis shows that audit employees' perceptions of work-life balance are positively associated with audit quality. Surprisingly, we do not find an association between audit-employee satisfaction and audit quality.[35] These results suggest that although accounting firms may keep their employees highly satisfied by offering greater career opportunities, even highly satisfied employees cannot produce high-quality outputs when they are overworked.

Our findings have several implications for accounting firms. Previous evidence and intuition suggest that work-life balance and compensation would greatly shape job satisfaction, but our findings indicate that this may not be the case with accounting firms. For example, we find that career advancement opportunities, senior management, and firm culture, factors that require

[33] We first construct city-year measures of satisfaction for each audit firm using Glassdoor ratings and location of reviewer, and then match them to the nearest auditor city within a 30-mile radius, using the *Auditor_City* field from AuditAnalytics.

[34] In column (3), to increase sample size, we include observations with a going concern opinion in the prior year and control for them with an indicator variable (*GoingConcernLag*). Limiting the going concern analysis to observations without a going concern opinion in the prior year reduces our sample by 18 percent, and although we continue to observe a positive coefficient, it is insignificant at conventional levels.

[35] An alternative explanation for the lack of association between audit-employee satisfaction and audit quality is that other factors (not captured by our model due to data unavailability) could explain the lack of association. The psychology literature identifies several factors (e.g., personality traits, organizational pressure, time pressure, and self-esteem) as having a moderating effect on the link between job satisfaction and job performance (Bhagat 1982; Lopez 1982; Bowling 2007).

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TABLE 7

Office-Level Tests

Panel A: Office Measures by Metro Area

Clients by Metropolitan Area	Obs.	Percent
New York City	1,499	15.1%
Boston	1,092	11.0%
Houston	986	9.9%
Chicago	924	9.3%
San Jose	898	9.1%
Los Angeles	588	5.9%
Philadelphia	523	5.3%
Dallas	522	5.3%
San Francisco	386	3.9%
Atlanta	353	3.6%
Minneapolis	253	2.6%
Seattle	212	2.1%
Denver	187	1.9%
Cleveland	155	1.6%
San Diego	131	1.3%
Charlotte	123	1.2%
St. Louis	104	1.1%
Other (50 Cities)	974	9.8%
Total	9,910	100.0%

Panel B: City-Level Office Measures

	Dependent Variable		
	DA (1)	*Restate* (2)	*Going Concern* (3)
JobSatScore(*Office*)	−0.000	−0.024	0.061
	(−0.462)	(−1.400)	(1.046)
WorkLifeScore(*Office*)	−0.001	−0.096**	0.246*
	(−1.100)	(−2.189)	(1.722)
OfficeIndSpecialist	−0.000	0.117	−0.012
	(−0.321)	(1.424)	(−0.039)
OfficeSize	0.000	−0.058	0.252*
	(0.458)	(−1.195)	(1.787)
GoingConcernLag			2.537***
			(6.041)
Controls	Included	Included	Included
n	7,294	9,854	2,691
Adj./Pseudo R^2	0.129	0.096	0.460

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considerable commitment and investment to cultivate and develop, more substantially impact overall job satisfaction at accounting firms than do employees' work-life balance or salaries, factors that are more easily adjustable in the short run. Nonetheless, work-life balance can play an important role in positively affecting audit quality.

Finally, although we believe we have provided some insights into hitherto unexplored areas of working conditions at accounting firms, we acknowledge some limitations in our analyses which future studies may be able to overcome. First, the audit quality on each engagement is dependent on the audit team assigned to that engagement. By aggregating individual-level ratings at the auditor level, we are assuming implicitly that all auditors in a client engagement and across client engagements have similar satisfaction profiles. Although we achieve less aggregation through our office-level tests, we acknowledge that the

TABLE 7 (continued)

Panel C: Earnings Manipulation Intervals

	Dependent Variable = *DA*	
Earnings Intervals[a] ∈	**[−0.01, 0.00) (1)**	**[0.00, 0.01] (2)**
JobSatScore(*Office*)	0.000	0.001
	(0.397)	(1.510)
WorkLifeScore(*Office*)	−0.001	−0.003**
	(−0.254)	(−2.142)
OfficeIndSpecialist	0.001	−0.006**
	(0.338)	(−2.144)
OfficeSize	0.002	−0.002
	(0.927)	(−1.600)
Controls	Included	Included
n	905	1,447
Adj. R^2	0.144	0.159

Panel D: Controlling for Client Satisfaction

	Dependent Variable	
	DA **(1)**	***Restate*** **(2)**
JobSatScore(*Office*)	−0.000	0.013
	(−0.632)	(0.406)
WorkLifeScore(*Office*)	−0.002	−0.181**
	(−1.504)	(−2.440)
ClientSatisfaction	−0.000	−0.072**
	(−0.807)	(−2.410)
OfficeIndSpecialist	−0.002	0.148
	(−1.033)	(1.125)
OfficeSize	0.001	−0.039
	(1.192)	(−0.515)
Controls	Included	Included
n	3,113	3,795
Adj./Pseudo R^2	0.119	0.105

Panel E: Alternative Accrual Measures

	***DA*1[b] (1)**	***DA*2[b] (2)**	***DA*3[b] (3)**	***DA*4[b] (4)**
JobSatScore(*Office*)	0.001	0.000	0.001	0.001
	(1.229)	(0.291)	(0.749)	(0.929)
WorkLifeScore(*Office*)	−0.002*	−0.005*	−0.004*	−0.004**
	(−1.921)	(−1.748)	(−1.820)	(−2.335)
ClientSatisfaction	−0.000	−0.004***	0.001	0.000
	(−0.826)	(−3.013)	(1.186)	(0.342)
OfficeIndSpecialist	−0.001	−0.007	−0.006*	−0.002
	(−0.653)	(−1.178)	(−1.670)	(−0.558)
OfficeSize	0.002*	−0.003	−0.003*	−0.002
	(1.748)	(−0.772)	(−1.781)	(−0.913)
Controls	Included	Included	Included	Included
n	3,113	3,398	3,823	3,856
Adj. R^2	0.257	0.460	0.400	0.458

***, **, * Denote significance at the 0.01, 0.05, and 0.10 levels (two-tailed), respectively.

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TABLE 7 (continued)

[a] Earnings Interval is the level of or change in income before extraordinary items scaled by lagged market value.
[b] *DA*1 is the discretionary accruals measure estimated using the Allen et al. (2013) model; *DA*2 is estimated using the modified Jones model (Dechow et al. 1995; Price et al. 2011); *DA*3 is estimated using the modified Jones model that controls for performance with lagged ROA (Kothari et al. 2005); *DA*4 is estimated using a discretionary accruals model that controls for performance with lagged ROA as per Ashbaugh et al. (2003).
t-statistics (Z-statistics) are in parentheses. All standard errors are clustered by client.
All variables are defined in Appendix A.

measure remains noisy. Second, the reviews are voluntary and, although we conduct tests to examine the internal consistency of the data, the review sample could (as discussed earlier) be drawn from a non-random sample of dissatisfied employees. Last, ours is an association study and we cannot infer a causal relationship between working conditions and audit quality because reviews are voluntarily submitted for reasons unobservable to us.

REFERENCES

Abbott, L., K. Gunny, and T. Zhang. 2013. When the PCAOB talks, who listens? Evidence from stakeholder reaction to GAAP-deficient PCAOB inspection reports of small auditors. *Auditing: A Journal of Practice & Theory* 32 (2): 1–31. https://doi.org/10.2308/ajpt-50374

Allen, E. J., C. R. Larson, and R. G. Sloan. 2013. Accrual reversal, earnings and stock returns. *Journal of Accounting and Economics* 56 (1): 113–129. https://doi.org/10.1016/j.jacceco.2013.05.002

Almer, E. D., J. L. Higgs, and K. L. Hooks. 2005. A theoretical framework of the relationship between public accounting firms and their auditors. *Behavioral Research in Accounting* 17 (1): 1–22. https://doi.org/10.2308/bria.2005.17.1.1

American Institute of Certified Public Accountants (AICPA). 1997. *QC Section 20: System of Quality Control for a CPA Firm's Accounting and Auditing Practice*. New York, NY: AICPA. Available at: https://pcaobus.org//Standards/QC/Pages/QC20.aspx

American Institute of Certified Public Accountants (AICPA). 2004. *AICPA Work/Life and Women's Initiatives 2004 Research—Decade of Changes in the Accounting Profession: Workforce Trends and Human Capital Practices*. New York, NY: AICPA. Available at: https://egrove.olemiss.edu/aicpa_assoc/339

American Institute of Certified Public Accountants (AICPA). 2011. *PCPS CPA Firm Top Issues Survey Commentary*. New York, NY: AICPA.

American Institute of Certified Public Accountants (AICPA). 2014. *PCPS CPA Firm Top Issues Survey Commentary*. New York, NY: AICPA.

American Institute of Certified Public Accountants (AICPA). 2015. *Audit Quality Standards and Related Rules*. New York, NY: AICPA.

Anderson, S. E., B. S. Coffey, and R. T. Byerly. 2002. Formal organizational initiatives and informal workplace practices: Links to work-life conflict and job-related outcomes. *Journal of Management* 28 (6): 787–810.

Ashbaugh, H., R. LaFond, and B. W. Mayhew. 2003. Do nonaudit services compromise auditor independence? Further evidence. *The Accounting Review* 78 (3): 611–639. https://doi.org/10.2308/accr.2003.78.3.611

Bartov, E., D. Givoly, and C. Hayn. 2002. The rewards to meeting or beating earnings expectations. *Journal of Accounting and Economics* 33 (2): 173–204. https://doi.org/10.1016/S0165-4101(02)00045-9

Becker, C. L., M. L. DeFond, J. Jiambalvo, and K. R. Subramanyam. 1998. The effect of audit quality on earnings management. *Contemporary Accounting Research* 15 (1): 1–24. https://doi.org/10.1111/j.1911-3846.1998.tb00547.x

Bhagat, R. S. 1982. Conditions under which stronger job performance-job satisfaction relationships may be observed: A closer look at two situational contingencies. *Academy of Management Journal* 25 (40): 772–789.

Bills, K. L., Q. T. Swanquist, and R. L. Whited. 2016. Growing pains: Audit quality and office growth. *Contemporary Accounting Research* 33 (1): 288–313. https://doi.org/10.1111/1911-3846.12122

Blankley, A. I., D. N. Hurtt, and J. E. MacGregor. 2012. Abnormal audit fees and restatements. *Auditing: A Journal of Practice & Theory* 31 (1): 79–96. https://doi.org/10.2308/ajpt-10210

Bowling, N. A. 2007. Is the job satisfaction–job performance relationship spurious? A meta-analytic examination. *Journal of Vocational Behavior* 71 (2): 167–185. https://doi.org/10.1016/j.jvb.2007.04.007

Brown, S. P., and R. A. Peterson. 1993. Antecedents and consequences of salesperson job satisfaction: Meta-analysis and assessment of causal effects. *JMR, Journal of Marketing Research* 30 (1): 63–77. https://doi.org/10.1177/002224379303000106

Buchheit, S., D. W. Dalton, N. L. Harp, and C. W. Hollingsworth. 2016. A contemporary analysis of accounting professionals' work-life balance. *Accounting Horizons* 30 (1): 41–62. https://doi.org/10.2308/acch-51262

Burgstahler, D., and I. Dichev. 1997. Earnings management to avoid earnings decreases and losses. *Journal of Accounting and Economics* 24 (1): 99–126. https://doi.org/10.1016/S0165-4101(97)00017-7

Burke, R. J., and E. R. Greenglass. 1999. Work–family conflict, spouse support, and nursing staff well-being during organizational restructuring. *Journal of Occupational Health Psychology* 4 (4): 327–336. https://doi.org/10.1037/1076-8998.4.4.327

Byzalov, D., and S. Basu. 2016. Conditional conservatism and disaggregated bad news indicators in accrual models. *Review of Accounting Studies* 21 (3): 859–897. https://doi.org/10.1007/s11142-016-9361-3

Carcello, J. V., and C. Li. 2013. Costs and benefits of requiring an engagement partner signature: Recent experience in the United Kingdom. *The Accounting Review* 88 (5): 1511–1546. https://doi.org/10.2308/accr-50450

Carlin, B. I., and S. Gervais. 2009. Work ethic, employment contracts, and firm value. *The Journal of Finance* 64 (2): 785–821. https://doi.org/10.1111/j.1540-6261.2009.01449.x

Carson, E., N. L. Fargher, M. A. Geiger, C. S. Lennox, K. Raghunandan, and M. Willekens. 2013. Audit reporting for going-concern uncertainty: A research synthesis. *Auditing: A Journal of Practice & Theory* 32 (Supplement 1): 353–384. https://doi.org/10.2308/ajpt-50324

Chamberlain, A. 2017. *What Matters More to Your Workforce than Money*. Brighton, MA: Harvard Business Review. Available at: https://hbr.org/2017/01/what-matters-more-to-your-workforce-than-money

Dalton, D. W., S. Buchheit, and J. J. McMillan. 2014. Audit and tax career paths in public accounting: An analysis of student and professional perceptions. *Accounting Horizons* 28 (2): 213–231. https://doi.org/10.2308/acch-50665

Dechow, P. M., R. G. Sloan, and A. P. Sweeney. 1995. Detecting earnings management. *The Accounting Review* 70 (2): 193–225.

DeFond, M., and J. Zhang. 2014. A review of archival auditing research. *Journal of Accounting and Economics* 58 (2–3): 275–326. https://doi.org/10.1016/j.jacceco.2014.09.002

DeFond, M. L., K. Raghunandan, and K. R. Subramanyam. 2002. Do non-audit service fees impair auditor independence? Evidence from going concern audit opinions. *Journal of Accounting Research* 40 (4): 1247–1274. https://doi.org/10.1111/1475-679X.00088

Edmans, A. 2011. Does the stock market fully value intangibles? Employee satisfaction and equity prices. *Journal of Financial Economics* 101 (3): 621–640. https://doi.org/10.1016/j.jfineco.2011.03.021

Edmans, A. 2012. The link between employee satisfaction and firm value, with implications for corporate social responsibility. *The Academy of Management Perspectives* 26 (4): 1–19. https://doi.org/10.5465/amp.2012.0046

Eshleman, J. D., and P. Guo. 2014. Do Big 4 auditors provide higher audit quality after controlling for the endogenous choice of auditor? *Auditing: A Journal of Practice & Theory* 33 (4): 197–219. https://doi.org/10.2308/ajpt-50792

Feldmann, D., W. Read, and M. Abdolmohammadi. 2009. Restatements, audit fees, and the moderating effect of CFO turnover. *Auditing: A Journal of Practice & Theory* 28 (1): 205–223. https://doi.org/10.2308/aud.2009.28.1.205

Francis, J. R. 2011. A framework for understanding and researching audit quality. *Auditing: A Journal of Practice & Theory* 30 (2): 125–152. https://doi.org/10.2308/ajpt-50006

Francis, J. R., P. N. Michas, and M. D. Yu. 2013. Office size of Big 4 auditors and client restatements. *Contemporary Accounting Research* 30 (4): 1626–1661. https://doi.org/10.1111/1911-3846.12011

Frankel, R. A., M. F. Johnson, and K. K. Nelson. 2002. The relation between auditors' fees for nonaudit services and earnings management. *The Accounting Review* 77 (s-1 Supplement): 71–105. https://doi.org/10.2308/accr.2002.77.s-1.71

Frone, M. R., M. Russell, and G. M. Barnes. 1996. Work–family conflict, gender, and health-related outcomes: A study of employed parents in two community samples. *Journal of Occupational Health Psychology* 1 (1): 57–69. https://doi.org/10.1037/1076-8998.1.1.57

Gardner, D. G., and J. L. Pierce. 1998. Self-esteem and self-efficacy within the organizational context. *Group & Organization Management* 23 (1): 48–70. https://doi.org/10.1177/1059601198231004

Gow, I. D., D. F. Larcker, and P. C. Reiss. 2016. Causal inference in accounting research. *Journal of Accounting Research* 54 (2): 477–523. https://doi.org/10.1111/1475-679X.12116

Gramling, A. A., J. Krishnan, and Y. Zhang. 2011. Are PCAOB-identified audit deficiencies associated with a change in reporting decisions of triennially inspected audit firms? *Auditing: A Journal of Practice & Theory* 30 (3): 59–79. https://doi.org/10.2308/ajpt-10048

Green, T. C., R. Huang, Q. Wen, and D. Zhou. 2019. Crowdsourced employer reviews and stock returns. *Journal of Financial Economics* 134 (1): 236–251. https://doi.org/10.1016/j.jfineco.2019.03.012

Hales, J., J. R. Moon, Jr., and L. A. Swenson. 2018. A new era of voluntary disclosure? Empirical evidence on how employee postings on social media relate to future corporate disclosures. *Accounting, Organizations and Society* 68-69 (July): 88–108. https://doi.org/10.1016/j.aos.2018.04.004

Harter, J. K., F. L. Schmidt, and T. L. Hayes. 2002. Business-unit-level relationship between employee satisfaction, employee engagement, and business outcomes: A meta-analysis. *The Journal of Applied Psychology* 87 (2): 268–279. https://doi.org/10.1037/0021-9010.87.2.268

Hermanson, D. R., R. W. Houston, C. M. Stefaniak, and A. M. Wilkins. 2016. The work environment in large audit firms: Current perceptions and possible improvements. *Current Issues in Auditing* 10 (2): A38–A61. https://doi.org/10.2308/ciia-51484

Herzberg, F., B. Mausner, and B. Snyderman. 1959. *Work and Motivation*. New York, NY: Wiley.

Hogan, C. E., and D. C. Jeter. 1999. Industry specialization by auditors. *Auditing: A Journal of Practice & Theory* 18 (1): 1–17. https://doi.org/10.2308/aud.1999.18.1.1

Hoopes, J. L., K. J. Merkley, J. Pacelli, and J. H. Schroeder. 2018. Audit personnel salaries and audit quality. *Review of Accounting Studies* 23 (3): 1096–1136. https://doi.org/10.1007/s11142-018-9458-y

Hope, O-K., C. Li, A-P. Lin, and M. Rabier. 2020. *Happy Analysts*. Available at: https://ssrn.com/abstract=3251602

American Accounting Association

Hribar, P., and D. C. Nichols. 2007. The use of unsigned earnings quality measures in tests of earnings management. *Journal of Accounting Research* 45 (5): 1017–1053. https://doi.org/10.1111/j.1475-679X.2007.00259.x

Hu, N., J. Zhang, and P. A. Pavlou. 2009. Overcoming the J-shaped distribution of product reviews. *Communications of the ACM* 52 (10): 144–147. https://doi.org/10.1145/1562764.1562800

Huang, M., P. Li, F. Meschke, and J. P. Guthrie. 2015. Family firms, employee satisfaction, and corporate performance. *Journal of Corporate Finance* 34 (10): 108–127. https://doi.org/10.1016/j.jcorpfin.2015.08.002

Huang, M., A. Masli, F. Meschke, and J. P. Guthrie. 2017. Clients' workplace environment and corporate audits. *Auditing: A Journal of Practice & Theory* 36 (4): 89–113. https://doi.org/10.2308/ajpt-51691

Iaffaldano, M. T., and P. M. Muchinsky. 1985. Job satisfaction and job performance: A meta-analysis. *Psychological Bulletin* 97 (2): 251–273. https://doi.org/10.1037/0033-2909.97.2.251

International Auditing and Assurance Standards Board (IAASB). 2014. *A Framework for Audit Quality Key Elements that Create an Environment for Audit Quality*. Available at: https://www.iaasb.org/system/files/publications/files/A-Framework-for-Audit-Quality-Key-Elements-that-Create-an-Environment-for-Audit-Quality-2.pdf

Jing, C., K. Keasey, I. Lim, and B. Xu. 2019. Financial constraints and employee satisfaction. *Economics Letters* 183: 108599. https://doi.org/10.1016/j.econlet.2019.108599

Johnson, E. N., D. J. Lowe, and P. M. J. Reckers. 2008. Alternative work arrangements and perceived career success: Current evidence from the Big Four firms in the U.S. *Accounting, Organizations and Society* 33 (1): 48–72. https://doi.org/10.1016/j.aos.2006.12.005

Judge, T. A., C. J. Thoresen, J. E. Bono, and G. K. Patton. 2001. The job satisfaction–job performance relationship: A qualitative and quantitative review. *Psychological Bulletin* 127 (3): 376–407. https://doi.org/10.1037/0033-2909.127.3.376

Kinnunen, U., and S. Mauno. 1998. Antecedents and outcomes of work-family conflict among employed women and men in Finland. *Human Relations* 51 (2): 157–177. https://doi.org/10.1177/001872679805100203

Konrad, A., and R. Mangel. 2000. The impact of work-life programs on firm productivity. *Strategic Management Journal* 21 (12): 1225–1237. https://doi.org/10.1002/1097-0266(200012)21:12<1225::AID-SMJ135>3.0.CO;2-3

Korn Ferry. 2017. *Korn Ferry Survey: Two-Thirds of Professionals Would Prefer a Promotion with No Raise Over a Raise with No Promotion in the New Year*. Los Angeles, CA: Korn Ferry. Available at: https://www.kornferry.com/about-us/press/korn-ferry-survey-two-thirds-of-professionals-would-prefer-a-promotion-with-no-raise-over-a-raise-with-no-promotion-in-the-new-year

Kornberger, M., C. Carter, and A. Ross-Smith. 2010. Changing gender domination in a Big Four accounting firm: Flexibility, performance and client service in practice. *Accounting, Organizations and Society* 35 (8): 775–791. https://doi.org/10.1016/j.aos.2010.09.005

Kossek, E. E., and C. Ozeki. 1998. Work–family conflict, policies, and the job–life satisfaction relationship: A review and directions for organizational behavior–human resources research. *The Journal of Applied Psychology* 83 (2): 139–149. https://doi.org/10.1037/0021-9010.83.2.139

Kothari, S. P., A. J. Leone, and C. E. Wasley. 2005. Performance matched discretionary accrual measures. *Journal of Accounting and Economics* 39 (1): 163–197. https://doi.org/10.1016/j.jacceco.2004.11.002

Lawrence, A., M. Minutti-Meza, and P. Zhang. 2011. Can Big 4 versus Non-Big 4 differences in audit-quality proxies be attributed to client characteristics? *The Accounting Review* 86 (1): 259–286. https://doi.org/10.2308/accr.00000009

Lee, Y., S. Ng, T. Shevlin, and A. Venkat. 2020. The effects of tax avoidance news on employee perceptions of managers and firms: Evidence from Glassdoor.com Ratings. *The Accounting Review* TAR-2019-0148. https://doi.org/10.2308/TAR-2019-0148

Lennox, C. S., and B. Li. 2014. Accounting misstatements following lawsuits against auditors. *Journal of Accounting and Economics* 57 (1): 58–75. https://doi.org/10.1016/j.jacceco.2013.10.002

Lobo, G. J., and Y. Zhao. 2013. Relation between audit effort and financial report misstatements: Evidence from quarterly and annual restatements. *The Accounting Review* 88 (4): 1385–1412. https://doi.org/10.2308/accr-50440

Lopez, E. M. 1982. A Test of the self-consistency theory of the job performance–job satisfaction relationship. *Academy of Management Journal* 25 (2): 335–348.

López, D. M., and G. F. Peters. 2012. The effect of workload compression on audit quality. *Auditing: A Journal of Practice & Theory* 31 (4): 139–165. https://doi.org/10.2308/ajpt-10305

MacEwen, K. E., and J. Barling. 1994. Daily consequences of work interference with family and family interference with work. *Work and Stress* 8 (3): 244–254. https://doi.org/10.1080/02678379408259996

Madsen, P. E. 2013. The integration of women and minorities into the auditing profession since the civil rights period. *The Accounting Review* 88 (6): 2145–2177. https://doi.org/10.2308/accr-50540

Maslow, A. H. 1943. A theory of human motivation. *Psychological Review* 50 (4): 370–396. https://doi.org/10.1037/h0054346

McGregor, D. 1960. *The Human Side of Enterprise*. New York, NY: McGraw-Hill.

Murphy, K. R., and C. O. Davidshofer. 1988. *Psychological Testing: Principles and Applications*. Englewood Cliffs, NJ: Prentice-Hall.

Newton, N. J., D. Wang, and M. S. Wilkins. 2013. Does a lack of choice lead to lower quality? Evidence from auditor competition and client restatements. *Auditing: A Journal of Practice & Theory* 32 (3): 31–67. https://doi.org/10.2308/ajpt-50461

Nunnally, J. C. 1978. *Psychometric Theory*. 2nd edition. New York, NY: McGraw-Hill.

Oswald, A. J., E. Proto, and D. Sgroi. 2015. Happiness and productivity. *Journal of Labor Economics* 33 (4): 789–822. https://doi.org/10.1086/681096

Padgett, M., K. P. Gjerde, S. B. Hughes, and C. J. Born. 2005. The relationship between pre-employment expectations, experiences, and length of stay in public accounting. *Journal of Leadership & Organizational Studies* 12 (1): 82–102. https://doi.org/10.1177/107179190501200108

Persellin, J., J. J. Schmidt, S. D. Vandervelde, and M. S. Wilkins. 2019. Auditor perceptions of audit workloads, audit quality, and job satisfaction. *Accounting Horizons* 33 (4): 95–117. https://doi.org/10.2308/acch-52488

Peterson, R. A. 1994. A meta-analysis of Cronbach's coefficient alpha. *The Journal of Consumer Research* 21 (2): 381–391. https://doi.org/10.1086/209405

Petty, M. M., G. W. McGee, and J. W. Cavender. 1984. A meta-analysis of the relationships between individual job satisfaction and individual performance. *Academy of Management Review* 9 (4): 712–721. https://doi.org/10.5465/amr.1984.4277608

Price, R. A. III, N. Y. Sharp, and D. A. Wood. 2011. Detecting and predicting accounting irregularities: A comparison of commercial and academic risk measures. *Accounting Horizons* 25 (4): 755–780. https://doi.org/10.2308/acch-50064

Public Company Accounting Oversight Board (PCAOB). 2013. *Audit Quality Indicators – Discussion*. Washington, D.C.: PCAOB. Available at: https://pcaobus.org/news/events/documents/05152013_sagmeeting/audit_quality_indicators.pdf

Public Company Accounting Oversight Board (PCAOB). 2014. *A Call to Action for Future Auditors*. Washington, D.C.: PCAOB. Available at: https://pcaobus.org//News/Speech/Pages/03282014_BAS.aspx

Public Company Accounting Oversight Board (PCAOB). 2015. *Concept Release On Audit Quality Indicators*. Washington, D.C.: PCAOB. Available at: https://pcaobus.org/about/rules-rulemaking/rulemaking-dockets/docket-041-concept-release-on-audit-quality-indicators

PWC (PWC, recruitment material). 2017. *Our Focus on Audit Quality*. London, U.K.: PWC. Available at: https://www.pwc.com/us/en/audit-assurance-services/assets/pwc-our-focus-on-audit-quality-2017.pdf

Reichelt, K. J., and D. Wang. 2010. National and office-specific measures of auditor industry expertise and effects on audit quality. *Journal of Accounting Research* 48 (3): 647–686. https://doi.org/10.1111/j.1475-679X.2009.00363.x

Reynolds, J. K., and J. R. Francis. 2000. Does size matter? The influence of large clients on office-level auditor reporting decisions. *Journal of Accounting and Economics* 30 (3): 375–400. https://doi.org/10.1016/S0165-4101(01)00010-6

Rich, G. A. 1997. The sales manager as a role model effects on trust, job satisfaction, and performance of salespeople. *Journal of the Academy of Marketing Science* 25 (4): 319–328. https://doi.org/10.1177/0092070397254004

Sweeney, J. T., and S. L. Summers. 2002. The effect of the busy season workload on public accountants' job burnout. *Behavioral Research in Accounting* 14 (1): 223–245. https://doi.org/10.2308/bria.2002.14.1.223

Teoh, S. H. 2018. The promise and challenges of new datasets for accounting research. *Accounting, Organizations and Society* 68-69 (July): 109–117. https://doi.org/10.1016/j.aos.2018.03.008

Whitman, D. S., D. L. van Rooy, and C. Viswesvaran. 2010. Satisfaction, citizenship behaviors, and performance in work unit: A meta-analysis of collective construct relations. *Personnel Psychology* 63 (1): 41–81. https://doi.org/10.1111/j.1744-6570.2009.01162.x

Zingales, L. 2000. In search of new foundations. *The Journal of Finance* 55 (4): 1623–1653. https://doi.org/10.1111/0022-1082.00262

APPENDIX A

Definitions

Variables	Description	Source
Employee Ratings Analysis		
OverallRating	An employee's overall assessment of their employer on a Likert-type scale of one to five stars (1 = very dissatisfied, and 5 = very satisfied) submitted to Glassdoor.com.	Glassdoor
CompBenefits	Employee's assessment of "compensation and benefits" at their employer on a Likert-type scale of one to five stars (1 = very dissatisfied, and 5 = very satisfied).	Glassdoor
WorkLife	Employee's assessment of "work-life balance" at their employer on a Likert-type scale of one to five stars (1 = very dissatisfied, and 5 = very satisfied).	Glassdoor
SrManagement	Employee's assessment of "senior management" at their employer on a Likert-type scale of one to five stars (1 = very dissatisfied, and 5 = very satisfied).	Glassdoor
CareerOpps	Employee's assessment of "career opportunities" at their employer on a Likert-type scale of one to five stars (1 = very dissatisfied, and 5 = very satisfied).	Glassdoor
CultureValues	Employee's assessment of "culture and values" at their employer on a Likert-type scale of one to five stars (1 = very dissatisfied, and 5 = very satisfied).	Glassdoor
EmpFullTime	Coded 1 if reviewer discloses employment status and identifies as "full-time employee," and 0 otherwise.	Glassdoor
Audit	Coded 1 if reviewer's job title contains "audit" or "assurance," and 0 otherwise.	Glassdoor
Tax	Coded 1 if reviewer's job title contains "tax," and 0 otherwise.	Glassdoor
Female	Coded 1 if reviewer discloses gender and identifies as "Female," and 0 otherwise.	Glassdoor
Manager	Coded 1 if reviewer's job title contains "manag," and 0 otherwise.	Glassdoor
BusySeason	Coded 1 if review is submitted during the busy season (December through April), and 0 otherwise.	Glassdoor
SeriousDeficiency	Coded 1 if a Glassdoor review is submitted during the six-month period after a PCAOB inspection of the audit firm finds a serious deficiency (i.e., related to a GAAP departure or resulting in a restatement), and 0 otherwise (Gramling et al. 2011; Abbott et al. 2013).	Audit Analytics
Inspection	Coded 1 if a Glassdoor review is submitted during a PCAOB inspection of the audit firm.	Audit Analytics
Audit Quality Analysis		
DA	Signed discretionary accruals, where discretionary accruals are the abnormal working capital accruals estimated annually at the industry level (two-digit SIC) following Byzalov and Basu's (2016) model and variable definitions.	COMPUSTAT
GoingConcern	Coded 1 if client receives a going concern opinion in a given fiscal year, and 0 otherwise.	Audit Analytics
Restate	Coded 1 if any portion of current year's financials fall within the restatement period of any future restatements, and 0 otherwise (Newton et al. 2013).	Audit Analytics
JobSatScore	First principal component (eigenvalue > 1) of current audit-employee ratings constructed using annual average values for: *OverallRating, CompBenefits, CareerOpps, SrManagement,* and *WorkLife* (see Table 4, Panel B).	Glassdoor
WorkLifeScore	Second principal component (eigenvalue > 1) of current audit-employee ratings constructed using annual average values for: *OverallRating, CompBenefits, CareerOpps, SrManagement,* and *WorkLife* (See Table 4, Panel B).	Glassdoor
Big4	Coded 1 if auditor is PwC, KPMG, EY, or Deloitte, and 0 otherwise.	Glassdoor/ COMPUSTAT/ AuditAnalytics
AudTenure	Natural log of the number of consecutive years a client is audited by current auditor.	COMPUSTAT
IndSpecialist	Coded 1 if auditor has the largest audit fee revenue in the client's industry (by two-digit SIC code) in a particular year, and 0 otherwise.	Audit Analytics
ClientAge	Natural log of the number of years a client appears on COMPUSTAT.	COMPUSTAT
BusinessSeg	Natural log of client's business segments.	COMPUSTAT
GeographicSeg	Natural log of client's geographic segments.	COMPUSTAT
ClientSize	Natural log of total assets (AT).	COMPUSTAT
BTM	Book-to-Market.	COMPUSTAT

(continued on next page)

APPENDIX A (continued)

Variables	Description	Source
CFO	Cash flow from operations (OANCF) scaled by lagged total assets (AT).	COMPUSTAT
ROA	Earnings before extraordinary items (IB) divided by lagged total assets (AT).	COMPUSTAT
Leverage	Leverage is total long-term liabilities (DLTT) scaled by total assets (AT).	COMPUSTAT
Inventory	Total inventory (INVT) divided by lagged total assets (AT).	COMPUSTAT
Receivables	Total accounts receivables (RECT) divided by lagged total assets (AT).	COMPUSTAT
Financing	Coded 1 if the sum of new long-term debt (DLTIS) plus new equity (SSTK) exceeds 2 percent of lagged total assets (AT).	COMPUSTAT
Merger	Coded 1 if client has an acquisition that contributes to sales (AQS $>$ 0), and 0 otherwise.	COMPUSTAT
Issuance	Coded 1 if new long-term debt (DLTIS) or new equity (SSTK) is greater than 0, and 0 otherwise.	COMPUSTAT
MaterialWeakness	Coded 1 if client discloses at least one material weakness in internal control over financial reporting in a given fiscal year, and 0 otherwise.	Audit Analytics
Loss	Coded 1 if there is a loss (IB $<$ 0), and 0 otherwise.	COMPUSTAT
LitRisk	Coded 1 if firm operates in a high-litigation industry (two-digit SIC codes: 28, 35, 36, 38, 60, 67, 73), and 0 otherwise (Hogan and Jeter 1999).	COMPUSTAT
SaleChange	Annual change in sales (SALE) scaled by lagged total assets (AT).	COMPUSTAT
ROAChange	Annual change in earnings (IB) scaled by lagged total assets (AT).	COMPUSTAT
SaleVolatility	Standard deviation of sales (SALE) to lagged total assets (AT) ratio for the last five years.	COMPUSTAT
CurrrentAccrualsLag	Last year's total current accruals equal to net income before extraordinary items (IB) plus depreciation and amortization (DP) minus cash flow from operations (OANCF) divided by lagged total assets (AT).	COMPUSTAT
Foreign	Coded 1 if firm has foreign net income or loss (PIFO), and 0 otherwise.	COMPUSTAT
Robustness Test Controls		
WorkLife(Raw)	The annual average values of *WorkLife* constructed using current audit-employee ratings.	Glassdoor
OverallRating(Raw)	The annual average values of *OverallRating* constructed using current audit-employee ratings.	Glassdoor
GoingConcernLag	Coded 1 if client receives a going concern opinion in the prior fiscal year, and 0 otherwise.	Audit Analytics
ClientSatisfaction	The principal component (eigenvalue $>$ 1) of client's current employee ratings constructed using annual average values for: *OverallRating, CompBenefits, CareerOpps, SrManagement,* and *WorkLife*.	Glassdoor
JobSatScore(Office)	The first principal component of current audit-employee ratings constructed using city-level annual average values for: *OverallRating, CompBenefits, CareerOpps, SrManagement,* and *WorkLife* matched to the closest auditor city within 30 miles.	Glassdoor
WorkLifeScore(Office)	The second principal component of current audit-employee ratings constructed using state-level annual average values for: *OverallRating, CompBenefits, CareerOpps, SrManagement,* and *WorkLife* matched to the closest auditor city within 30 miles.	Glassdoor
OfficeIndSpecialist	Coded 1 if auditor office has the largest annual audit fees in the client's industry (by two-digit SIC code) on a city level, and 0 otherwise.	Audit Analytics
OfficeSize	Natural log of annual audit fees collected by the office.	Audit Analytics

APPENDIX B
Distribution of Employee Ratings