



Workplace financial transparency and Job distress[☆]

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ABSTRACT

Social scientists have long been interested in questions of organizational culpability, workers' rights, and workplace equity. This study focuses on a particularly important aspect of managerial practice—financial transparency—and its implications for job-related distress. Drawing on 2011 British Workplace Employment Relations Survey data, we interrogate the transparency-distress relationship and whether it is mediated or moderated by other organizational dynamics, such as managerial relations. Our hierarchical analyses of nearly 20,000 workers across over 2,000 workplace establishments reveal that managerial communication and trust surrounding organizational financial transparency reduces job distress—an ameliorating effect that is both markedly robust and stronger in firms with limited collective bargaining coverage. Positive supervisory appraisals serve as a major mechanism underlying this relationship, with job security and organizational commitment playing a more moderate role. We conclude by highlighting our core findings in these regards and especially the centrality of social-interactional factors above and beyond monetary considerations.

The workplace is a major source of stress in modern societies—a source that contributes to an increasing burden of chronic illnesses and mental health problems in the United States and other countries (Brand et al., 2007; Burgard and Lin 2013; Golden 2015; Kalleberg 2009, 2011, 2018; Meneton et al., 2018; Pfeffer 2018; Schneider and Harknett 2019). It is for this reason that large bodies of historical and contemporary work have centered on how improving work conditions (e.g., increasing schedule flexibility) can confer partial remedies and bolster well-being (for instance, see Card and Krueger, 1995; Kalem 2009; Kalleberg 2018; Kelly et al. 2011; Moen et al. 2011; Schieman et al. 2009; Schneider and Harknett 2019; Tausig 1999). Such prior work is informative, pointing to ways in which individual health and mental health are often shaped by and within the institutional and organizational milieu that individuals and groups traverse and the structural and relational encounters therein (see also Kalleberg 2018; Schieman et al., 2009; Roscigno et al., 2018).

Following more general sociological concerns with employment equity, workers' rights, and corporate accountability, we focus in this study on one potentially crucial aspect of the organizational and workplace experience: the degree to which companies disclose financial information to employees and the implications for worker well-being. How does the dissemination of organizational financial information—usually referred to as “financial transparency”—impact the experience worker's levels of job-specific distress? Financial transparency and its roots in organizational policies and procedures has potential implications for managerial interaction with subordinates, information flow and reward structures and, thus, aligns well with large bodies of workplace inequality and organizational

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research. Consider, for instance, the ways in which financial transparency or lack thereof could either legitimate or undermine bargaining power, alter negotiation capacities, shape job stability and commitment, impact employers' accountability, and structure the worker-employer relationship (Evans and Rauch 1999; Goodsell 1994; Burgard et al. 2009; Kuhnert and Vance 1992; Rosenfeld and Denice 2015). Each plausibly has consequences, either directly or indirectly, for worker stress and mental health.

In an age of industrial deregulation and reductions in union power (Kalleberg 2009), financial transparency is arguably a core dimension of workplace leverage and power (Rosenfeld and Denice 2015). Financial information asymmetries privilege employers, compromise worker power, and reduce the capacity of lower status actors to stake claims to organizational revenue. Opening up an organization's books to workers, in contrast, can shift the power downward and legitimate worker claims for higher pay and better benefits. In this regard, nonunion employers sometimes disclose financial information as a strategy to avoid unionization and improve worker productivity (Freeman and Kleiner 1990). While some literature has focused on the productivity and monetary consequences of financial transparency (Kleiner and Bouillon 1991; Rosenfeld and Denice 2015), little work considers how workers are affected social-psychologically and whether such influence operates through monetary returns or nonmaterial mechanisms.

Building on recent analyses by Rosenfeld and Denice's (2015), we operationalize financial transparency as employees' report of how well their managers disclose workplace financial information and analyze the same comprehensive data derived from the 2011 British Workplace Employment Relations Survey (WERS). We recognize that financial information can be disseminated at various levels (i.e., throughout the entire organization, at work-unit level, or at individual level) and that the WERS data lacks some precision in this regard. Since financial transparency as a managerial practice is not an individualized process taking place in dyads, we aggregate employee responses to the workplace level. By doing so, we also mitigate common-source bias that could be induced by employee responses to both financial transparency and job distress.¹ We further utilize an instrumental variable method in supplementary analyses to mitigate such bias.

Unlike most other sources, including workplace survey data in the U.S., the WERS offers especially pertinent indicators of both financial transparency and job-specific distress along with significant heterogeneity in workplace experiences and worker attributes across an industrially diverse body of establishments. This data, along with the confidence and generalizability it affords, allows us to: (1) test the relationship between financial transparency and job-specific distress after accounting for many potentially confounding individual, occupational, managerial, and firm-level characteristics; (2) systematically probe potential underlying mechanisms; and (3) interrogate potential conditional associations with worker and workplace attributes. We conclude by discussing our key findings and return to the more general relevance of the patterns we uncover for work, organizations, and mental health literatures.

1. Conceptual framework and hypotheses

Prior scholarship has suggested that organizations have become somewhat less hierarchical and thus structurally flatter over time (Read 1965; Tomer 1995; Rajan and Wulf 2006). One consequence may be greater transparency with regard to policies and procedures related to the sharing of financial information, although some prior work suggests that any transparency or related information is often ambiguous at best (Holland 1999; Sherman and Young 2016). Research surrounding financial transparency specifically has tended to examine whether greater openness boosts worker productivity and company profits (e.g., Kleiner and Bouillon 1988; 1991; Freeman and Kleiner 1990) or shapes the compensation workers receive (e.g., Rosenfeld and Denice 2015; Morishima 1991). No analyses of which we are aware, however, have considered how workers job-related distress levels might be affected or why. There are nevertheless relevant literatures from which we can draw that provide important conceptual and empirical guideposts.

1.1. Bureaucratic rationality, rules, and managerial practices

Rationality and formality—defining features of bureaucracy that are forged by integrated hierarchy, division of expertise, and formalized rules (Roscigno et al. 2018)—are consequential for workplace experiences and, thus, potentially important for stress and mental health. This is because bureaucracy and the formality and clarity of rules and procedures, it is assumed, constrain malfeasance (Bielby 2000; Reskin 2000) and bolster accountability, functional effectiveness, and productivity (Weber 1946; Evans and Rauch 1999; Goodsell 1994). The benefits, in fact, may accrue not only to workplaces, but to workers too through predictability, job satisfaction, and a sense of job stability and security (Roscigno et al. 2018).

We assume that financial transparency as a specific dimension of bureaucratic formality and clarity, in its ideal sense anyway, will be largely beneficial in reducing job-related distress by providing accountability and predictability relative to firm functioning (Evans and Rauch 1999; Goodsell 1994) and job security (Roscigno et al. 2018). Indeed, some prior work points to job security as particularly relevant for worker mental health and stress levels (Burgard et al. 2009; Kuhnert and Vance 1992).

Our operationalization of financial transparency, as we explain in more detail within our Methods section, is connected to managerial practices and interactions that are, more often than not, structured to varying degrees by bureaucratic rules and policies. This should not be taken to mean that all managers follow the same organizational or bureaucratic scripts or do not have some discretion in their interactions and sharing with subordinates. They surely do. Rather, what we are suggesting (and that our data allow for analyses of) is that, to the extent financial information is shared: (1) immediate supervisors will likely be the conduit through which this occurs; and, (2) when it occurs, it will be beneficial to workers through perceptions of job stability and security. More specifically:

¹ We thank editor Dr. Yang Cao for making this suggestion.

Hypothesis 1. Workplace financial transparency will increase workers' sense of job stability and security and, consequently, reduce job-related distress.

1.2. Transparency and power relations

Perspectives on power are similarly worth considering. As noted by Rosenfeld and Denice (2015: 1047), "knowledge of organizational finances is a key resource in the claims-making process, one that potentially augments workers' power in wage negotiations by reducing information asymmetries."

Financial transparency can confer to workers motivation, legitimacy, and capability to negotiate their pay if wage setting is related to the bargaining process within workplaces (Rosenfeld and Denice 2015). Workers without access to financial information, on the other hand, lack a framework in which to interpret underpayment and what their wages could reasonably be (Estlund 2011). Dissemination of financial information at the workplace level generally increases workers' knowledge of an organization's finances, arguably empowers workers, and motivates them to bargain. It offers informational leverage that can legitimate demands for higher pay, raises the possibility of individual or collective use of this capability, and likely heightens the probability of bargaining success (Ferrante and Rousseau 2001).

Financial transparency, according to such insights, can have the effect of redistributing power in the workplace, at least to some extent, and may translate into greater rewards (e.g., wages) for individual workers or group of workers (Rosenfeld and Denice 2015). If this is the case, then it is plausible that the resulting higher wages will reduce job-related distress. This leads to our second hypothesis:

Hypothesis 2. Workplace financial transparency will increase workers' wages and consequently reduce job-related distress.

Any potential impact of financial transparency on workers' wages, of course, could be confounded by collective bargaining of wage agreements and unions. This is because firms that disclose financial information to their employees might simultaneously set up policies to protect employees' rights to negotiate their salaries. Moreover, unions have stricken access to privileged financial information and gained leverage in negotiations of contracts, wages, and benefits (Tracy 1986). Financial disclosure, in fact, is higher in unionized compared to non-union establishments, although non-union employers may also disclose financial information to avoid unionization (Kleiner and Bouillon 1988). It is for these reasons that our modeling considers and controls for related policies and union membership.

1.3. High-commitment management

Shifting power downwards through information sharing may not only empower workers and legitimate their claims for higher rewards. It also has the capacity to break down potential mistrust of employers and superordinates and strengthen worker commitment and loyalty to the organization. Such nonmaterial mechanisms are emphasized in theoretical work surrounding high-commitment management.

High-commitment managerial practices aim to increase workers' motivation and autonomy, align interests with those of the firm, and increase organizational trust and commitment (Rosenfeld and Denice 2015). Such practices include the use of teams, selective hiring practices, greater employment security, training opportunities, competitively higher pay, and financial transparency (Pfeffer 1998). Sharing information (e.g., financial information, business and strategic plans) can facilitate communication between employers and employees and strengthen commitment (Pfeffer, 1998). Heightened connection to the firm and sense of belonging and community, in the best scenario, can help mitigate worker uncertainty and stress. This leads to our third hypothesis:

Hypothesis 3. Workplace financial transparency will strengthen workers' commitment to their firms and consequently reduce their job-related distress.

Managerial communication and transparency may not only increase workers' loyalty and commitment to the firm, but also directly improve the relationship between managers and their subordinates. Although workers are embedded in the broader context of a given firm, their daily activities and experiences tend to be more directly shaped by proximate relations with immediate supervisors (Roscigno et al. 2018). Low-quality relationships with supervisors are associated with poor job performance, low levels of job satisfaction, feelings of disapproval, and low self-esteem (Banks et al., 2014; Smith et al. 2003). In this scenario, financial transparency may reduce workers' distress specifically by increasing positive appraisals of managers' integrity (e.g., honesty and fairness) and improving the manager-worker relationship:

Hypothesis 4. Workplace financial transparency will improve workers' appraisals of managers and manager-worker relationship and, consequently, reduce job-related distress.

Since financial transparency might be embedded within a wider system of managerial practices—i.e., managerial practices that aim to increase loyalty and commitment to the firm and positively bolster relationships with managers—controlling for other dimensions of high-commitment management, as we do in our analyses, is essential for effectively distilling the net association between financial transparency and job-related distress. We discuss such controls, along with others noted thus far, in our measurement section that follows.

2. Data and methods

2.1. Data

Our analyses use data from 2,680 British workplaces and 21,981 employees drawn specifically from the 2011 Worker and Employment Relation Study (WERS). The major aim of WERS was to collect a wide range of information regarding employment relations in the UK, including firm/organization characteristics, recruiting and training practices, employee engagement and job satisfaction, and payment systems and pay determination. In order to collect this information, the 2011 WERS consisted of 5 separate questionnaires: The Employment Profile Questionnaire (EPQ); the Management Questionnaire (MQ); the Financial Performance Questionnaire (FPQ); the Worker Representative Questionnaire (WRQ); and the Survey of Employees Questionnaire (SEQ).² We rely on employer and employee datasets, and merge employee data with information about workplaces from the employer dataset. No U.S.-based workplace surveys cover the same depth of information as British WERS; moreover, the WERS includes information about financial transparency that does not exist in all representative U.S. workplace surveys (Rosenfeld and Denice 2015).

We removed 149 of the original 2,680 workplaces owing to missing information on the frequency distribution of employees' wages, which is necessary for the creation of firm mean income and individual income rank within firm. We then merged these employer level data with the employee level data. Approximately 1,046 individuals could not be matched due to the deletion of 149 workplaces, reducing our sample size to 20,935 employees. We further removed 1,332 individuals who do not have a valid response on financial transparency question. An additional 3,834 cases were lost owing to missing or invalid data on perceptions of job security (793), total hours worked (576), race (628), income (250), and job distress (255). Our final sample consists of 15,747 employees.

We also interrogated whether missingness on the dependent variable (i.e., job distress) was related in any systematic way to any key explanatory variables (i.e., workplace financial transparency). Missingness was at random (table available upon request). Table 1 presents descriptive statistics of selected employee and firm characteristics of WERS samples. Appendix 1 and 2 provide a complete listing and description of all the variables used in the analyses.

2.2. Measures

2.2.1. Financial transparency

We operationalize financial transparency as employees' reports of how well their managers disclose workplace financial information, following the measurement set forth by Rosenfeld and Denice (2015). We measure financial transparency with responses to a question that asks employees: "How good would you say managers at this workplace are at keeping employees informed about financial matters, including budgets or profits?" Response categories included "very good," "good," "neither good nor poor," "poor," and "very poor." Approximately 13% and 33% report "very good" and "good," while 29%, 16%, and 10% report "average," "poor," or "very poor." To reduce common-source bias and operationalize transparency at the workplace level, we averaged employee response within each workplace, which ranges from 1 to 5 with mean of 3.22. A higher value indicates more financial transparency at the workplace level.

2.2.2. Job-related distress

The measurement of job-related distress derives from a series of questions that asks employees: "Thinking of the past few weeks, how much of the time has your job made you feel each of the following?" The specific items include the following: feeling tense, depressed, worried, gloomy, uneasy, and miserable. Response choices for each item are as follows: "1 All of the time," "2 Most of the time," "3 Some of the time," "4 occasionally," and "5 Never." In addition, respondents could report "no answer/don't know," which we set to missing. For interpretability purposes, we reverse-coded responses such that higher values reflect a higher frequency of job-related distress. Since the six job distress items are highly inter-correlated ($\alpha = 0.91$)³ and share a singular latent factor based on a factor analysis, we summed the responses to each to create an index of the frequency of job-related distress, ranging from 6 to 30 (mean = 11). We then logged this measure to correct for skewness and to approximate a standard Gaussian distribution. To check the robustness of the results, we also tested each job distress item separately and found results to be consistent.

2.2.3. Mediators

We proposed earlier several potential mediators in the financial transparency-distress relationship. These include sense of job

² The EPQ is a self-administered questionnaire that is completed by a manager and that collects detailed information regarding the size and characteristics of the employees at the firm. The MQ is collected during an interview with the highest level of management staff at the firm who oversees staff and employment relations and entails information pertaining to management and employee relations and management practices. The FPQ is self-reported information completed by the manager respondent and offers further information regarding total and relative financial performance of the firm. The WRQ is completed by the main representative of the firm's employees, completed by a representative from the most recognized (or not-recognized) trade union, or a non-union employee, and includes information regarding management, firm, and union relations. The SEQ is a self-administered questionnaire completed by up to 25 employees at each of the workplaces/firms in the study and includes information regarding employee demographics, occupation, income, and well-being.

³ Cronbach's α statistic indicates the inter-item correlations or covariances for all pairs of variables. The value of α bigger than 0.8 is generally regarded as good or excellent internal consistency among the items.

Table 1
Descriptive statistics for the british 2011 WERS dataset.

Variable Name	Mean (or %)	SD	Min	Max
Log Job Distress	2.42	0.4	1.79	3.4
Financial Transparency				
Workplace Average	3.22	0.50	1	5
Very Good	13%			
Good	33%			
Average	29%			
Poor	16%			
Very Poor	10%			
Selected Worker Controls				
Percentage white	93%			
Percentage female	54%			
Percentage married/cohabitating	70%			
Percentage college degree or higher	34%			
Percentage 5 years at current job	54%			
Percentage full time	74%			
Percentage union member	36%			
Percentage supervisor	35%			
Percentage top 25th of firm income	40%			
Percentage (very) satisfied with amount of involvement in	42%			
Selected Workplace Controls				
Total employees (logged)	4.78	1.58	1.61	9.94
Percentage workplace age 25+ years	56%			
Percentage public sector	35%			
Percentage use of job security policies	13%			
Percentage 60%+ employees trained in last year	66%			
Percentage 60%+ employees who work on teams	83%			
Percentage 60%+ employees covered by collective bargaining	53%			
Percentage above average financial performance	50%			
Firm level mean income per month	1738	430	849	2565
Mediators				
Weekly Income (ln 1000s)	0.45	0.26	0.03	1.05
Percentage (strongly) agree that job feels secure	58%			
Commitment to organization	3.82	0.81	1	5
Subjective evaluation of management	3.50	0.96	1	5

security, income, organizational commitment, and assessment of managers. Sense of job security was measured with respondents' reports of relative satisfaction about the security of their job using the following scale: very dissatisfied, dissatisfied, neither satisfied nor dissatisfied, satisfied, and very satisfied, with higher scores indicating more satisfaction with job security. Fifty-eight percent either agree or strongly agree that they feel secure.

Weekly income was originally coded as the following discrete categories (all measured in pounds): 60 or less per week, 61–100 per week, 101–130 per week, 131–170 per week, 171–220 per week, 221–260 per week, 261–301 per week, 311–370 per week, 371–430 per week, 431–520 per week, 521–650 per week, 651–820 per week, 821–1050 per week, and 1051 or more per week. These were recoded as mid-points, with 1051 assigned to the top category. Workers' average weekly income is £450 with standard deviation of £260. Supplementary analyses of income in its original form revealed parallel results.

Commitment to organization is measured using a summary index of how much respondents agreed/disagreed with the following statements: "I share many of the values of my organization," "I feel loyal to my organization," and "I am proud to tell people who I work for." Response categories to each of the statements included strongly disagree, disagree, neither agree nor disagree, agree, and strongly agree. The summary score ($\alpha = 0.85$) ranges from 3 to 15, with higher scores indicating greater overall organizational commitment. We divided this summary score by 3 to obtain organizational commitment index with a mean of 3.82 and a range from 1 to 5.

The final mechanism we test for is the subjective evaluation of management. This was created using the following items: "Managers here deal with employees honestly," "Managers here treat employees fairly," and "in general how would you describe relations between managers and employees?" The first two items had the following response categories: strongly disagree, disagree, neither agree nor disagree, agree, strongly agree. The third question had the following response categories: very poor, poor, neither good nor poor, good, and very good. These three questions were summed to create a summary score ($\alpha = 0.90$) that ranges from 3 to 15, with higher scores indicating a more positive subjective evaluation of management. We divided this summary score by 3 to obtain subjective evaluation of management index with a mean of 3.50 and a range from 1 to 5.

2.2.4. Confounders

Since financial transparency and workers' job-related distress levels are endogenous to a wider system of workers' statuses, firm characteristics, and managerial practices, we account for such confounders in our modeling. Doing so allows us to capture the net effect of financial transparency on workers' job-related distress. Worker statuses include gender, race, age, marital status, academic qualifications, employee tenure, full-time or part-time work, hours worked, union membership, disability status, supervisor status, income

rank within the firm, and overall involvement in decision making in workplace. Firm level structural factors include firm size, firm tenure, industry type, and public vs. private sector. Management factors include selective hiring practices, job security policy, employee training policy, the use of work teams, formal strategic plan, formal induction plan, and collective bargaining agreement. Financial factors include financial performance and firm level mean income. [Appendix 3](#) reports these in detail.

2.3. Methods

In order to exploit the multi-level nature of our data (employees nested within firms), we estimate a series of multilevel level (mixed) models where employee level covariates are at level one and management/firm level covariates at level two. We estimate the relationship between financial transparency and workers' job-related distress by adding individual level confounders (e.g., education, supervisor status, income rank, amount of involvement in decision making, union membership), firm level structural (e.g., public vs. private, firm size, industry type), management (e.g., use of team, security, training, collective bargaining policy), and financial factors (e.g., financial performance) step-by-step. We then test the effect of mediators by adding each mediator separately to the full multilevel model.

In the second portion of our analyses, we undertake Karlson-Holm-Breen (KHB) decomposition method (Karlson, Holm and Breen, 2012) to interrogate possible mechanisms, noted previously. Both individual level and workplace level covariates are controlled in the model to obtain the net contribution of mediators. KHB is a method for comparing the estimated coefficients of two nested generalized linear models. It decomposes total effects into direct and indirect effects. The ratio of indirect effect over total effect is the proportion explained by the explanatory variables. We include all the mediators simultaneously in the same model to disentangle the relative contribution of each mediator.

3. Results

3.1. The impact of financial transparency on levels of job-related distress

[Fig. 1](#) shows a strong negative correlation between financial transparency and job-related distress. Job-related distress decreases with higher levels of workplace financial transparency. Next, we estimate a series of linear mixed effects models—models that regress log job distress as a function of financial transparency while adjusting for worker-level and workplace-level covariates. The aim is to distill the net effect of financial transparency on job distress after controlling for a wide range of confounders. Model 1 of [Table 2](#) tests the association between financial transparency and job distress without controls. Model 2 adjusts for workers' demographic and socioeconomic status characteristics. For summary purposes, only a subset of these characteristics is reported in [Table 2](#), with full results shown in [Appendix 4](#).

Each unit increase in workplace level financial transparency is associated with 3.2% ($=1-\exp(-0.033)$) reduction in job-related distress. The size of this effect is comparable to gender effect and slightly smaller than income quartile effect. Women report 3.2% higher job-related distress than men. Those in the top 25% of the income distribution experience 3.7% higher job-related distress than those in the bottom 75%. The distress relieving effect of 1-unit increase in transparency is comparable to the elimination of gender or income-level difference. Very good financial transparency at the workplace level ($=5$) reduces work distress by 15% ($=1-\exp(-0.033*5)$). Consistent with our earlier discussion surrounding potential conditional associations with union membership, we tested a third model that examined the possibility of moderation. Overall, however, no such effect was found and is thus not reported.

[Table 3](#) further adjusts for workplace-level confounders. We only report a subset of workplace-level covariates in this table, with full results presented in [Appendix 5](#). Model 3 includes workplace structural and management covariates. The significant effect of financial transparency, reported earlier, persists. In fact, the coefficient size becomes slightly larger (compared to Model 2, [Table 2](#)). This is mainly due to the inclusion of industry variables. Compared to the reference group (elementary industry), professional, associate professional or technical, administrative and secretarial, caring, leisure and other service, and sales and customer service

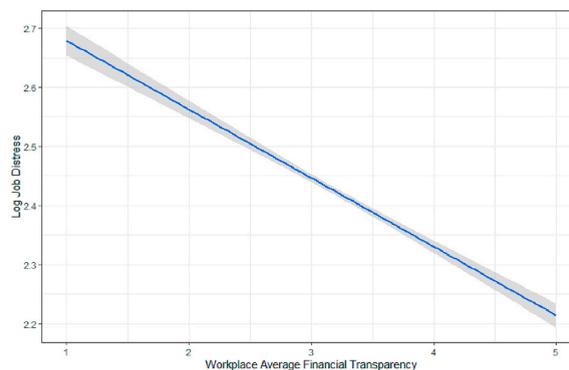


Fig. 1. Correlation between workplace financial transparency and job-related distress.

Table 2

Results from a linear mixed effects model predicting employee log job distress as a function of financial transparency, and worker-level controls.

	Log Job Distress	
	1	2
Financial Transparency		
Workplace Average	-.118***	-.033***
Selected Worker-Level Controls		
Female (Ref = Male)		.032***
Academic Qualifications		
(Ref = No Academic Qualifications)		
High School Equivalent		.026
Some College		.017
College Degree		.046***
Graduate/Professional Degree		.067***
Other Academic Qualifications		.004
Top 25th of Firm Income (Ref = Bottom 75th)		.037***
Supervisor (Ref = Not-Supervisor)		.077***
Union Member (Ref = Non-Union)		.041***
Hours Worked		.005***
Tenure at Firm		
(Ref = Less than 1 year)		
1–2 years		.062***
2–5 years		.075***
5–10 Years		.078***
10 Years or More		.099***
Satisfaction with Amount of Involvement in Decision Making		
(Ref = Very Dissatisfied)		
Dissatisfied		-.178***
Neither Satisfied nor Dissatisfied		-.374***
Satisfied		-.495***
Very Satisfied		-.609***
Intercept	2.799***	2.656***
Observations	15,747	15,747
Log Likelihood	-7,565.479	-5,948.811
Akaike Inf. Crit.	15,138.960	11,961.620
Bayesian Inf. Crit.	15,169.610	12,206.880

Notes: *P < .05, **P < .01, ***P < .001.

industries are positively associated with workplace financial transparency. They are also positively associated with job-related distress. Since workplace financial transparency is negatively associated with job-related distress, Model 2 suppresses the effect size of workplace financial transparency without controlling for industry in the model.

Among covariates, percentage of employees covered by collective bargaining is not independently associated with job distress. However, a test of conditional effects in model 4 suggests that no or limited collective bargaining coverage increases worker's distress in companies with poor financial transparency and financial transparency's ameliorating effects on job-related distress are somewhat stronger in contexts of no or limited collective bargaining coverage. For example, in firms with 100% collective bargaining coverage, every unit increase in financial transparency is associated with 0.8% ($=1-\exp(-0.008)$) reduction in job-related distress, while in firms with no or some collective bargaining coverage, every unit increase in financial transparency reduces work distress by 4.8% ($=1-\exp((-0.008)+(-0.041))$) and 9.9% ($=1-\exp((-0.008)+(-0.097))$), respectively. This conditional effect likely reflects leverage or power workers secure from workplace financial transparency that can abate the harmful consequence of poor collective representation on workers well-being. In fact, in firms with very good financial transparency, the impact of poor collective bargaining arrangement on workers distress diminishes.

Model 5 includes firm financial performance and firm-level workers' mean income. These two variables indicate that the performance of organizations has no decipherable impact on job distress. They also do not moderate the transparency-distress relationship; therefore, the interaction effects are not reported. Overall, Tables 2 and 3 demonstrate a very robust negative relationship between financial transparency and workers' job distress, after adjusting for potentially influential worker-level and workplace-level covariates.

3.2. Mechanisms linking financial transparency to workers' job-related distress

Table 4 reports results surrounding potential mediators. We test each of our earlier hypothesis in Models 6–11. Model 6 includes sense of job security, which has an expected negative relationship with job distress. With its inclusion, the coefficient size of financial transparency decreases but it is still substantial and significant. We conclude from this that even though Hypothesis 1 is supported to some degree, sense of job security is not a central mechanism in the financial transparency-job distress relationship.

Model 7 includes both a linear and quadratic term for weekly income. Higher weekly income is significantly associated with higher

Table 3

Results from a linear mixed effects model predicting employee log job distress as a function of financial transparency, worker-level and workplace-level controls.

	Log Job Distress		
	3	4	5
Financial Transparency			
Workplace Average	-.039***	-.008	-.038***
Selected Workplace-Level Controls			
Industry			
Professional (Ref = Elementary)	.037**	.035*	.025
Associate Professional or Technical	.024	.024	.012
Administrative and Secretarial	.041**	.040**	.032*
Skilled Trades	.014	.012	.006
Caring, Leisure, and Other Service	.022	.020	.021
Sales and Customer Service	.034*	.032*	.031*
Process, Plant, and Machine Operators	.009	.005	.005
Firm Tenure			
5–9 Years (Ref = Less than 5 Years)	-.017	-.018	-.018
10–14 Years	-.021	-.023	-.021
15–19 Years	-.020	-.022	-.020
20–24 Years	-.007	-.009	-.007
25+ Years	-.041**	-.043**	-.041**
Use of Job Security Policies (Ref = No Use)	-.011	-.007	-.010
Proportion Covered by Collective Bargaining			
Most (60–99% Employees) (Ref = 100%)	-.003	.105	-.005
Some (1–59%)	.024	.340*	.023
None (0%)	.014	.147**	.013
Financial Transparency*Proportion Covered by Collective Bargaining			
Financial Transparency*Most (60–99%)		-.034	
Financial Transparency*Some (1–59%)		-.097*	
Financial Transparency*None (0%)		-.041**	
Subjective Firm Financial Performance			
A Lot Better Than Average (Ref = A Lot Below Average)			-.021
Above Average			-.015
About Average			-.006
Below Average			-.029
Firm Mean Income (Z score)			.008
Intercept	2.685***	2.590***	2.712***
Observations	15,747	15,747	15,747
Log Likelihood	-6,046.878	-6,049.879	-6,066.428
Akaike Inf. Crit.	12,227.75	12,239.76	12,280.86
Bayesian Inf. Crit.	12,741.27	12,776.27	12,848.02

Notes: *P < .05, **P < .01, ***P < .001. Models include a full set of worker-level controls.

levels of job distress until it reaches £1038, when the positive effect begins to decline. £1038 is very close to the maximum weekly income (£1050) in this sample. Therefore, income is generally *positively* associated with job-related distress in this sample, yet its inclusion has little impact on the financial transparency effect. Thus, [Hypothesis 2](#) is not supported.

Model 8 shows that organizational commitment reduces job distress, but only modestly mediates the transparency-job distress relationship. Model 9 examines possible mediation by subjective evaluation of management. The effect here is notably strong, with each unit increase in the level of positive assessment of managers associated with 13% decrease in job distress. Moreover, this addition reduces the overall effect of financial transparency to non-significance. Thus, and consistent with [Hypothesis 4](#), managerial relations and appraisals of those relations appear to be a central mechanism undergirding the financial transparency-job distress relationship. We further test interactions between financial transparency and commitment to organization and subjective evaluation of management, respectively. Neither, however, is significant, suggesting that the effect of financial transparency does not depend on employees' loyalty to the organization or their relationship with managers.

We further use KHB mediation analysis to test the mediation effect presented in [Table 5](#). The total effect reflects the sum of residual (non-mediated) and indirect (mediated) effects of financial transparency on job distress. The total effect of financial transparency is -0.0388 . This means that every unit increase in workplace level financial transparency is associated with 3.8% ($=1-\exp(-0.0388)$) reduction in job-related distress. This number is the same as that seen in Model 5 of [Table 3](#) where all the worker-level and workplace-level confounders are controlled.

The indirect effect reflects the sum of indirect effects of financial transparency on job distress through all the four mediators. The proportion mediated reflects the percentage of the total effect of financial transparency on job distress that works through the mediators. Since the residual turns positive, the proportion mediated is slightly over 100%. The lower portion of the table shows the relative contribution of each mediator. For example, sense of job security and commitment to organization account for 9.79% and 23.53% of the transparency-distress relationship, respectively. Around two-thirds of the stress relieving effect of financial transparency is mediated through evaluation of management. Overall, these results are consistent with linear mixed models presented in [Table 4](#).

Table 4

Results from a linear mixed effects model predicting employee log job distress as a function of financial transparency, demographics, socioeconomic status, firm level characteristics, and mediators.

	Log Job Distress					
	6	7	8	9	10	11
Financial Transparency						
Workplace Average	-.033***	-.038***	-.021***	-.003	-.056*	.008
Sense of Job Security (Ref = Strongly Disagree that Job Feels Secure)						
Disagree	-.085***					
Neither Agree nor Disagree	-.156***					
Agree	-.241***					
Strongly Agree	-.280***					
Income						
Weekly Income (In 1000s)		.469***				
Weekly Income Squared (In 1000s)		-.226***				
Commitment to Organization (CO)			-.109***		-.138***	
Subjective Evaluation of Management (SE)				-.139***		-.129***
Financial Transparency*CO					.009	
Financial Transparency* SE						-.003
Intercept	2.811***	2.635***	2.912***	2.942***	3.017***	2.910***
Observations	15,747	15,747	15,747	15,747	15,747	15,747
Log Likelihood	-5,745.878	-6,023.078	-5,728.966	-5,484.451	-5,731.989	-5,488.633
Akaike Inf. Crit.	11,643.760	12,194.160	11,603.930	11,114.900	11,611.980	11,125.270
Bayesian Inf. Crit.	12,226.250	12,761.320	12,163.430	11,674.400	12,179.140	11,692.430

Notes: *P < .05, **P < .01, ***P < .001. Models include a full set of worker and workplace-level controls.

Table 5

Results from a Mediation Analysis of the Direct and Indirect effects of Financial Transparency on Employee Distress.

	Log Job Distress
Financial Transparency	
Workplace Average	
Total Effect	-0.0388***
Indirect Effect	-0.0392***
Residual	0.0004
Proportion Mediated	100.93%
Summary of Contribution of Individual Mediators to Total Mediation (Percentage of Total)	
Sense of Job Security	9.79%
Income	0.69%
Commitment to Organization	23.52%
Subjective Evaluation of Management	66.94%
Observations	15,747

Notes: *P < .05, **P < .01, ***P < .001. Models include a full set of worker and workplace-level controls.

4. Discussion and conclusions

Workplaces can be, and usually are, organizational contexts that impact well-being outcomes, including mental health. Financial transparency within the firm may be one such organizational factor. Building on several streams of prior theorizing and drawing on the WERS data, we focused on the direction of the transparency-job distress relationship, how it might be mediated by other organizational dynamics, and whether or not the impact might be conditional.

Our hierarchical analyses of nearly 20,000 workers across over 2,000 unique workplace establishments reveal that each unit increase in workplace level financial transparency is associated with 3.7% reduction in job-related distress. Very good financial transparency at the workplace level reduces work distress by 17% (Model 5). Importantly, these results are robust relative to the inclusion of a wide range of worker and workplace confounders (Appendix 3-5).

Using KHB mediation analysis, our analyses further revealed that assessments of managers are a key mechanism and conduit underlying the stress relieving impact of financial transparency. Organizational commitment and job security likewise reduce stress and mediate the transparency-job distress connection, although to a much more limited degree. Such findings lend support to high-commitment management theory's prediction that financial transparency as a managerial practice can increase organizational trust and commitment and improve workers-manager relations, and with stress reducing consequences. It also supports the prediction that bureaucratic formality and clarity can be beneficial by creating some sense of predictability and job security. Income in and of itself, however, does not mediate the transparency-distress relationship. Therefore, even though financial transparency entails disclosing firm's budgets, profits or other financial matters, the central mechanism linking financial transparency to less job-related distress is not monetary but rather interactional.

Our analyses also went a step further by interrogating whether the observed effect of financial transparency on workers' distress is conditional on confounders and mediators. In this regard, we note that the transparency–job distress relationship is extraordinarily consistent and not conditional on workers' union status, commitment to organization, attitude toward managers, firms' financial performance, and other worker- and workplace-level characteristics (e.g., workers' gender, education, supervisor status, firm size, public vs. private; no such interaction effects were found and are thus not reported). The transparency–distress relationship is, nevertheless, somewhat dependent on collective bargaining policy. Although poor collective bargaining coverage in and of itself is positively associated with work distress, the ameliorating effects of transparency on job distress is bolstered and the positive effect of poor collective bargaining diminishes in firms with very good financial transparency. One possible interpretation is that the leverage or power workers can gain from workplace financial transparency may be especially critical if they work in an environment with poor collective bargaining. The reverse, of course, might also be true. That is, leverage or power workers garner from collective bargaining can be especially important if their companies do not disclose financial information. This does not mean that collective bargaining and financial transparency are a substitute for each other, but implies that they can complement the shortage of each other, increase worker power, and jointly shape well-being for the better.

Several caveats are worth noting. The first lies in the fact that our cross-sectional design cannot address potential temporal dynamics in the key relationships observed. Thus, causal inference requires extra caution. We have tried to control for a long list of individual and workplace-level covariates to mitigate the possible confounding bias from individual and workplace characteristics. To further account for omitted variable bias, we used instrumental variable (IV) method to estimate the impact of financial transparency on job distress. We use public vs. private sector and firm's financial performance as two instruments, which meet relevance ($F > 10$) and overidentification criteria (Appendix 6). In fact, these two variables do not directly affect job distress (Appendix 5). Results from IV analysis overall confirm the main results. Instrumented workplace-level financial transparency alleviates job-related distress to an even larger degree than Model 5 of Table 3. This indicates that some omitted variables may suppress the effect of financial transparency. After removing this omitted variable bias, the bigger effect of financial transparency is recovered.

The second limitation, which we hope future data collection and analyses can help resolve, centers on the causal order between financial transparency and mediators. Conceptually, some mediators, e.g., manager evaluation response, are a more general evaluation, which should not come from vacuum. Instead, it should be influenced by evaluation on specific domains, e.g., disclosure of financial information. Methodologically, the primary explanatory variable is workplace-level average of employee response on financial transparency, which arguably reduces the possible feedback from mediators that are measured at the individual level to financial transparency that is measured at the workplace level. In addition, our IV analysis arguably removes the omitted variable bias, including manager evaluation response or organizational commitment if they were indeed confounders. The IV analysis suggests that workplace financial transparency has an independent effect on job-related distress. Therefore, based on the conceptual argument and empirical analysis, we suspect the sequence is more likely to be from financial transparency response to manager evaluation response or organizational commitment. Nonetheless, we hope longitudinal data will become available in the future that (a) measures change in financial transparency and distress; (b) links mechanisms among the same set of workers within the same workplace over time; and (c) allows for tests of the temporal, causal and mediating links more rigorously.

No less important to recognize, our findings should not be read to imply that disclosure of any kind of financial information will reduce workers' job distress. It is relatively easy to envision scenarios wherein financial transparency might intensify job-specific distress for workers of a given firm, especially if the pay inequality that transparency reveals is particularly significant and/or seen as unjust. Theories of organizational justice highlight that exposure of pay inequities can amplify grievances and perceptions of injustice. Lack of reward recognition can evoke feelings of unfairness since it amplifies for individuals something they believe they are entitled to (Hodson 2001; Miller 2001; Sauer and May 2017). Research has revealed this process dampens job satisfaction and increases the likelihood of looking for a new job (Card et al., 2012).

Perceptions of distributive injustice may also be influential when workers' sense of relative deprivation is amplified. This has long been recognized as an important source of distress and dissatisfaction, health-compromising behaviors, and lower self-esteem (e.g., Eibner and Evans 2005; Jones and Wildman 2008; Narisada 2017; Narisada and Schieman 2016; Yngwe et al., 2003). In this scenario, procedural justice (i.e., the fairness of the rules and procedures that regulate and determine the wage-setting and reward-allocation process) is called into question and relationships with supervisors and coworkers are harmed (Al-Zu'bi 2010; Tyler and Lind 1992). We hope future data will become available that will allow researchers to conduct more refined analysis in these very regards.

Despite any such limitations, the relationship between financial transparency and workers' job distress is notable, quite robust to the inclusion of numerous worker- and workplace-level controls, and with implications that are quite substantial in our view. The contemporary workplace is a major source of stress. How to improve the workplace environments, rules, and functions, and in a manner that bolsters health and well-being, should be on both research and policy agendas. Our analyses make clear that doing so may offer valuable potential remedies. Transparency in financial information, as our results show, can improve workers' sense of job security, commitment to their organizations, and their relationship with managers, which in turn substantially alleviates distress levels.

Importantly, and beyond policy-level implications, our study simultaneously contributes to recent and ongoing efforts at bridging questions of structure and interaction within organizational environments. Bureaucratic rules and procedures are often regarded as coercive, anathema to autonomy, and problematic for relationships between workers and managers. On the other hand, certain rules (e.g., transparency) can bolster predictability and accountability in a manner that can positively shaped more interactional processes and relations. Such effects, as our results suggest, probably occur through more proximate connections to managers and supervisors. Indeed, prior research has found that relationships with managers have the most direct impact on workers' well-being and satisfaction (Roscigno et al., 2018). To the extent this is the case, then it is worth considering specific bureaucratic rules and processes that might improve worker-manager relations. Organizational transparency seems to smooth communications between workers and managers,

allows workers greater say in decision making, and improves positive views about managers' integrity, honesty and fairness.

Appendix 1. Descriptive Statistics of Employee Characteristics

Variable Name	Mean (or %)	SD	Min	Max
Log Job Distress	2.42	0.40	1.79	3.40
Financial Transparency				
Very Poor	10%			
Poor	16%			
Average	29%			
Good	33%			
Very Good	13%			
Race				
White	93%			
Black	2%			
Asian	4%			
Mixed Race	1%			
Other Race	0%			
Gender				
Female	54%			
Age				
16–17	1%			
18–19	1%			
20–21	2%			
22–29	15%			
30–39	22%			
40–49	29%			
50–59	23%			
60–64	6%			
65 and above	2%			
Marital Status				
Single	21%			
Married/Cohabiting	70%			
Divorced/Separated	8%			
Widowed	1%			
Academic Qualifications				
High School Equivalent	3%			
Some College	46%			
College Degree	23%			
Graduate/Professional Degree	11%			
No Academic Qualifications	15%			
Other Academic Qualifications	3%			
Tenure at Firm				
Less than 1 year	11%			
1–2 years	10%			
2–5 years	25%			
5–10 Years	24%			
10 Years or More	30%			
Hours Worked	35.98	12.32	1.00	97.00
Part Time	26%			
Union Member	36%			
Disability	9%			
Top 25th of Firm Income	40%			
Supervisor	35%			
Satisfaction with Amount of Involvement in Decision Making				
Very Dissatisfied	5%			
Dissatisfied	17%			
Neither Satisfied nor Dissatisfied	37%			
Satisfied	33%			
Very Satisfied	9%			
Income				
Weekly Income (In 1000s)	0.45	0.26	0.03	1.05
Sense of Job Security				
Strongly Disagree	6%			
Disagree that Job Feels Secure	15%			
Neither Agree nor Disagree	22%			
Agree	42%			
Strongly Agree	16%			
Commitment to Organization	3.82	0.81	1.00	5.00
Subjective Evaluation of Management	3.50	0.96	1.00	5.00

Appendix 2. Descriptive Statistics of Firm Characteristics

Variable Name	Mean (or %)	SD	Min	Max
Workplace Average Financial Transparency	3.22	0.57	1	5
Total Employees (Logged)	4.78	1.58	1.61	9.94
Workplace Formal Strategic Plan	89%			
Workplace Formal Induction Plan	95%			
Proportion Covered by Collective Bargaining	3.98	2.76	1.00	7.00
All	34%			
Most Employees (60–99%)	19%			
Some (1–59%)	4%			
None (0%)	43%			
Industry				
Elementary (manual labor)	10%			
Professional	24%			
Associate Professional or Technical	13%			
Administrative and Secretarial	15%			
Skilled Trades	7%			
Caring, Leisure, and Other Service	12%			
Sales and Customer Service	10%			
Process, Plant, and Machine Operators	9%			
Firm Level Mean Income Per Month	1738.62	429.61	849.08	2565.09
Firm Tenure				
Less than 5 Years	5%			
5–9 Years	10%			
10–14 Years	11%			
15–19 Years	12%			
20–24 Years	5%			
25+ Years	56%			
Public Company	35%			
Use of Personality Tests in Hiring	43%			
Use of Job Security Policies	13%			
Type of Enterprise				
Multi-Site Corporation	76%			
Single Enterprise	22%			
Single Enterprise of Foreign Company	2%			
Percent Employees Trained in Past Year				
All	39%			
Almost All (80–99% Employees)	16%			
Most Employees (60–79%)	11%			
Almost Half (40–59%)	10%			
Some (20–39%)	10%			
Just a Few (1–19%)	10%			
None (0%)	5%			
Percent Employees Who Work on Teams				
All	48%			
Almost All (80–99% Employees)	25%			
Most Employees (60–79%)	10%			
Almost Half (40–59%)	4%			
Some (20–39%)	4%			
Just a Few (1–19%)	3%			
None (0%)	7%			
Subjective Firm Financial Performance				
A Lot Better Than Average	13%			
Above Average	37%			
About Average	35%			
Below Average	6%			
A Lot Below Average	1%			
No Relevant Comparison	6%			
Data Not Available	2%			

Appendix 3. Description of Confounders

Since financial transparency and workers' distress levels are endogenous to a wider system of firm characteristics, managerial practices, and workers' statuses, we account for such confounders in our modeling in order to capture the net effect of financial transparency on workers' stress levels. Worker status includes gender, race, age, marital status, academic qualifications, employee tenure, full/part time work, hours worked, union membership, disability status, supervisor status, income rank within the firm, and overall involvement in decision making in workplace. A majority of sample is white, 54% female, and 70% married or cohabitating.

Academic qualifications were coded into the following discrete categories: no academic qualifications/refused, other academic qualifications, High School degree equivalent, two-year college degree equivalent, Bachelor's degree equivalent, and Graduate/

Professional degree equivalent, with no academic qualifications/refused serving as the reference category. Thirty four percent of employees have a college degree or more. Employee tenure was measured as less than one year, one year to less than 2 years, 2 years to less than 5 years, 5 years to less than 10 years, and 10 years or more. Over half have worked in the same firm for more than 5 years. Seventy-four percent are full time workers and 36% are union members. Hours worked was entered into the model as a continuous variable. Employee disability status was coded in binary fashion, with those reporting no day-to-day limitation as the referent.

Supervisor status was dummy coded, with those reporting no supervisory obligations serving as the referent. In order to create a within-firm income rank for each employee, we first created within firm income quartiles (described below). We then transformed employee income from weekly to monthly by multiplying weekly wages by 52 weeks then dividing the product by 12 months, allowing us to match the scale used by the firm income quartiles. Relative rank was created using firm-level income quartiles and employee monthly income. Employees who were in the top 25th percentile of their firm’s income distribution were assigned as 1, while employees below the 25th percentile were assigned a zero.

Employees were also asked overall how satisfied they were with the amount of involvement they had in decision-making at the workplace using the following scale: very dissatisfied, dissatisfied, neither satisfied nor dissatisfied, satisfied, and very satisfied, with very dissatisfied as the reference group. Since financial transparency may be correlated with other aspects of managerial transparency, controlling for overall involvement in decision-making is important for our analyses. According to our measurement strategy in this regard, over one third of the sample reports that they are a supervisor, are in the top 25th of the income distribution of the workplace, and are satisfied or very satisfied with their involvement in decision making.

We also include a series of important management level/firm level covariates. Managers were asked if personality/attitude tests were used in the hiring process, for which we created a binary indicator. Managers were also asked if staff in the firm were covered by any types of job security policy. Thirteen percent of employees work in organizations with job security policies. Employee training policy includes measures of the proportion of staff who had training in the past year (as reported by the management), with response categories including: 100%, 80%–99%, 60%–79%, 40%–59%, 20%–39%, 1%–19%, 0%, and don’t know. Employee work policy includes measures related to the proportion of staff who work in designated teams, with response categories following the same proportional distribution as the previous covariate. Managers were also asked to report the proportion of staff that were covered under a collective bargaining agreement, using the same scale. Managers were also asked whether they have formal strategic and induction plans. Over two thirds of employees work in companies where most employees (over 60%) received job training in last year, 83% work in companies where most employees work on teams, 53% work in organizations where most employees are covered by collective bargaining, and around 90% work in organizations with formal strategic or induction plans.

Managers were asked to report which of the following non-managerial occupation had the most employees at the firm: Professional Occupations, Associate Professional and Technical Occupations, Administrative and Secretarial Occupations, Skilled Trades, Caring, Leisure, and other Service Occupations, Sales and Customer Service Occupations, Process, Plant, and Machine Operatives, and Elementary Occupations (manual labor). We use this as a proxy of industry, with Elementary Occupations serving as the referent. Total employee size was logged to account for skewness, and is included as a continuous variable.

Managers were also asked to report if their current workplace was a single independent establishment, or if it was part of a larger organization, or a sole UK establishment of a Foreign Organization. We created dummy categories using these options, with single independent establishment serving as the reference category. Firm tenure was measured using the following categories: zero to four years, five to nine years, ten to fourteen years, fifteen to twenty years, and 25 or more years. About one third of employees work in establishments that are in public sector, with a mean organization size of 118 workers, and a median organization age of 25 years.

Firm performance is derived from a question asking managers how they felt their firm has performed relative to firms in the same industry, with response categories including: a lot better than average, above average, about average, below average, a lot below average, no comparison possible/non-applicable, and don’t know. About half of respondents work in establishments whose employers report their financial performance are “above average” or “a lot better than average.” Firm level mean income is constructed using frequency distributions derived from interviews with management, where managers were asked to report the frequency of individuals in the following income categories: £845 or less per month (for a 37.5-h week), £846 - £1,070 per month, £1,071 - £1,425 per month, £1,426 - £1,855 per month, £1,856 - £2,565 per month, and £2,566 or more per month. These frequencies were transformed from wide format to long format, and median income values were assigned to each category. Firm level mean income and income quartiles were then calculated. Firm level mean income among employees per month is £1,739 with standard deviation of £430.

Appendix 4. Results from a Linear Mixed Effects Model Predicting Employee Log Job Distress as a Function of Financial Transparency, and Worker-Level Controls

	Log Job Distress	
	1	2
Financial Transparency		
Workplace Average	-.118***	-.033***
Gender		
Female (Ref = Male)		.032***
Race		

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(continued)

	Log Job Distress	
	1	2
Black (Ref = White)		.020
Asian		.045**
Mixed Race		-.034
Other Race		.018
Age		-.021***
Marital Status		
Married/Cohabiting (ref = Single)		-.003
Divorced/Separated		-.011
Widowed		-.031
Academic Qualifications		
High School Equivalent (Ref = No Academic Qualifications)		.026
Some College		.017
College Degree		.046***
Graduate/Professional Degree		.067***
Other Academic Qualifications		.004
Top 25th of Firm Income (Ref = Bottom 75th of Firm Income)		.037***
Supervisor (Ref = Not-Supervisor)		.077***
Union Member (Ref = Non-Union)		.041***
Hours Worked		.005***
Part Time (Ref = Full Time)		.027*
Tenure at Firm		
1–2 years (Ref = Less than 1 year)		.062***
2–5 years		.075***
5–10 Years		.078***
10 Years or More		.099***
Disability (Ref = No Disability)		.115***
Satisfaction with Amount of Involvement in Decision Making		
Dissatisfied (Ref = Very Dissatisfied)		-.178***
Neither Satisfied nor Dissatisfied		-.374***
Satisfied		-.495***
Very Satisfied		-.609***
Intercept	2.799***	2.656***
Observations	15,747	15,747
Log Likelihood	-7,565.479	-5,948.811
Akaike Inf. Crit.	15,138.960	11,961.620
Bayesian Inf. Crit.	15,169.610	12,206.880

Notes: *P < .05, **P < .01, ***P < .001.

Appendix 5. Results from a Linear Mixed Effects Model Predicting Employee Log Job Distress as a Function of Financial Transparency, Worker-Level and Workplace-Level Controls

	Log Job Distress		
	3	4	5
Financial Transparency			
Workplace Average	-.039***	-.008	-.038***
Total Employees (Logged)	-.003	-.003	-.003
Public Company (Ref = Privately Owned)	.013	.014	.013
Industry			
Professional (Ref = Elementary)	.037**	.035*	.025
Associate Professional or Technical	.024	.024	.012
Administrative and Secretarial	.041**	.040**	.032*
Skilled Trades	.014	.012	.006
Caring, Leisure, and Other Service	.022	.020	.021
Sales and Customer Service	.034*	.032*	.031*
Process, Plant, and Machine Operators	.009	.005	.005
Firm Tenure			
5–9 Years (Ref = Less than 5 Years)	-.017	-.018	-.018
10–14 Years	-.021	-.023	-.021
15–19 Years	-.020	-.022	-.020
20–24 Years	-.007	-.009	-.007
25+ Years	-.041**	-.043**	-.041**
Type of Enterprise			

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(continued)

	Log Job Distress		
	3	4	5
Single Enterprise (Ref = Multiple Locations)	-.008	-.009	-.008
Single Enterprise of Foreign Company	.014	.016	.011
Use of Personality Tests in Hiring (Ref = No Use)	.007	.007	.006
Use of Job Security Policies (Ref = No Use)	-.011	-.007	-.010
Percent Employees Trained in Past Year			
Almost All (80–99% Employees) (Ref = 100%)	.016	.017	.014
Most Employees (60–79%)	.003	.003	.002
Almost Half (40–59%)	.005	.005	.003
Some (20–39%)	-.008	-.009	-.009
Just a Few (1–19%)	.011	.011	.010
None (0%)	-.002	-.004	-.002
Percent Employees Who Work on Teams			
Almost All (80–99% Employees) (Ref = 100%)	.016	.018*	.017
Most Employees (60–79%)	-.008	-.006	-.008
Almost Half (40–59%)	.004	.005	.006
Some (20–39%)	.008	.008	.007
Just a Few (1–19%)	-.015	-.014	-.015
None (0%)	.015	.019	.017
Workplace Formal Strategic Plan	.012	.012	.012
Workplace Formal Induction Plan	-.014	-.015	-.014
Proportion Covered by Collective Bargaining			
Most (60–99% Employees) (Ref = 100%)	-.003	.105	-.005
Some (1–59%)	.024	.340*	.023
None (0%)	.014	.147**	.013
Financial Transparency*Proportion Covered by Collective Bargaining			
Financial Transparency*Most (60–99%)		-.034	
Financial Transparency*Some (1–59%)		-.097*	
Financial Transparency*None (0%)		-.041**	
Subjective Firm Financial Performance			
A Lot Better Than Average (Ref = A Lot Below Average)			-.021
Above Average			-.015
About Average			-.006
Below Average			-.029
No Relevant Comparison			-.035
Firm Mean Income (Z Score)			.008
Intercept	2.685***	2.590***	2.712***
Observations	15,747	15,747	15,747
Log Likelihood	-6,046.878	-6,049.879	-6,066.428
Akaike Inf. Crit.	12,227.750	12,239.760	12,280.860
Bayesian Inf. Crit.	12,741.270	12,776.270	12,848.020

Notes: *P < .05, **P < .01, ***P < .001. Models include a full set of worker-level controls.

Appendix 6. Instrumental Variable Analysis of the Impact of Workplace Financial Transparency on Work-Related Distress

	Log Job Distress
Financial Transparency	
Workplace Average	-0.110*
Total Employees (Logged)	-0.005
Industry	
Professional (Ref = Elementary)	0.041*
Associate Professional or Technical	0.027
Administrative and Secretarial	0.041*
Skilled Trades	0.001
Caring, Leisure, and Other Service	0.035*
Sales and Customer Service	0.055*
Process, Plant, and Machine Operators	-0.005
Firm Tenure	
5–9 Years (Ref = Less than 5 Years)	-0.016
10–14 Years	-0.025

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(continued)

	Log Job Distress
15–19 Years	–0.025
20–24 Years	–0.010
25+ Years	–0.044**
Type of Enterprise	
Single Enterprise (Ref = Multiple Locations)	–0.009
Single Enterprise of Foreign Company	0.026
Use of Personality Tests in Hiring (Ref = No Use)	0.010
Use of Job Security Policies (Ref = No Use)	–0.017
Percent Employees Trained in Past Year	
Almost All (80–99% Employees) (Ref = 100%)	0.011
Most Employees (60–79%)	0.000
Almost Half (40–59%)	0.002
Some (20–39%)	–0.012
Just a Few (1–19%)	0.005
None (0%)	–0.011
Percent Employees Who Work on Teams	
Almost All (80–99% Employees) (Ref = 100%)	0.015
Most Employees (60–79%)	–0.009
Almost Half (40–59%)	–0.004
Some (20–39%)	0.006
Just a Few (1–19%)	–0.016
None (0%)	0.013
Workplace Formal Strategic Plan	0.019
Workplace Formal Induction Plan	–0.017
Proportion Covered by Collective Bargaining	0.003
Firm Mean Income (Z Score)	0.010
Intercept	2.913***
Observations	15,747
Instruments	
Public Company (Ref = Privately Owned)	
Subjective Firm Financial Performance	
A Lot Better Than Average (Ref = A Lot Below Average)	
Above Average	
About Average	
Below Average	
No Relevant Comparison	
F Test (Cragg-Donald Wald F statistic)	38.718
Overidentification Test (Sargan-Hansen Statistic)	5.348 (p = .500)

Notes: *P < .05, **P < .01, ***P < .001. Models include a full set of worker-level controls.

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