© *Academy of Management Discoveries*
2015, Vol. 1, No. 2, 165–179.
Online only
http://dx.doi.org/10.5465/amd.2014.0045

PAY DISPERSION, SORTING, AND ORGANIZATIONAL PERFORMANCE

JASON D. SHAW
The Hong Kong Polytechnic University

The author takes a sorting perspective to explore relationships among pay dispersion, good- and poor-performer quit rates, and organizational performance in a multiwave study of independent grocery stores. Under high pay-for-performance, pay dispersion has a significant positive relationship with poor-performer quit rates and, further, the indirect effects of pay dispersion on organizational performance via poor-performer quit rates are stronger when pay-for-performance is high. The relationship between pay dispersion and good-performer quit rates is negative when pay-for-performance is low, such that the highest good-performer quit rates are found when pay is compressed and pay-for-performance is not used. Pay dispersion is also found to be directly and positively related to organizational performance among organizations that emphasize pay-for-performance. Implications for sorting theory and related perspectives are addressed and future research directions are outlined.

INTRODUCTION

Much debate and controversy surrounds horizontal pay dispersion, when employees doing similar jobs are paid different rates. Theorists and researchers have described the consequences using bifurcated imagery ranging from motivation, effort, windfall gain, fairness, and productive competition, on the one hand, to social loafing, relative deprivation, politics, conflict, and disunity, on the other hand (Shaw, 2014). It is perhaps not surprising then that meta-analytic evidence suggests that horizontal pay dispersion and organizational performance essentially have a zero relationship (−0.01) (Park & Sung, 2013).

Recent theoretical developments have begun to resolve many underlying conceptual tensions in the literature. Shaw, Gupta, and Delery (2002) first advanced the idea that widely dispersed pay generates better organizational outcomes when organizations

I wish to thank the anonymous reviewers, associate editor Peter Bamberger, Yoshio Yanadori, Anne Tsui, and seminar participants at Peking University and the University of South Australia for helpful comments on previous versions. The study was funded by the SHRM Foundation. The interpretations, conclusions, and recommendations, however, are those of the author and do not necessarily represent those of the foundation.

use normatively accepted practices to generate dispersion, that is, when the dispersion is based on inputs relevant to productivity (Trevor, Reilly, & Gerhart, 2012). Explained pay dispersion (Shaw et al., 2002) resolves many of the literature's various conundrums emanating from competing universalistic theoretical views. Researchers are increasingly associating wider horizontal pay ranges accompanied by justifiable dispersion-creating practices such as performance-based pay with higher productivity, lower accident rates, and better financial performance (e.g., DeBrock, Hendricks, & Koenker, 2004; Fredrickson, Davis-Blake, & Sanders, 2010; Kepes, Delery, & Gupta, 2009; Shaw & Gupta, 2007). Explained pay dispersion has been shown to relate positively to performance even in highly interdependent task environments such as professional hockey (Trevor et al., 2012).

Despite advances, the literature remains at a somewhat nascent stage (Gupta & Shaw, 2014). As Shaw (2014: 538) stated: "to date [the pay dispersion literature] is more extensive in terms of answering questions of when rather than *why or how*" (Shaw, 2014: 538). Theoretical and empirical development (e.g., Shaw et al., 2002) and replications (Trevor et al., 2012) do appear in the literature, but precise formulations and additional evidence are needed for several reasons. First, compensation costs are immense, accounting for the vast majority of total expenses in many organizations (Gerhart, Rynes, & Fulmer, 2009). Second, merit and bonus budgets in many societies are relatively meager (Mitra, Tenhiälä, & Shaw, in press), increasing the importance of distributing and structuring pay prudently to obtain desired retention and performance outcomes. Third, in terms of sorting, intense competition for talent, clustered turnover patterns, and the prevalence of poaching draw weight to the issue of functional and dysfunctional turnover patterns (Heavey, Hausknecht, & Holwerda, 2013; Park & Shaw, 2013).

Here, I explore the potential explanatory mechanisms between explained pay dispersion and organizational performance. In particular, compensation researchers typically assume that properly designed pay structures enhance motivation (e.g., Jenkins, Mitra, Gupta, & Shaw, 1998) and create sorting effects (Gerhart & Rynes, 2003; Shaw, 2011). Drawing on sorting theory, I advance the literature by outlining a general sorting perspective that can explain the relationships among horizontal pay dispersion, normatively accepted dispersion-creating practices, and organizational performance through the quit patterns of good and poor performers. I test the model in a three-wave data set drawn from independent grocery stores.

I made several decisions in conducting this study. As noted, I focus on horizontal dispersion—the spread of pay among employees holding similar jobs, rather than vertical dispersion—the spread of pay across organizational echelons (Gupta, Conroy, & Delery, 2012; Shaw, 2014). Vertical pay dispersion is better suited for studies of larger, hierarchical organizations. I gathered data from a sample of small single-unit grocery stores and focused on pay structures and quit patterns among full-time floor employees. Second, I base the concept of justifiable or explained variation on whether pay-for-performance systems are used. Many organizations in the United States and other Western hemisphere countries socially accept the use of pay-for-performance practices. As such, a focus on pay-for-performance should reasonably test the general theory. I return to cross-cultural applications and other potential justifiable reasons for dispersion later in the article. Third, I conduct analyses concerning pay structures and quit patterns at the organizational level. The study was designed as a complementary and alternative perspective to the larger literature on the relationship between performance and turnover at the individual level (e.g., Cadsby, Song, & Tapon, 2007; Harrison, Virick, & William, 1996; Nyberg, 2010; Salamin & Hom, 2005).

THEORETICAL FOUNDATIONS

The Concept of Explained Pay Dispersion

Pay may be dispersed horizontally for various reasons. Theories claiming that within-job pay dispersion motivates workers tend to assume that legitimate dispersion practices create pay differences between employees doing similar work (Shaw et al., 2002); that is, differences in relevant employee inputs explain the pay differences (Trevor et al., 2014). When pay dispersion practices appear to be legitimate, individual behavior is more strongly aligned with outcomes (Gerhart et al., 2009), individuals perceive higher pay fairness (Heneman, Greenberger, & Strasser, 1988) and perceive compensation differentials to be large enough to be meaningful (Mitra, Gupta, & Jenkins, 1997; Mitra et al., in press). Relevant dispersion-creating practices, however, do not always explain highly dispersed pay. Instead, other factors such as organizational politics, lack of formal or inconsistently applied procedures, nepotism, and game-playing can cause employees who are doing similar work to be paid differently (Kepes et al., 2009). A case in point is the increasing prevalence of personalized, idiosyncratic agreements (or i-deals) (Rosen, Slater,

Author's voice:
Why this study was done?

Chang, & Johnson, 2013). Nonstandard by definition, these agreements can result in pay distributions that do not reflect standard practice and in certain cases may not be readily explained by general, relevant workforce inputs. High levels of pay dispersion in the absence of normatively accepted dispersion-creating practices can be considered unexplained pay dispersion. Pay dispersion that is unexplained by performance-related inputs is likely to engender negative or idiosyncratic responses. Employees may see horizontal pay dispersion that cannot be readily explained by legitimate employee-level inputs or organizational practices as unfair, arbitrary, and demotivating. In essence, the "motivating aspects of pay dispersion will be realized only when accompanied by legitimate or normatively accepted factors" (Shaw et al., 2002: 492).

Although the literature clearly defines explained versus unexplained pay dispersion as a conceptual variable, researchers have used different approaches for assessing whether pay dispersion is legitimately explained. Research design and data availability seem largely to drive the approach. The most common approach has been to assess pay dispersion and practices that create pay dispersion independently (e.g., Kepes et al., 2009; Shaw et al., 2002; Shaw & Gupta, 2007) using organizational-level data to create separate pay dispersion and employment practices variables. These components then interact to indicate explained or unexplained pay dispersion. For example, Shaw et al. (2002) used horizontal pay dispersion and performance-based pay practices interactions to assess whether pay dispersion was explained or unexplained. Kepes et al. (2009) explored pay dispersion as it interacts with separate measures of legitimate (performance-based pay) and illegitimate (politically based pay) practices to determine whether pay dispersion was explained or unexplained. This approach indicates that pay dispersion is explained when pay is highly dispersed and dispersion practices are legitimate. The person–organization literature provides an analogous approach: researchers routinely use the interaction of objective and desired work characteristics (e.g., job complexity) to address fit or misfit (Edwards, 1996; Kristof, 1996). This approach has a number of advantages. Dispersion and sources of dispersion are independent, and therefore researchers can assess overall pay dispersion and dispersion-creating practice effects both independently and jointly. In addition, this approach allows researchers to examine explained and unexplained pay dispersion and assess the consequences of compressed pay structures with or without dispersion practices such as pay-for-performance.

Researchers who have access to data on individual performance and pay levels have used an alternative operational approach. For example, Trevor et al. (2012) used an individual performance metric (e.g., points, assists) to predict pay levels across a professional hockey league. The within-team variation in the predicted pay-level scores indicated the degree to which legitimate inputs could explain pay dispersion. This approach is advantageous in that pay levels can be tied to individual-level performance inputs. However, in this conceptualization unexplained and explained pay dispersion reside on a separate continuum; this contradicts a conceptual definition which assumes that pay dispersion cannot be concurrently explained and unexplained.

As such, I take the former conceptual and operational approach here. Pay dispersion is explained when it results from a legitimate dispersion-creating practice—here, pay-for-performance. I assume that pay dispersion is unexplained when pay is highly dispersed but the organization does not use pay-for-performance.

A Sorting Theory View on Explained Pay Dispersion, Quit Patterns, and Performance

Compensation systems are primarily used to motivate workers, attract high-quality talent pools, and retain the best performers (Bishop, 1987; Lawler & Jenkins, 1992). Researchers in various disciplines have well-explored motivation and attraction goals (e.g., Gerhart & Rynes, 2003; Jenkins et al., 1998), but organizational-level research on the sorting effects of pay structures and pay-for-performance has been, with exceptions (e.g., Shaw & Gupta, 2007), "virtually ignored in the pay dispersion literature" (Trevor et al., 2012: 586). A sorting theory perspective suggests that good and poor performers will show different quit patterns partly depending on whether normatively accepted practices explain pay variation. Sorting theory suggests that after individuals work in an environment for a time, they will use various factors to determine whether it suitably matches their ability and preferences, and whether the organization will ultimately meet their goals and needs (Lazear, 2000). Applied to the issue of explained versus unexplained pay dispersion, sorting theory suggests that good performers should realize a number of relative advantages over poor performers under wide pay structures and performance-based pay. First, under highly explained pay dispersion, good performers will view the system as potentially maximizing their self-interest. They should enjoy higher pay, positive feedback about their performance, and positive affective responses. They should show high retention rates and low affective and calculative forces for quitting (Shaw, Dineen, Fang, & Vellella, 2009). Individual-level and experimental research provides

some ancillary evidence supporting this view. Cadsby et al. (2007) found experimental results indicating that higher performing participants prefer pay-for-performance, whereas other individual-level research has found higher survival rates among good performers under performance-based pay (e.g., Harrison et al., 1996; Salamin & Hom, 2005; see also Belogolovsky & Bamberger, 2014). High explained pay variation should have a different relation with poor-performer quits. Poor performers are likely to either settle for low pay or depart for potentially better alternatives elsewhere (Bloom & Michel, 2002; Lambert, Larcker, & Weigelt, 1993).

The extant literature offers few direct tests of the sorting potential of explained pay dispersion. In one study, quit patterns were traced after a piece-rate plan replaced the seniority system; the best performers showed significantly lower quit rates, whereas the worst performers showed higher quit rates (Lazear, 1999, 2000). Although that study did not examine pay dispersion directly, piece rates largely depend on individual performance differences. Consequently, the new system likely stretched the pay distribution, which reasonably indicates that piece-rate pay increased explained pay variation, making the sorting effects evident. In another study using a sample of long-haul trucking companies, good-performer quits in explained pay dispersion pay systems were highest under high pay dispersion and nonperformance-based pay (Shaw & Gupta, 2007). Those findings yield more equivocal quit patterns for poor performers. Professional hockey teams were also found more likely to retain high-input players when prior player performance could explain within-team pay variations (Trevor et al., 2012). Like Shaw and Gupta (2007), the Trevor et al. (2012) findings were less definitive for the retention of poor performers.

The sorting perspective, *in toto*, suggests an integrative approach for understanding how pay dispersion accompanied by the legitimate dispersion practice of pay-for-performance can enhance organizational performance. Viewing pay dispersion as a system of relationships, sorting theory suggests that explained pay dispersion may enhance organizational performance indirectly by creating divergent turnover patterns for good and poor performers. Performance-based pay dispersion should result in lower quit rates among good performers, while good performer quit rates should be higher when pay is compressed and pay-for-performance is not used. Good-performer quit rates should, on balance, be negatively associated with organizational performance (Shaw, 2011). Thus, pay dispersion should have positive indirect effects on organizational performance through "lower" good-performer quit rates under high pay-for-performance, that is when a normatively accepted practice explains pay dispersion. Conversely, explained pay dispersion should indirectly affect organizational performance by increasing poor-performer quit rates. Under high pay-for-performance, pay dispersion should have stronger positive relationships with poor-performer quit rates and positive indirect effects on organizational performance through "higher" poor-performer quit rates, that is, when the normatively accepted practice explains pay dispersion.

Author's voice:
How did the paper evolve?

METHOD

Two waves of survey data from key informant questionnaires and archival data on company characteristics and performance provided data sources for this study. The data used here were part of a larger study of employment systems and organizational performance (e.g., Shaw et al., 2009; Shaw, Park, & Kim, 2013). The primary data source was a survey of single-unit grocery stores in the United States. A random sample of 1,000 stores was drawn from the independent groceries edition of the *Chain Store Guide*, which provides archival data on retail and foodservice organizations. The survey research process unfolded according to the guidelines for enhancing response rates in key informant research (Gupta, Shaw, & Delery, 2000). A member of the research team called each store in the sample to obtain the name of the store manager and to verify the mailing address. The key informant was then sent a letter detailing the goals of the study and encouraging participation. About a week after the letter was mailed, a member of the research team called each store manager to verify that the letter was received, to answer any questions and to further encourage participation. Immediately following the telephone call, the team mailed the questionnaire (Time 1). After a month passed, a reminder letter and another copy of the questionnaire were mailed to nonresponding stores. The team received 320 returned questionnaires—a 32 percent response rate. About 18 months later, the research team mailed feedback reports to responding organizations, along with a short follow-up questionnaire (Time 2), and received 135 returned questionnaires—a 42 percent Time 2 participation rate and an overall 14 percent response rate. The team obtained the third wave of data (Time 3) from the *Chain Store Guide* for the calendar year after the Time 2 follow-up questionnaire (Time 3).

All measures used in this study from the Time 1 and Time 2 questionnaires were specific to full-time

employees. In field work prior to the administration of the questionnaires, the research team assessed the nature of the work and the structure of the human resource management (HRM) systems within a number of stores. With the exception of the store manager, who was also frequently the store owner, full-time employees performed work of a "generalist" nature. Employees were assigned to stocking, cashiering, cleaning, organizing, unloading, and other customer-service-related activities, as needed. In addition, the stores had a single pay system for full-time employees and did not have "pay bands" and other HRM structures that would signify moving through the formal hierarchy, as would be expected in a vertical pay dispersion situation. Furthermore, informants were instructed to exclude their own pay information in the reports of pay information in the questionnaire. Thus, the focus on pay differences among full-time floor employees in these small groceries is most similar to a horizontal pay dispersion situation, as prior researchers have defined it (e.g., Shaw, 2014).

Measures: Independent Variables (Time 1, Questionnaire)

Pay dispersion. The literature offers a number of operationalizations of pay dispersion, although they are frequently highly interrelated (Shaw, 2014). I used the Gini coefficient, the most commonly used measure of income inequality in management and economics (Bloom, 1999; Donaldson & Weymark, 1980; Shaw et al., 2002), defined as:

$$\text{Gini coefficient} = 1 + \frac{1}{n} - \frac{2}{n^2\bar{y}}\left(y_1 + 2y_2 + \ \ldots\ + ny_n\right)$$

where y_1 to y_n are the annual pay levels of employees in a given store arranged in decreasing order of size; $\bar{y}$ is the mean pay level in the store; and n is the number of full-time employees in the store. The maximum Gini coefficient is 1.0, indicating absolute inequality of pay; the minimum is zero, indicating complete pay compression. As a consequence of the estimated distribution, the Gini coefficient estimates are underestimated in this study.

As a validity check, I also calculated two other dispersion measures: the coefficient of variation (i.e., the standard deviation of pay levels within a store divided by the mean) and the pay range (i.e., the highest pay level minus the lowest pay level) (Gupta et al., 2012). The correlation between the Gini coefficient and the coefficient of variation was 0.57 ($p < .01$); the correlation between the Gini coefficient and the pay range was 0.59 ($p < .01$). The multivariate results were substantively identical when the coefficient of variation operationalization was used. The results were somewhat weaker when pay range was used as the measure of dispersion.

Pay-for-performance. This variable was measured with four items from Colquitt (2001) ($\alpha = 0.92$). The items were: "To what extent do rewards reflect the effort employees put into their work?"; "To what extent do rewards reflect what employees have contributed to the organization?"; "To what extent are rewards appropriate given the work employees have completed?"; and "To what extent are rewards justified, given employees' performance?" The items had five response options from 1 (Not at all) to 5 (To a very great extent).

Measures: Mediators and Dependent Variable (Time 2 and Time 3)

Good- and poor-performer quit rates (Time 2). In the Time 2 questionnaire, key informants first reported the number of total quits in the past year. Next, they reported the number of full-time employee quits whose job performance was in the lowest 20 percent and the highest 20 percent. The number of poor- and good-performer quits was divided by the total number of full-time employees to create the poor- and good-performer quit rates.

Organizational performance (Time 3). Performance was operationalized as the total sales divided by the square meters of the store's retail area. The data were obtained from the *Chain Store Guide* at Time 3, covering the calendar year after the quit-rate mediators were collected.

Measures: Control Variables (Time 1 and Archival)

Several controls may relate to the independent and dependent variables in the equations. Average pay rates and unionization are related to quit rates and organizational performance (Gerhart & Rynes, 2003; Osterman, 1987; Shaw, 2014). "Average pay rates" was measured with key informant Time 1 responses to the item "how do pay rates for employees in their store compare with pay rates in the local labor market?" Response options range from 1 (Ours are much lower) to 5 (Ours are much higher). "Unionization" was coded 1 if full-time employees were covered by a collective bargaining agreement and 0 otherwise. "Discharge rates" may signal underlying differences in the quality of the workforce and performance instability (Batt & Colvin, 2011) and was therefore

controlled using Time 1 questionnaire information: the number of full-time employees discharged or fired at Time 1 divided by the total number of full-time employees. I accounted for the possibility that the quality of human capital stocks may influence quit patterns and organizational performance by controlling for staffing practices (Shaw, 2014). "Selective staffing" was a five-item measure based on the valid selection procedures index (Shaw, Delery, Jenkins, & Gupta, 1998). Informants reported the extent to which they used structured interviews, physical ability tests, reference checks, drug testing, and background checks when hiring employees. The items had five response options from 1 (Not at all) to 5 (To a very great extent).

RESULTS

Response Bias Checks and Measurement Issues

The data used in these analyses were obtained in three waves: Time 1 (questionnaire and archival), Time 2 (questionnaire), and Time 3 (archival). To assure that the final analysis sample was representative relative to the population of single-unit grocery stores, I used three sets of empirical analyses. First, I predicted responses to the Time 1 questionnaire across five variables available in the *Chain Store Guide* (store age, store sales, total square feet, and number of specialty departments) using a logistic regression. I coded responding stores 1 and nonresponders 0. One variable—specialty departments—was significant; responding organizations had a fraction more specialty departments (6.7 versus 6.2) than did nonresponding organizations. Second, I assessed whether the stores in the final analysis sample differed from the nonresponding organizations in the sampling frame. None of the variables was a significant predictor in this logistic equation. Third, I compared responding and nonresponding organizations against the same array of archival characteristics available in the Time 3 archival database. No characteristic was a significant predictor in the equation. In all, the checks suggested no marked differences between responding and nonresponding stores.

Regression Results

Table 1 shows descriptive statistics and correlations. Table 2 reports the regressions when good- and poor-performer quit rates were the dependent variables. Table 3 shows the regression analyses for organizational performance.

The left-most columns in Table 2 show the regression results when good-performer quit rates is the outcome variable. In Model 1, pay dispersion is significantly and negatively related to good-performer quit rates ($b = -0.01$, $p < .05$), but pay-for-performance is not significantly related ($b = 0.01$, n.s.). Model 2 shows the interaction of pay dispersion and pay-for-performance when good-performer quit rates is the dependent variable. The product term is significant ($b = -0.01$, $p < .05$), explaining an additional 4 percent of the variance in good-performer quit rates. Figure 1 shows a plot of the interaction. When pay-for-performance is low, pay dispersion and good-performer quit rates have a significantly negative relationship ($b_{\text{High pay-for-performance}} = -0.03$, $p < .01$), with the highest estimated good-performer quit rates occurring when pay dispersion and pay-for-performance are both low. When pay-for-performance is high, pay dispersion and good-performer quit rates are not significantly related ($b_{\text{Low pay-for-performance}} = -0.01$, n.s.).

The right side of Table 2 reports the regression results when poor-performer quit rates is the dependent variable. In Model 1, pay dispersion ($b = 0.01$, $p < .05$) and pay-for-performance ($b = 0.02$, $p < .05$) are positively related to poor-performer quit

TABLE 1
Correlations and Descriptive Statistics

	Mean	SD	1.	2.	3.	4.	5.	6.	7.	8.
Average pay rates	2.97	0.72								
Unionization	0.04	0.19	0.00							
Discharge rates (Time 1)	0.03	0.08	−0.23*	0.03						
Selective staffing (Time 1)	2.34	0.71	0.13	0.10	−0.10	0.92				
Pay dispersion (Time 1)	0.10	0.05	−0.03	0.04	−0.07	−0.03				
Pay-for-performance (Time 1)	3.42	0.90	0.09	−0.17	0.02	0.23*	0.05	0.92		
Good-performer quit rates (Time 2)	0.04	0.06	−0.11	0.05	−0.03	−0.02	−0.08	0.12		
Poor-performer quit rates (Time 2)	0.04	0.10	0.06	−0.02	0.14	−0.03	0.05	0.21*	−0.04	
Organizational performance (Time 3)	119.24	208.84	−0.18	−0.01	0.03	−12	0.11	0.08	0.05	0.04

Notes. $N = 111$. Internal consistency reliability estimates on the main diagonal.
* $p < .05$
** $p < .01$

TABLE 2
Regression Results: Good- and Poor-Performer Quit Rates

	Good-Performer Quit Rates (Time 2)		Poor-Performer Quit Rates (Time 2)	
	Model 1	**Model 2**	**Model 1**	**Model 2**
Average pay rates	−0.01	−0.01	0.01	0.01
Unionization	−0.01	−0.01	0.03	0.02
Discharge rates (Time 1)	−0.02	−0.02	0.11	0.11
Selective staffing (Time 1)	0.00	0.00	−0.01	−0.01
Pay dispersion (Time 1)	−0.01*	−0.02*	0.01*	0.02**
Pay-for-performance (Time 1)	0.01	0.01	0.02*	0.01
Pay dispersion * pay-for-performance		−0.01*		0.02**
Total R^2	0.09	0.13*	0.14*	0.20**
ΔR^2	0.09	0.04*	0.14*	0.06**

Note. $N = 111$.
* $p < .05$
** $p < .01$

rates at Time 2. The product term in Model 2 is significant ($b = 0.02$, $p < .01$), explaining 6 percent of the variance in the equation. Figure 2 shows the form of the interaction. Under high pay-for-performance, pay dispersion and poor-performer quit rates have a significant and positive relationship ($b_{\text{High pay-for-performance}} = 0.04$, $p < .01$), but the relationship is not significant under low pay-for-performance ($b_{\text{Low pay-for-performance}} = 0.00$, n.s.).

Model 1 of Table 3 shows that pay dispersion ($b = 36.23$, $p < .01$) and pay-for-performance ($b = 39.57$, $p < .01$) are significantly related to organizational performance. The interaction between pay dispersion and pay-for-performance is significant in Model 3 ($b = 54.40$ $p < .01$), explaining 17 percent of the variance in organizational performance. Figure 3 depicts the interaction. Under high pay-for-performance, pay dispersion and organizational performance has a significant and positive relationship ($b_{\text{High pay-for-performance}} = 82.73$, $p < .01$). Under low pay-for-performance, the relationship has a nonsignificant negative slope ($b_{\text{Low pay-for-performance}} = -18.35$, n.s.).

The column labeled Model 3 in Table 3 includes the main effects of good- and poor-performer quit rates in predicting organizational performance. This equation shows that good-performer quit rates is not significantly related to organizational performance ($b = -53.33$, n.s.), but poor-performer quit rates is significantly related ($b = 206.03$, $p < .05$). Poor-performer quit rates explain about 3 percent of the unique variance (the semipartial r^2) in organizational performance. This significant coefficient suggests that poor-performer quit rates may mediate the interaction between pay dispersion and pay-for-performance on organizational performance—a moderated mediation effect. The data fail to indicate that good-performer quit rates mediate the relationship between pay dispersion and organizational performance at high levels of pay-for-performance. To assess this possibility, I used a nested-equations path analytic approach to test for indirect-effects moderated-mediation (Edwards & Lambert, 2007). The approach involves substituting the regression equation(s) for the mediating variable(s), when appropriate, into the equation for the distal dependent variable (here, organizational performance). The coefficients derived from these regressions were then used to estimate direct, indirect, and total effects of pay dispersion across pay-for-performance levels.

The relationships are described using path analytic conventions (Edwards & Lambert, 2007): P_{MX} refers to the path between X (pay dispersion) and the mediator; P_{YM} is the path from the mediator to Y

TABLE 3
Regression Results: Organizational Performance

	Organizational Performance (Time 3)		
	Model 1	**Model 2**	**Model 3**
Average pay rates	16.63	9.17	5.49
Unionization	74.01	52.28	48.95
Discharge rates (Time 1)	30.26	29.86	−32.27
Selective staffing (Time 1)	−35.23*	−39.51**	−40.13*
Pay dispersion (Time 1)	36.23**	38.56**	39.49**
Pay-for-performance (Time 1)	39.57**	33.38**	31.99**
Pay dispersion * pay-for-performance		54.40**	55.26**
Good-performer quit rates (Time 2)			−53.33
Poor-performer quit rates (Time 2)			206.03*
Total R^2	0.22**	0.39**	0.42**
ΔR^2	0.22**	0.17**	0.03*

Note. $N = 111$.
* $p < .05$
** $p < .01$

FIGURE 1
Interaction of pay dispersion and pay-for-performance in predicting good-performer quit rates

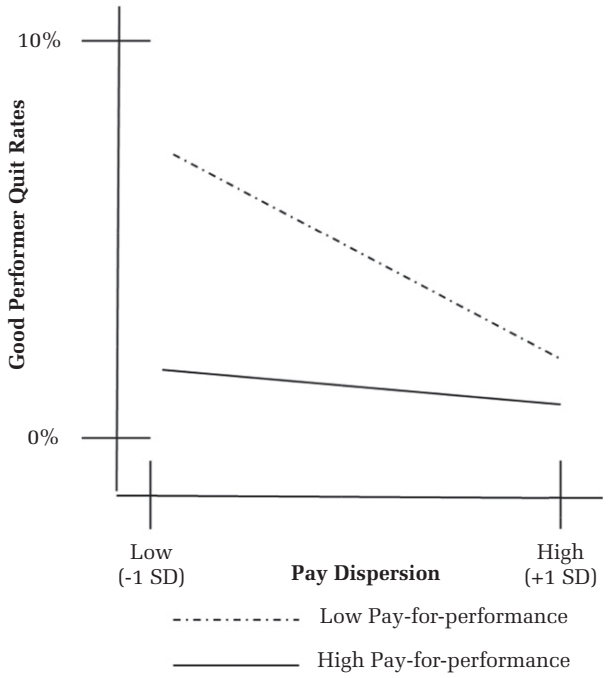
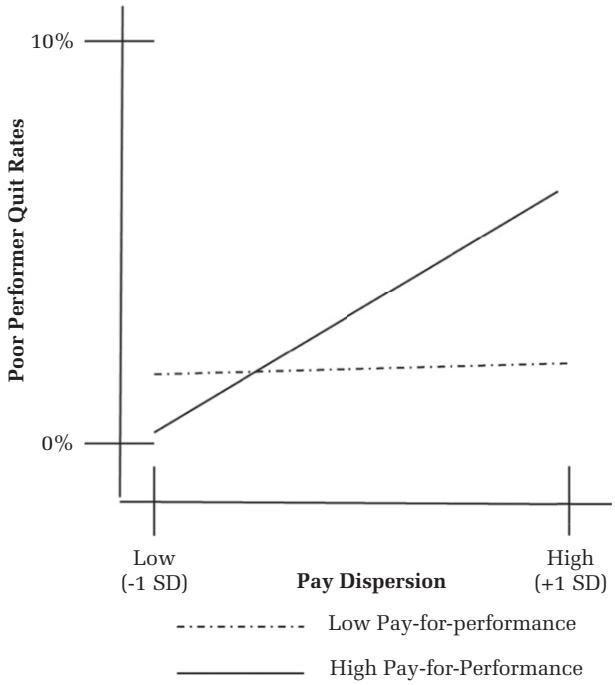


FIGURE 2
Interaction of pay dispersion and pay-for-performance in predicting poor-performer quit rates



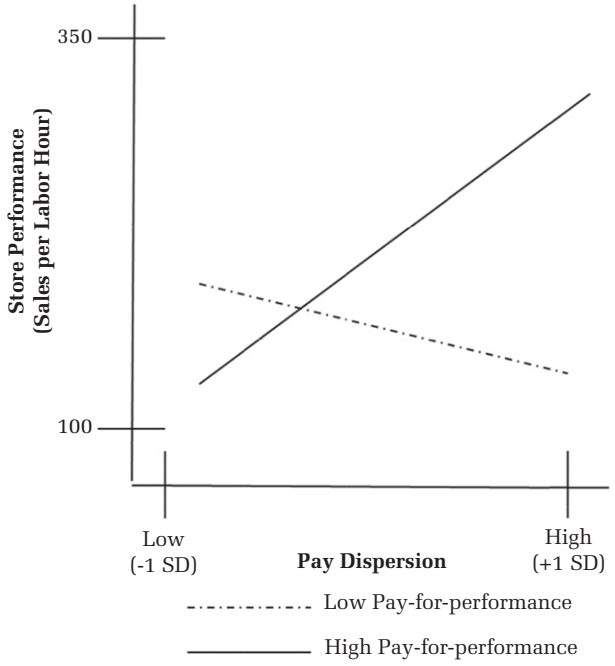
(organizational performance); P_{YX} is the direct path from X to Y (pay dispersion on organizational performance); $P_{YM} * P_{MX}$ refers to the indirect effects of pay dispersion on organizational performance through the quit-rate mediator, and $P_{YX} + P_{YM} * P_{MX}$ is the total effect (direct and indirect) of pay dispersion on organizational performance. Because Type 1 error rate may be inflated when testing product terms for significance (Shrout & Bolger, 2002), I followed suggestions (Edwards & Lambert, 2007) to construct confidence internals derived from a bootstrapping procedure with 10,000 samples.

Table 4 shows the path analysis results for poor-performer quit rates. Under low pay-for-performance, neither the indirect effect ($P_{ym}P_{mxLow\ pay\text{-}for\text{-}performance} = 0.00$, n.s.) nor the total effects ($P_{yx} + P_{ym}P_{mxLow\ pay\text{-}for\text{-}performance} = -15.77$, n.s.) of pay dispersion on organizational performance through poor-performer quit rates are significant. In contrast, the indirect ($P_{ym}P_{mxHigh\ pay\text{-}for\text{-}performance} = 8.24$, $p < .01$) and total ($P_{yx} + P_{ym}P_{mxHigh\ pay\text{-}for\text{-}performance} = 102.99$, $p < .01$) effects of pay dispersion on organizational performance via poor-performer quit rates are significant under high pay-for-performance. Thus, the results show significant indirect and total effects of pay dispersion on organizational performance through poor-performer quit rates are significant only when pay-for-performance is high. Finally, the results also show that the interaction of pay dispersion and pay-for-performance significantly predicts organizational performance in the presence of the poor-performer quit rates mediation effect. This finding suggests direct-effect moderation (Edwards & Lambert, 2007); the interaction with organizational performance is unique in that it does not operate via the mediators. Figure 4 shows the empirical model observed from these tests.

DISCUSSION

The results show that pay dispersion and organizational performance are indirectly related via poor-performer quit rates when pay-for-performance is used. The findings are consistent with recent meta-analytic evidence showing that the main effect relationship between pay dispersion and organizational performance is near zero (Park & Sung, 2013); they confirm that researchers must apply, develop, and extend theory to explain how and when pay dispersion can lead to outcomes important for organizational decision makers. In a multiwave study of independent grocery stores, pay dispersion is positively related to poor-performer quit rates under high pay-for-performance, but is not related under low pay-for-performance. Furthermore, pay dispersion

FIGURE 3
Interaction of pay dispersion and pay-for-performance in predicting organizational performance



has stronger indirect and total effects on organizational performance via poor-performer quit rates under high pay-for-performance. Pay dispersion is negatively related to good-performer quit rates when in the absence of pay-for-performance, such that the highest good-performer quit rates are observed when pay is compressed and pay-for-performance is not used. Good-performer quit rates are not related to organizational performance and therefore good-performer quit rates do not transmit the effects of explained pay dispersion on organizational performance. Finally, the results show that the interaction of pay dispersion and pay-for-performance relates directly to organizational performance: under high pay-for-performance, pay dispersion is positively related to organizational performance; under low pay-for-performance, the relationship is not significant.

Theoretical Implications

The results offer qualified support for a sorting theory perspective on the relationships among pay dispersion, pay-for-performance, and organizational performance via differential quit rates. Sorting theory suggests two related processes. The first sorting process occurs when organizational conditions differentially attract qualified or unqualified applicants; some organizations attract higher-quality and more-capable workforces. The second process occurs when organizations create environments that fit the capabilities and preferences of certain employees so that quit patterns sort the workforce. The individual-level literature offers fairly convincing evidence that good performers prefer and perform better under transparent, incentive-based compensation (e.g., Belogolovsky & Bamberger, 2014; Cadsby et al., 2007) and are more likely to stay when rewards are maximally contingent (e.g., Harrison et al., 1996). Using pay dispersion and pay-for-performance as cases in point, I expected that the interaction of pay dispersion and pay-for-performance would predict quit rates of good and poor performers and that these differential quit patterns would mediate the effect of this interaction on organizational performance. These notions have some support here, with stipulations.

Pay dispersion and pay-for-performance interact in predicting good-performer quit rates, such that the highest rates are observed when pay is compressed and pay-for-performance is low. This point estimate is consistent with sorting arguments, but the expected lowest good-performer quit rates under highly dispersed pay and pay-for-performance are not observed here. Further, good-performer quit rates are not significantly related to organizational performance and therefore there is no evidence that these rates mediate the relationship between

TABLE 4
Path Analytic Results: Direct, Indirect, and Total Effects of Pay Dispersion (Time 1) on Organizational Performance (Time 3) via Poor-Performer Quit Rates (Time 2) at Low and High Levels of Pay-for-Performance (Time 1)

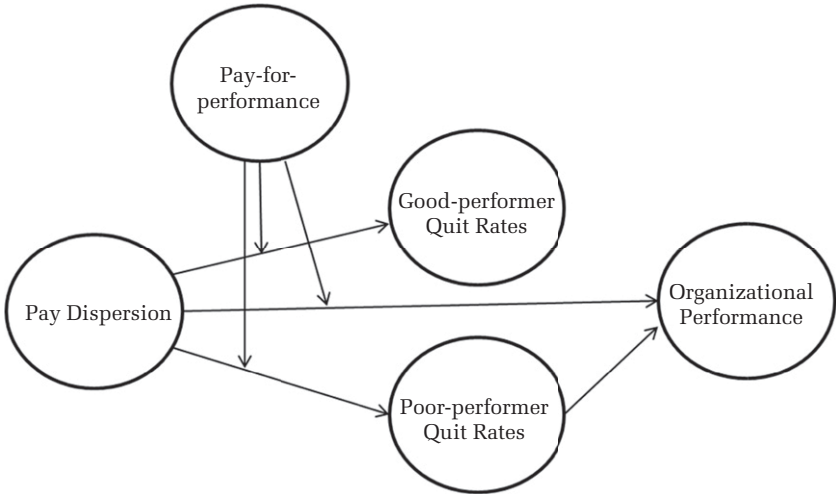
	P_{mx}	P_{ym}	Direct Effects (P_{yx})	Indirect Effects ($P_{ym}P_{mx}$)	Total Effects ($P_{yx} + P_{ym}P_{mx}$)
Simple paths for low pay-for-performance	**0.00**	206.03*	**−15.77**	**0.00**	**−15.77**
Simple paths for high pay-for-performance	**0.04****	206.03*	**94.75***	**8.24****	**102.99****

Notes. $N = 111$. Coefficients in bold are significantly different across pay-for-performance levels. P_{MX} = path from X (pay dispersion, Time 1) to M (poor-performer quit rates, Time 2), P_{YM} = path from M (poor-performer quit rates, Time 2) to Y (organizational performance, Time 3), P_{YX} = path from X (pay dispersion, Time 1) to Y (organizational performance, Time 3).

* $p < .05$

** $p < .01$

FIGURE 4
Observed empirical model



explained pay dispersion and organizational performance. This finding is noteworthy, especially given the literature's recent emphasis on star performers (e.g., Aguinis & O'Boyle, in press, 2014) suggesting that performance levels are not normally distributed and that a few outlying, star performers may disproportionately influence organizational performance. The sorting-based findings here suggest, as utility studies at the individual level have found, that occupations differ in terms of the level and range of performance variability, as does the value associated with high performance (e.g., the SDy$). The notion of "star performers" in the literature likely does not apply well to my sample of independent grocery stores. Thus, it is not entirely surprising that explained pay dispersion predicted good-performer quit rates, but these rates, in turn, did not relate to organizational performance.

Instead, the full sorting model held with poor-performer quit rates as the mediator. In particular, poor-performer quit rates appear to partially transmit the effects of pay dispersion on organizational performance when pay-for-performance is high. When pay is dispersed and explained by the use of pay-for-performance, poor performers quit at higher rates which, in turn, is associated with higher organizational performance. Among the full-time floor workers at the center of this study of independent grocery stores, employee performance was likely constrained at the upper limits. Star performers were unlikely to contribute disproportionally to organizational performance as Aguinis and O'Boyle (2014) argued will occur in knowledge-intensive and technology-driven 21st century work contexts. Instead, the findings indicate that in low-skill occupations, explained pay dispersion that encourages poor performers to quit may be more effective than efforts to retain good performers.

Taken together, the results should be considered in the broader context of sorting theory and the assessment of the utility or functionality of turnover. The study of the utility of separations and replacements has a long history in applied psychology (e.g., Boudreau & Berger, 1985). Although these treatments have not appeared recently in the literature, the current findings should be case in the light of organizational investments in pay-for-performance systems and the payoffs of rewarding and retaining high performers (e.g., Sturman, Trevor, Boudreau & Gerhart, 2003). In the case of my findings, good-performer quit rates were low across most combinations of pay dispersion and pay-for-performance and were only high when pay was compressed and pay-for-performance was not emphasized. Further, the predicted mediation of good-performer quit rates was not evident in the findings, although there was support for the utility of explained pay variation in terms of increasing organizational performance via increased poor-performer quit rates. As an anonymous reviewer suggested, a fruitful endeavor would be to merge organizational-level research on explained pay dispersion with the existing base of theory and empirical findings to isolate the conditions (e.g., environmental, industry, organizational) under which "winning the talent war" (Sturman et al., 2003) through manipulations of the pay structure is worth it.

A final direct implication of the findings is that pay dispersion significantly interacted with pay-for-performance in predicting performance in the presence of the proposed quit-rate mediators. The nature of the interaction was such that I observed the highest organizational performance levels when

pay dispersion and pay-for-performance were both high—an explained pay dispersion effect. This suggests that although poor-performer quit rates seemed to transmit part of the interactive relationship on organizational performance, other potential mediators are possible. One possibility is that explained dispersion may raise general performance or effort levels within the organization. Research has shown, for example, that effectively managed financial incentives are positively related to performance (Jenkins et al., 1998) and that meaningful differences in pay can evoke greater employee effort (e.g., Mitra et al., in press). A second possibility is that explained pay dispersion may cause the workforce as a whole to perceive stronger fairness or improve other collective job attitudes. As the pay dispersion literature has previously suggested (e.g., Shaw, 2014; Shaw et al., 2002), such positive attitudinal reactions may translate directly into better organizational performance. Future researchers would be well served to design studies that examine whether other factors can explain the direct-effects moderation observed here.

Other theoretical lenses might be used to analyze the results of this study. Tournament theory focuses on vertical pay dispersion or pay structures across organizational hierarchies (see Connelly, Tihanyi, Crook, Gangloff, 2014, for a review). The tournament model shows that individuals within and across organizational echelons compete for higher pay and promotions. As competition intensifies and promotion opportunities become rarer, the likelihood of promotions to higher levels decreases, so that exponentially wider pay differences are necessary to motivate employees. If viewed as a single round in a sequential tournament, my findings could align with tournament theory, but the horizontal pay dispersion context does not allow direct testing of motivation and sorting facets of tournament perspective. Similarly, expectancy theory suggests that individual evaluations of pay spreads and bases for pay could drive their efforts and perhaps withdrawal. From an expectancy theory perspective, pay dispersion and pay-for-performance may map roughly on the concepts of valence and instrumentality, or the desirability of rewards and the likelihood of obtaining those rewards. Extending the approach, individuals may react negatively to pay dispersion because pay differences are not desirable enough or because they have little likelihood of obtaining pay increases, such as in the absence of pay-for-performance practices. Although expectancy-theory language might explain the findings here, and some researchers have extended the theory to organizational-level applications (e.g., Kepes et al., 2009), it may be dubious to apply a within-person motivation theory to cross-organizational tests of pay practices, quit rates, and performance.

I also add to the management literature's increasingly popular conversation about explained and unexplained pay distributions (e.g., Kepes et al., 2009; Shaw et al., 2002; Shaw & Gupta, 2007; Trevor et al., 2012). The universalistic notions that pay dispersion has either functional or dysfunctional organizational consequences have previously dominated the literature. These notions should be abandoned. My findings should be combined with recent evidence about pay dispersion consequences both explained and unexplained by normatively accepted practices.

Future Research Directions

In this study, I initially outline mechanisms between pay dispersion and organizational performance outcomes, a direction researchers in this area have highlighted as a pressing need (e.g., Conroy, Gupta, Shaw, & Park, 2014; Shaw, 2014). The literature has, however, identified several other possible mediators yet to be examined. Clearly, this study could be extended by examining employee-related motivation and effort as a function of explained and unexplained pay dispersion. As noted above, higher effort or motivation may be responsible for the direct-effects moderation observed here. Another possibility is that more favorable job attitudes and justice perceptions mediate explained pay dispersion effects on organizational performance, independent of withdrawal patterns. In addition, the literature has suggested various collective outcomes of pay dispersion, but has made little progress in empirical testing.

My research design and data limitations precluded mediation tests using data aggregated from individual or team-level reports. In one initial step, researchers examined several team-related mediators of pay dispersion and performance, including conflict, cohesion, and potency, and found some evidence that pay dispersion related negatively to team processes, especially among family-owned organizations (Ensley, Pearson, & Sardeshmukh, 2007). Although that study was a positive step, the authors did not examine whether legitimate dispersion practices could explain the pay dispersion.

The logic underlying explained pay dispersion is that any practice or policy that is normatively accepted in the context can generate positive organizational outcomes. Pay-for-performance has mostly been examined as a legitimate reason for variation, but various factors can justifiably be used to create

Author's voice:
What would I do differently?

pay differentials (Conroy et al., 2014). Pay-for-performance is common in the United States and some other Western cultures, but organizations may create pay differences through measures such as skill, seniority, knowledge, competencies, family size, special allowances, and cost-of-living. For example, "skill-based pay dispersion is nonperformance based, but individuals may believe that as people's skills improve, so should their pay. In this sense, skill-based pay dispersion is legitimate, and should not result in negative equity perceptions" (Downes & Choi, 2014: 58). It would be interesting to examine whether the factors that are used to create explained pay dispersion and subsequent positive outcomes in one context relate negatively to the same outcomes in other contexts. Future research should also develop alternative predictions for outcomes and reactions to horizontal and vertical pay dispersion. Effort- and withdrawal-related dynamics may differ when employees compare pay differences within and across levels. One study, for example, found that wide horizontal pay distributions negatively affected pay fairness perceptions, but only among those at low pay distribution levels (Trevor & Wazeter, 2006). We might reasonably presume that explained and unexplained pay dispersion will have stronger equity-related consequences in horizontal comparisons than it will have across organizational levels where employees complete different and perhaps more complex and significant assignments. In addition, although pay dispersion studies often use tournament theory and individual motivation theory in parallel fashion, the perspectives do not treat motivation synonymously. Tournament theorists argue that huge pay differentials within organizations can compensate for near-zero probabilities of winning higher pay prizes. Indeed, the theory suggests that extremely large differentials are necessary to motivate individuals when the competition is difficult to win. Psychological motivation theories such as expectancy theory suggest, however, that motivation is lowered if employees perceive that performance is weakly linked with outcomes, when valence is held constant. Expectancy theory fails to clearly indicate whether ever-increasing payouts result in ever-increasing desirability of rewards. If valence of rewards reaches a maximum threshold, any reductions in instrumentalities will then lower employee motivation. Future research could examine when each perspective holds predictive veracity, perhaps by comparing the dynamics of horizontal versus vertical pay dispersion.

Limitations

Readers should consider several caveats when evaluating this research. First, organizational key informants completed the questionnaires. For years, macro-HRM and strategy researchers have debated the strengths and weaknesses of using key informants (e.g., Gupta et al., 2000; Wright, Gardner, Moynihan, Park, Gerhart, & Delery, 2001), particularly whether they have the motivation, ability, and capability to respond accurately and reliably (Tomaskovic-Devey, Leiter, & Thompson, 1994). By carefully identifying independent grocery store managers who were responsible for selection and performance management, and, in most cases, for setting and adjusting workforce pay levels, I ensured that respondents had reasonable or expert knowledge of the variables. The independent grocery stores in the sample were also small, so that managers were more likely to know about the objective information they were reporting (Batt, 2002), and the stores were not run by multiple HRM systems that can introduce error into the measurement of workforce variables (Lepak & Snell, 2002).

The pay variables can also be questioned. Pay dispersion (Gini coefficient) was estimated from manager-reported ranges. The research design made it infeasible to collect the pay level of every full-time employee. To estimate the pay structure spread, I asked the managers to report minimum, average, and maximum pay levels and also the number of employees making those general rates. When researchers have been unable to obtain full pay ranges, they have estimated dispersion using various alternative operationalizations that tend to be highly correlated. When comparisons have been possible, alternative operationalizations have shown quite similar patterns (Shaw, 2014). Clearly readers should evaluate the results considering that the pay dispersion calculation here underestimated the actual intraorganizational pay variation. As an anonymous reviewer pointed out, the pay-for-performance measure did not refer specifically to financial rewards. Readers should consider this limitation when evaluating the current results.

The analysis sample was rather small after matching data from two waves of surveys and a third wave from an archival source, which raises concerns about response bias, generalizability, and result stability. I performed response bias checks that revealed few differences between the stores in the final analysis sample and the randomly selected sample, but I cannot rule out the possibility that the analyses were somehow biased. The small sample raises questions as to whether the results can be generalized to the broader population of single-unit grocery stores and to other similar organizations such as independent retail stores. Again, the response bias checks suggest that these concerns may be minimized, but external validity threats cannot be dismissed. The theoretical model was also rather involved and many estimates

were made relative to the sample size. The use of bootstrapped standard errors reduces some concerns about the stability of the findings, but replications of the full model with larger sample sizes and in other contexts might generate additional confidence.

Key informants reported quit rates by prior performance levels. Meta-analytic results reveal minimal differences between findings generated from key informant reports of quit rates or quit rates from archival sources (Park & Shaw, 2013). In this case, however, I further asked informants to report the number of good and poor performers who quit. To reduce error, I used performance bands to guide responses (e.g., top 20 percent and bottom 20 percent), an improvement over initial studies of functional and dysfunctional quit rates (e.g., Park, Ofori-Dankwa, & Bishop, 1994; Shaw & Gupta, 2007), but future researchers should pursue alternative operationalizations of differential quit rates. For example, obtaining performance evaluation records would allow calculations of good- and poor-performer quits or the average quality of human capital lost through turnover (e.g., Dess & Shaw, 2001; Shaw, Duffy, Johnson, & Lockhart, 2005). Finally, I examined only good- and poor-performer voluntary turnover outflows. Recent literature has considered the quantity and quality of replacements (e.g., Hausknecht & Holwerda, 2013). Some stores in the sample may have used replacement strategies that ameliorated turnover's negative effects. For example, the findings supported the prediction that explained pay dispersion would relate to good-performer quit rates, but I found no evidence that good-performer quit rates mediated the effects of explained pay dispersion on performance. Several explanations may be offered: one possibility is that certain stores timely and effectively hired high-quality workers to replace good performers who departed.

CONCLUSION

I advance the literature by testing a sorting-theory-based process model of the relationships among pay dispersion, pay-for-performance, quit patterns of good and poor performers, and organizational performance. I find a stronger relationship between pay dispersion and organizational performance via poor-performer quit rates when organizations use high pay-for-performance schemes. The pay dispersion and pay-for-performance interaction also directly relates to organizational performance such that the positive pay dispersion→organizational performance relationship is stronger when pay-for-performance is high. I find further that pay dispersion and pay-for-performance interact in predicting good-performer quit rates. Good performers are most likely to quit when pay is compressed and pay-for-performance not emphasized. The findings support several major themes in sorting theory, have implications for related theories, and highlight several areas needing future theory refinements and additional empirical tests.

REFERENCES

Aguinis, H., & O'Boyle, E. 2014. Star performers in twenty-first century organizations. ***Personnel Psychology***, 67: 313–350.

Aguinis, H., & O'Boyle, E. 2015. Cumulative advantage: Conductors and insulators of heavy-tailed productivity distributions and productivity stars. ***Personnel Psychology***. DOI: 10.1111/peps.12095.

Batt, R. 2002. Managing customer services: Human resource practices, quit rates, and sales growth. ***Academy of Management Journal***, 45: 587–597.

Batt, R., & Colvin, A. J. S. 2011. An employment systems approach to turnover: HR practices, quits, dismissals, and performance. ***Academy of Management Journal***, 54: 695–717.

Belogolovsky, E., & Bamberger, P. A. 2014. Signaling in secret: Pay for performance and the inventive and sorting effects of pay secrecy. ***Academy of Management Journal***, 57: 1706–1733.

Bishop, J. 1987. The recognition and reward of employee performance. ***Journal of Labor Economics***, 5: s36–s56.

Bloom, M. 1999. The performance effects of pay dispersion on individuals and organizations. ***Academy of Management Journal***, 42: 25–40.

Bloom, M., & Michel, J. G. 2002. The relationships among organizational context, pay dispersion, and managerial turnover. ***Academy of Management Journal***, 45: 33–42.

Boudreau, J. W., & Berger, C. J. 1985. Decision-theoretic utility analysis applied to employee separations and acquisitions. ***Journal of Applied Psychology***, 70: 581–612.

Cadsby, C. B., Song, F., & Tapon, F. 2007. Sorting and incentive effects of pay for performance: An experimental investigation. ***Academy of Management Journal***, 50: 387–405.

Colquitt, J. A. 2001. On the dimensionality of organizational justice: A construct validation of a measure. ***Journal of Applied Psychology***, 86: 386–400.

Connelly, B. L., Tihanyi, L., Crook, R. R., & Gangloff, K. A. 2014. Tournament theory: Thirty years of contests and competitions. ***Journal of Management***, 40: 16–47.

Conroy, S., Gupta, N., Shaw, J. D., & Park, T. Y. 2014. A multilevel approach to the effects of pay variation. ***Research in Personnel and Human Resources Management***, 32: 1–64.

DeBrock, L., Hendricks, W., & Koenker, R. 2004. Pay and performance: The impact of salary distribution on firm-level outcomes in baseball. ***Journal of Sports Economics***, 5: 243–261.

Dess, G. G., & Shaw, J. D. 2001. Voluntary turnover, social capital, and organizational performance. ***Academy of Management Review***, 26: 446–456.

Donaldson, D., & Weymark, J. A. 1980. A single-parameter generalization of the gini indices of inequality. ***Journal of Economic Theory***, 22: 147–149.

Downes, P. E., & Choi, D. 2014. Employee reactions to pay dispersion: A typology of existing research. ***Human Resource Management Review***, 24: 53–66.

Edwards, J. R. 1996. An examination of competing versions of the person-environment fit approach to stress. ***Academy of Management Journal***, 39: 292–339.

Edwards, J. R., & Lambert, L. S. 2007. Methods for integrating moderation and mediation: A general analytical framework using moderated path analysis. ***Psychological Methods***, 12: 1–22.

Ensley, M. D., Pearson, A. W., & Sardeshmukh, S. R. 2007. The negative consequences of pay dispersion in family and non-family top management teams: An exploratory analysis of new venture, high-growth firms. ***Journal of Business Research***, 60: 1039–1047.

Fredrickson, J. W., Davis-Blake, A., & Sanders, W. M. G. 2010. Sharing the wealth: Social comparisons and pay dispersion in the CEO's top team. ***Strategic Management Journal***, 31: 1031–1053.

Gerhart, B., & Rynes, S. L. 2003. ***Compensation: Theory, evidence, and strategic implications***. Thousand Oaks, CA: Sage.

Gerhart, B., Rynes, S., & Fulmer, I. S. 2009. Pay and performance: Individuals, groups, and executives. ***Academy of Management Annals***, 3: 251–315.

Gupta, N., Conroy, S. A., & Delery, J. E. 2012. The many faces of pay variation. ***Human Resource Management Review***, 22: 100–115.

Gupta, N., & Shaw, J. D. 2014. Compensation: The neglected area of HRM research. ***Human Resource Management Review***, 24: 1–4.

Gupta, N., Shaw, J. D., & Delery, J. E. 2000. Correlates of response outcomes among organizational key informants. ***Organizational Research Methods***, 3: 323–347.

Harrison, D. A., Virick, M., & William, S. 1996. Working without a net: Time, performance, and turnover under maximally contingent rewards. ***Journal of Applied Psychology***, 81: 331–345.

Hausknecht, J. P., & Holwerda, J. A. 2013. When does employee turnover matter? Dynamic member configurations, productive capacity, and collective performance. ***Organization Science***, 24: 210–225.

Heavey, A. L., Holwerda, J. A., & Hausknecht, J. P. 2013. Causes and consequences of collective turnover: A meta-analytic review. ***Journal of Applied Psychology***, 98: 412–453.

Heneman, R. L., Greenberger, D., & Strasser, S. 1988. The relationship between pay-for-performance perceptions and pay satisfaction. ***Personnel Psychology***, 41: 745–759.

Jenkins, G. D., Jr, Mitra, A., Gupta, N., & Shaw, J. D. 1998. Are financial incentives related to performance? A meta-analytic review of empirical research. ***Journal of Applied Psychology***, 83: 777–787.

Kepes, S., Delery, J. E., & Gupta, N. 2009. Contingencies in the effects of pay range on organizational effectiveness. ***Personnel Psychology***, 62: 497–531.

Kristof, A. L. 1996. Person-organization fit: An integrative view of its conceptualizations, measurements, and implications. ***Personnel Psychology***, 49: 1–55.

Lambert, R. A., Larcker, D. F., & Weigelt, K. 1993. The structure of organizational incentives. ***Administrative Science Quarterly***, 38: 438–461.

Lawler, E. E. III, & Jenkins, G. D. Jr. 1992. Strategic reward systems. In M. D. Dunnette & L. M. Hough (Eds.), ***Handbook of industrial and organizational psychology*** (3rd ed.): 1009–1055. Palo Alto, CA: Consulting Psychologists Press.

Lazear, E. P. 1999. Personnel economics: Past lessons and future directions. ***Journal of Labor Economics***, 17: 199–215.

Lazear, E. P. 2000. Performance pay and productivity. ***American Economic Review***, 90: 1346–1361.

Lepak, D. P., & Snell, S. S. 2002. Examining the human resource architecture: The relationships among human capital, employment, and human resource configurations. ***Journal of Management***, 28: 517–543.

Mitra, A., Gupta, N., & Jenkins, G. D., Jr. 1997. A drop in the bucket: When is a pay raise a pay raise? ***Journal of Organizational Behavior***, 18: 117–137.

Mitra, A., Tenhiälä, A., & Shaw, J. D. In press. Smallest meaningful pay increases: Field test, constructive replication, and extension. ***Human Resource Management***.

Nyberg, A. 2010. Retaining your high performers: Moderators of the performance-job satisfaction—Voluntary turnover relationship. ***Journal of Applied Psychology***, 95: 440–453.

Osterman, P. 1987. Turnover, employment security, and the performance of the firm. In M. Kleiner (Ed.), ***Human resources and the performance of the firm***: 275–317. Madison, WI: Industrial Relations Research Association.

Park, H. Y., Ofori-Dankwa, J., & Bishop, D. R. 1994. Organizational and environmental determinants of functional and dysfunctional turnover: Practical and research implications. ***Human Relations***, 47: 353–366.

Park, T. Y., & Shaw, J. D. 2013. Turnover rates and organizational performance: A meta-analysis. ***Journal of Applied Psychology***, 98: 268–309.

Park, T. Y., & Sung, L. K. 2013. ***The effects of pay dispersion: A meta-analysis***. Working paper, Vanderbilt University.

Rosen, C. C., Slater, D., Chang, C.-H., & Johnson, R. E. 2013. Let's make a deal: Development and validation of the ex post I-Deals scale. ***Journal of Management***, 39: 709–742.

Salamin, A., & Hom, P. W. 2005. In search of the elusive U-shaped performance-turnover relationship: Are high performing Swiss bankers more liable to quit? ***Journal of Applied Psychology***, 90: 1204–1216.

Shaw, J. D. 2011. Voluntary turnover and organizational performance: Review, critique, and research agenda. ***Organizational Psychology Review***, 1: 187–213.

Shaw, J. D. 2014. Pay dispersion. ***Annual Review of Organizational Psychology and Organizational Behavior***, 1: 521–544.

Shaw, J. D., Gupta, N., & Delery, J. E. 2002. Pay dispersion and workforce performance: Moderating effects of incentives and interdependence. ***Strategic Management Journal***, 23: 491–512.

Shaw, J. D., Delery, J. E., Jenkins, G. D., Jr, & Gupta, N. 1998. An organizational-level analysis of voluntary and involuntary turnover. ***Academy of Management Journal***, 41: 511–525.

Shaw, J. D., Dineen, B. R., Fang, R., & Vellella, R. V. 2009. Employee-organization exchange relationships, HRM practices, and quit rates of good and poor performers. ***Academy of Management Journal***, 52: 1016–1033.

Shaw, J. D., Duffy, M. K., Johnson, J. J., & Lockhart, D. 2005. Turnover, social capital losses, and performance. ***Academy of Management Journal***, 48: 594–606.

Shaw, J. D., & Gupta, N. 2007. Pay system characteristics and quit patterns of good, average, and poor performers. ***Personnel Psychology***, 60: 903–928.

Shaw, J. D., Park, T. Y., & Kim, Y. 2013. A resource-based perspective on human capital losses, HRM investments, and organizational performance. ***Strategic Management Journal***, 34: 572–589.

Shrout, P. E., & Bolger, N. 2002. Mediation in experimental and nonexperimental studies: New procedures and recommendations. ***Psychological Methods***, 7: 422–445.

Sturman, M. C., Trevor, C. O., Boudreau, J. W., & Gerhart, B. 2003. Is it worth it to win the talent war? Evaluating the utility of performance-based pay. ***Personnel Psychology***, 56: 997–1035.

Tomaskovic-Devey, D., Leiter, J., & Thompson, S. 1994. Organizational survey nonresponse. ***Administrative Science Quarterly***, 39: 439–457.

Trevor, C. O., Reilly, G., & Gerhart, B. 2012. Reconsidering pay dispersion's effect on the performance of interdependent work: Reconciling sorting and pay inequality. ***Academy of Management Journal***, 55: 585–610.

Trevor, C. O., & Wazeter, D. L. 2006. Contingent view of reactions to objective pay conditions: Interdependence among pay structure characteristics and pay relative to internal and external referents. ***Journal of Applied Psychology***, 91: 1260–1275.

Wright, P. M., Gardner, T. M., Moynihan, L. M., Park, H. J., Gerhart, B., & Delery, J. E. 2001. Measurement error in research on human resources and firm performance: Additional data and suggestions for future research. ***Personnel Psychology***, 54: 875–901.

Jason D. Shaw (jason.shaw@polyu.edu.hk) is Chair Professor, Associate Dean for Research and Postgraduate Studies, and Co-director of the Centre for Leadership and Innovation in the Faculty of Business at The Hong Kong Polytechnic University. He received his doctoral degree from the University of Arkansas. His research interests include team effectiveness, employment relationships, financial incentives, and turnover.