

Contingencies in the effects of job-based pay dispersion on employee attitudes

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Abstract

When does pay dispersion elicit positive or negative employee attitudes? A review of the pay dispersion literature indicates a controversy around this vital question and suggests that numerous contingency factors moderate the effects of pay dispersion. In an empirical study of four Finnish companies consisting of 141 work units, we examine contingencies in attitudinal reactions to job-based pay dispersion among blue-collar workers. Based on archival pay data matched with employee survey responses ($n = 536$), we find that perceptions of pay basis legitimacy, task interdependence, and an individual's pay standing within the work unit explain the strength and direction of the relation between job-based pay dispersion and employee attitudes (i.e., work engagement and organizational commitment). Our findings have implications for the design of pay systems and contribute to a better appreciation of the complexities underlying employee attitudinal responses to pay dispersion.

KEYWORDS

blue-collar jobs, blue-collar workers, compensation, hierarchy, job evaluation, organizational commitment, pay basis legitimacy, pay dispersion, pay structure, status, task interdependence, work engagement

1 | INTRODUCTION

Over the past decades, interest has increased in flat organizations, project-based temporary work structures, and fluid roles to support adaptability across industrial contexts. However, many organizations still rely on relatively stable jobs based on task standardization, specialization, and the division of labor. This is especially true in the manufacturing sector as well as other industry sectors with “traditional” blue-collar jobs. Despite the decades-long research emphasis on the professional service industry (e.g., front-line employees in the service sector; Subramony et al., 2021), manufacturing, construction, transportation, utilities, and mining still account for approximately one-fourth of the US economy, which is almost twice as much as the service sector (Statista, 2021). Furthermore, many industry sectors with traditional blue-collar jobs have recently seen considerable job

growth (Long & Van Dam, 2018; Muro & Whiton, 2018), suggesting that their economic importance remains strong. If anything, especially due to the current supply chain problems, their significance and value are likely to continue to grow (Monteiro, 2022). As such, it is important to understand how employees in these jobs react to organizational decisions about how work is organized and how they are getting paid.

Organizations with traditional blue-collar jobs tend to prioritize efficiency and predictability by relying on precise communication, routinization, and formalization. From an efficiency perspective, these organizations believe that employees should have clear roles and that procedures should formally be defined. Although not necessarily intuitive, this approach to the structure of work and the related compensation structure may also have psychological benefits for employees. Indeed, a clear division of labor can lead to relatively stable status

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differences among employees in a work unit. Stable status differences, in turn, tend to help with one's development of a coherent self-concept and reduce *relational uncertainty*, defined as "the perceived inability to accurately discern and describe norms and expectations about appropriate behaviors and attitudes relating to interactions between teammates and the repeated interactional patterns among team members that set up such expectations" (Zhang et al., 2020, pp. 781–782). This reduction in relational uncertainty can lead to other positive work outcomes, including higher levels of team identification and task performance as well as lower levels of turnover intentions (Zhang et al., 2020).

Job design, the process of creating jobs that enable an organization to achieve its goals while motivating and rewarding employees, relies on designing clear roles, procedures, and rules. Once this is done, pay is linked to the jobs, often through a systematic job evaluation process. For example, according to WorldatWork (2020), 84% of the organizations in the United States have an established method for evaluating jobs, partly because internally developed job evaluation approaches have the potential to contribute to the creation and capture of human capital (Conroy, 2019). The goal of job evaluation is to compare jobs internally and/or externally to create a pay structure that is consistent, fair, and equitable for all employees. At the same time, the process of determining the relative value of different jobs in an organization can be used to establish stable status differences.

In Finland and throughout the Nordic countries, job evaluation systems are often used for blue-collar jobs and are preferred by unions, which are omnipresent (Occupational Safety and Health Administration, 2021). In these systems, formulas that determine the pay associated with every job are widely known, and the pay ranges for jobs are openly shared. Thus, specific procedural information about pay (Holtzen, 2022) for jobs along the status hierarchy is typically known throughout a firm. The degree to which the resulting status differences are based on internal or external pay comparisons varies. Both internal comparisons and external market benchmarking are likely to have an impact on job-based pay. However, relatively speaking, in more flexible labor markets, such as the one in the United States, job-based pay structures are more likely to emerge as an outcome of market pricing, which is an external job evaluation process (WorldatWork, 2020). In contrast, in Nordic countries and most of Europe, where the labor markets are less flexible, a thorough job evaluation that determines the internal value of jobs to an organization (e.g., using a point factor, factor comparison, job ranking, or job classification system) tends to have a stronger impact on the pay structures in work units. The evaluation of the relative value of jobs within an organization and the resulting job-based pay structures lead to relatively stable status differences within an organization.

The job evaluation process is thus one way for pay dispersion, which refers to "differences in concentration of valued social assets or resources such as pay and status among unit members" (Harrison & Klein, 2007, p. 1200), to emerge within work units. Pay dispersion can also be called spread, range, variation, and disparity. Over the past decades, several studies have examined the effects of pay dispersion across levels of analysis (e.g., Bloom, 1999; Kepes et al., 2009;

Pfeffer & Langton, 1993; Shaw, 2015; Trevor & Wazeter, 2006). Most of this research focuses on horizontal pay dispersion (differences in pay levels between individuals based on their performance and other related factors; see Conroy & Gupta, 2019; Gupta et al., 2012). Furthermore, the more recent literature on pay-related issues tends to be theoretical (e.g., Fulmer & Shaw, 2018; Park & Conroy, 2022; Park & Sturman, 2022) or centers around performance-based pay (e.g., Abdulsalam et al., 2021; He et al., 2021; Hill et al., 2017; Kong et al., 2023). Unfortunately, empirical research on *job-based* pay dispersion and pay variations across different jobs, especially based on a job evaluation process, is virtually nonexistent (Gupta et al., 2012; Shaw, 2014; Shaw & Zhou, 2021). Job-based pay dispersion can be considered a form of vertical variation that results from the evaluation of the job and its strategic value to the organization (Gupta et al., 2012).

It is an open question whether the theories that are used to predict the outcomes of pay dispersion related to person-related factors (e.g., an individual's merit or performance on the job) are applicable to job-based pay dispersion. Namely, many commonly used theories to study the effects of pay dispersion (e.g., relative deprivation and tournament theory; e.g., Deutsch, 1985; Lazear & Rosen, 1981) tend to predict that status, power, or pay disparity incites competition, conflict, deviance, and counterproductive work behaviors among some unit members (e.g., Bloom, 1999; Homans, 1961; Pfeffer & Langton, 1993; Siegel & Hambrick, 2005). Many of these studies have been conducted in contexts that tend to maximize the level of pay disparity based on person-related factors, such as an assessment of performance on the job (not the value of the jobs themselves), including faculty members, top management teams, sport teams, and laboratory experiments with students. Thus, stark contrasts have been highlighted (extreme pay differences), or the dispersion has not been related to a clear division of labor and, therefore, clearly defined jobs. Unfortunately, there is limited research examining the effects of pay dispersion in settings with more moderate levels of job-based pay dispersion at the work-unit level (but see Zhang et al., 2020), especially for blue-collar jobs. Therefore, research is needed at the work-unit level, as the jobs within these units are in close proximity so the contributions of coworkers can be easily identified by the employees within the unit (i.e., identifiability of work inputs; Shaw, 2014). Consequently, employees primarily compare their pay with that of their coworkers within their own *work units* (e.g., Breza et al., 2018; Werner & Mero, 1999), which then has important consequences on attitudinal and behavioral reactions.

Recent research (Zhang et al., 2020) has highlighted that large parts of the compensation literature have focused on the competition-enhancing qualities of pay and promotions (e.g., tournament theory; Lazear & Rosen, 1981), which tend to facilitate the fulfillment of self-enhancement, a motive to maintain or enhance self-esteem (Chattopadhyay et al., 2011). Meanwhile, less attention has been given to the cooperative relationships that can reduce uncertainty related to the social self (Zhang et al., 2020). The uncertainty reduction model of relational hierarchy argues that the legitimacy of the status hierarchy reduces uncertainty about group norms and instrumental outcomes (Chattopadhyay et al., 2011). Building on this literature, one can argue

that differences in pay grades (i.e., pay grade dissimilarity) within a work unit should *reduce* relational uncertainty. In turn, this may lead to positive employee outcomes (higher team identification, task performance, and lower turnover intentions; Zhang et al., 2020).

Taken together, most of the existing literature has focused on person-based differences in pay (i.e., horizontal pay dispersion); the impact of job-based pay structures on employee attitudes is poorly understood (Gupta et al., 2012; Shaw, 2014; Shaw & Zhou, 2021). Research at the individual level has tended to focus on the effects in relatively unique settings, such as faculty members, students, or professional athletes, and it is unknown to what extent these findings are generalizable to the vast majority of employees, especially blue-collar workers. Therefore, the theories commonly used to predict pay dispersion outcomes (e.g., relative deprivation and tournament theory) might have limited applicability. To address these and related issues, we build on the literature on the relational benefits of pay dispersion and functional hierarchies to explore the contingencies in how job-based pay dispersion within work units (i.e., differences in pay for different jobs within a work unit) is associated with important employee attitudes in the context of blue-collar jobs. To do so, we use employee survey and archival pay data from four companies in Finland. Our study suggests that job-based pay dispersion can have positive effects on employee attitudes, likely due to the reduction of relational uncertainty and related benefits of functional hierarchies. As such, our study contributes to a better appreciation of the functionality of job-based pay dispersion from an employee perspective.

2 | THEORETICAL BACKGROUND AND HYPOTHESES DEVELOPMENT

Although it is generally recognized that “pay dispersion per se is neither functional nor dysfunctional” and that “situational contingencies determine the strategic effectiveness of dispersion (or lack thereof)” (Shaw et al., 2002, p. 504), the extent to which this notion applies to employee attitudes is not well understood (Conroy et al., 2014; Downes & Choi, 2014; Shaw, 2014). Gerhart and Rynes (2003, p. 258) highlighted that the effects of pay dispersion on employee attitudes were “one of the most important priorities for future research.” Unfortunately, apart from a few studies on horizontal pay dispersion due to performance-based pay (e.g., Breza et al., 2018; Conroy & Gupta, 2019), there is limited research on employee attitudinal reactions to pay dispersion. Indeed, we know surprisingly little about the conditions under which pay dispersion evokes functional versus dysfunctional attitudinal responses.

The effect of differential reward allocations and the resulting pay dispersion on various outcomes is contingent upon several factors. A large body of research supports explained pay dispersion theory (Shaw & Zhou, 2021) according to which employee reactions to pay dispersion vary dramatically to the degree that the observed pay dispersion is due to reasons that are normatively accepted and considered legitimate (e.g., skills, task performance) or illegitimate (e.g., political behaviors) (e.g., Kepes et al., 2009; Trevor et al., 2012). Furthermore,

individual reactions to pay dispersion can vary based on an individual's standing in the pay distribution (Abdulsalam et al., 2021; Fulmer & Shaw, 2018; Gartenberg & Wulf, 2017; Trevor & Wazeter, 2006) as well as task interdependence (Shaw et al., 2002).

Building on these ideas, a recent field experiment by Breza et al. (2018) reported that in fully *independent* (production) work settings, where employees do not easily observe coworker productivity, the consequences of illegitimate pay dispersion on both employee productivity and morale can be deleterious. Specifically, the authors found that when employees independently worked on the same product in physically separated production units, the relatively lower paid workers reduced output and attendance when the pay dispersion was perceived to be illegitimate (i.e., employees did not perceive productivity differences to justify differential wages). Furthermore, in a high pay dispersion condition, workers were less able to cooperate at the end of the study in that they reported fewer social-network connections (to dispense advice, socialize, borrow, or lend). The authors concluded that, in settings where quantifying an individual employee's productivity is difficult, it is challenging to justify differential reward allocations and the resulting pay differences. This, in turn, helps to explain why pay compression tends to be common among wage-workers. Breza et al. (2018, p. 660) further suggested that one way for organizations to reduce the moral hazard associated with these situations would be to alter “the workplace itself—through job titles, physical colocation of similar workers, or construction of teams or units ... to affect who a worker views as being in her reference group.”

In contrast to this experimental study, in many workplace settings, including production settings, the degree to which work is interdependent tends to vary across work units. We know relatively little about how job-based pay dispersion affects employee attitudes as a function of task interdependence. Although it is often assumed that pay dispersion generally has a negative effect in interdependent contexts, there is evidence to suggest that legitimate pay dispersion has a positive effect on performance in such contexts (Shaw et al., 2002; Trevor et al., 2012). Unfortunately, no comprehensive assessment of the effects of dispersed pay structures across independent and interdependent contexts exists (Hill et al., 2017; Shaw, 2014; Shaw & Zhou, 2021).

In summary, the research has clearly established that employees primarily compare their pay with that of their coworkers in their own *work unit*, and those comparisons can have important consequences on their attitudes. In Breza et al.'s (2018) study, employees were paid differently, depending on their individual productivity level. Interestingly, employees in work units where pay differences were large (“pay disparity units”) reported lower levels of happiness than did those working for units where pay was compressed. Even the high-ranking workers in the pay-disparity units reported significant reductions in happiness. However, their study focused on the effects of horizontal pay dispersion based on individual productivity, and the degrees of task interdependence as well as status hierarchies across different jobs were essentially held constant. Therefore, it remains unknown how their findings generalize to more realistic organizational settings, where these factors can vary considerably. Put differently, it is

unknown whether and when employees' attitudinal reactions and other outcomes are affected by job-based pay dispersion as it commonly exists in organizations, where the levels of task interdependence vary across work units. In this study, we seek to answer this and related questions.

To do so, we examine the effects of job-based pay dispersion in work units on two employee attitudes, work engagement and organizational commitment. Both attitudes are related to important behavioral outcomes, such as turnover and job performance (e.g., Halbesleben, 2010; Meyer et al., 2002) as well as unit-level performance (e.g., Gong et al., 2009; Harter et al., 2002). Work engagement has been defined as a positive, fulfilling work-related state of mind that is characterized by vigor, dedication, and absorption (Schaufeli et al., 2006). Organizational commitment has been defined as "a volitional psychological bond reflecting dedication to and responsibility for a particular target," that is, the organization (Klein et al., 2014, p. 137). Although both attitudes denote "positive attachments to one's work," they are empirically distinct (Hallberg & Schaufeli, 2006, p. 160). For example, whereas work engagement is more related to outcomes such as stress and associated health complaints, organizational commitment is more strongly associated with deliberations, such as turnover intentions (Hallberg & Schaufeli, 2006). Nevertheless, because their construct spaces overlap, we do not expect substantial differences between them.

In the next sections, we develop hypotheses related to the effects of job-based pay dispersion on these employee attitudes. We investigate how job-based pay dispersion is associated with employee attitudes as a function of perceptions of the legitimacy of reward allocation criteria (i.e., pay basis), internal pay standing, and task interdependence. In doing so, we build on the literature on relational demography and functional hierarchies to argue that job-based pay dispersion can have functional effects on employee attitudes.

2.1 | Perceptions of pay basis (il)legitimacy

Early research on the effects of pay dispersion has reported conflicting results. Some studies have found that pay dispersion is associated with functional outcomes (e.g., Becker & Huselid, 1992; Eriksson, 1999); others have reported that dispersed pay structures are associated with dysfunctional consequences (e.g., Bloom, 1999; Pfeffer & Langton, 1993). As discussed earlier, these opposing results are not surprising because the effects of pay dispersion are likely to depend on various contingencies. The basis for reward allocation and the resulting pay dispersion has been found to be one of the central contingencies (e.g., He et al., 2021; Hill et al., 2017; Kepes et al., 2009; Shaw, 2015; Shaw et al., 2002; Trevor et al., 2012).

The literature on relational demography emphasizes the importance of the legitimacy of status hierarchies. If a status hierarchy is based on legitimate factors, it tends to have positive effects; if it is based on illegitimate reasons, the consequences should be negative

(Chattopadhyay et al., 2011). In our study context, job-based pay dispersion creates status hierarchies, as employees in jobs with higher job evaluation ratings are considered more valuable to the company. If the job-based pay dispersion in a work unit is based on employees' "true status on qualities that are accepted within that context as being relevant to status distribution" (Chattopadhyay et al., 2004, p. 191), the effects on employees should be positive. Obviously, for employees to assess the legitimacy of the status hierarchy (i.e., pay dispersion), the process used for establishing the hierarchy should be transparent and fair (Chattopadhyay et al., 2004). Thus, on average, dispersed pay structures that are perceived to be legitimate and fair should yield committed (Colquitt et al., 2001; Colquitt et al., 2013) and engaged (Blader & Tyler, 2009; Tyler & Blader, 2003) employees.

However, under any compensation system, employees may perceive that politics and related illegitimate criteria play a role in the determination and allocation of pay and promotions (Gupta & Jenkins, 1996; Kacmar & Carlson, 1997). Reward-allocation criteria that are not normatively accepted, such as political behaviors (Suchman, 1995), should evoke feelings of unfair and unjust treatment (Konovsky, 2000; Simons & Roberson, 2003), especially if such criteria result in dispersed pay structures (Kepes et al., 2009; Shaw et al., 2002). Furthermore, political behaviors often cause negative, anxiety-provoking reactions among employees, including low organizational commitment and job involvement (Kacmar & Baron, 1999; Miller et al., 2008). Thus, when reward allocation decisions are perceived to be based on political motives or other illegitimate factors, they tend to have negative effects (Salimäki & Jämsén, 2010). On average, dispersed pay structures due to illegitimate reasons should result in relatively uncommitted and disengaged employees.

Unit-level evidence supports these general dynamics. For example, Shaw et al. (2002) found that dispersed pay structures due to legitimate reasons tend to enhance organizational effectiveness. Similarly, Kepes et al. (2009) showed that only legitimate (e.g., performance-based) pay differentials were associated with higher organizational effectiveness. The authors reported that accident rates were highest when the pay spread was high (low) and performance-based pay was low (high). They also found that the highest accident rates were observed when the pay spread was wide and politically motivated, and vice versa. Trevor et al. (2012) explicitly tested for differences between the dispersion in explained pay (DEP) and dispersion in unexplained pay (DUP)¹ in a sample of hockey players from the National Hockey League (NHL). The authors found that DEP was related to interdependent team performance, while DUP had no effect or a detrimental effect on team performance.

Therefore, we hypothesize that perceptions of pay basis (il)legitimacy is an importance contingency factor in determining whether job-based pay dispersion has functional effects on employee attitudes. To the extent that employees perceive that the reward allocation criteria are legitimate, they should display positive attitudinal reactions to job-based pay dispersion because it reduces relational uncertainty and evokes feelings of fairness. Conversely, perceptions

of illegitimate criteria in reward-allocation decisions should evoke dysfunctional or negative attitudinal responses.

Hypothesis 1. Perceptions of pay basis illegitimacy moderates the negative relation between job-based pay dispersion and employee attitudes such that the relation is stronger when perceptions of pay basis illegitimacy are high rather than low.

2.2 | Pay standing

When judging the adequacy of their pay, employees engage in social comparisons; they judge the fairness of their own pay relative to that of their coworkers (Huseman et al., 1987; Trevor & Wazeter, 2006). Relative deprivation theory (Crosby, 1984) stipulates that feelings of deprivation emerge to the extent that individuals feel they deserve more pay than they currently earn. For example, Pfeffer and Davis-Blake (1992) and Bloom (1999) argued that those who have a low pay standing (i.e., employees that are on the low end of the pay distribution) feel more deprived as the degree of pay dispersion increases. Both studies found support for this notion and concluded that pay dispersion had stronger negative effects for employees at the low (vs. high) end of the pay distribution.

Building on these studies, Trevor and Wazeter (2006) examined the combined effects of pay dispersion and employee pay standing on equity perceptions. They argued that those at the high (vs. low) end of the pay distribution tend to feel fairly treated and are more satisfied, both in terms of their absolute pay (i.e., level) and their relative pay (i.e., standing). Thus, when an individual is at the high end of an organization's pay distribution (i.e., one's internal pay standing is high), pay dispersion strengthens one's perceptions of having an advantage relative to others. Aligned with these arguments, Trevor and Wazeter found that the effect of performance-driven horizontal pay dispersion on equity perceptions was strongly negative for employees with a low pay standing but slightly positive for employees with a high pay standing. Given these negative consequences of dispersed pay structures for employees at the low end of the pay distribution, Trevor and Wazeter concluded that the potential benefits of pay dispersion (e.g., Kepes et al., 2009; Shaw et al., 2002) must be weighed against the likely negative consequences for those at the low end of the distribution (see also Fulmer & Shaw, 2018).

However, it is unclear whether the dynamics of relative deprivation also apply to job-based pay dispersion. Using arguments rooted in the concepts of relational demography and social identity, Zhang et al. (2020) found that those working with teammates who are in a different pay grade (i.e., pay grade dissimilarity; a construct similar to job-based pay dispersion) may experience less social uncertainty in their work relations. The authors argued that when legitimate and stable status differences are salient to team members, higher pay grade dissimilarity provides team members with information about status differences and lines of communication, which facilitates employee interactions. They also reported that the effect is more pronounced

for those in lower pay grades because employees with a lower social status tend to be more influenced by their social environment. Thus, pay grade dissimilarity had a *stronger positive* effect on employee attitudes and behaviors for those with a *lower* relative pay standing within a team (Zhang et al., 2020).

Taken together, we expect that a high pay standing (i.e., being at the high end of the job-based pay distribution) should strengthen one's perception of a pay advantage relative to others when job-based pay dispersion is high. Consequently, employees with a high pay standing should feel fairly treated (e.g., Smith et al., 2012) and experience, on average, high organizational commitment and work engagement (Blader & Tyler, 2009; Colquitt et al., 2013; Tyler & Blader, 2003). A low pay standing could strengthen one's perceptions of a pay disadvantage relative to others, evoking negative attitudinal reactions (e.g., low organizational commitment and work engagement). However, in a context of high *job-based* pay dispersion, which reflects and communicates stable status differences, the effects could also be positive (Zhang et al., 2020). Consistent with these arguments, job-based pay dispersion should activate social categorization processes and reduce relational uncertainty within a work unit. Because job-based pay differentials tend to be perceived legitimate, they should minimize an employee's experienced uncertainty and anxiety and foster positive attitudinal reactions and cooperative behaviors among employees within a work unit (Zhang et al., 2020). Formally, we offer the following hypothesis:

Hypothesis 2. An employee's pay standing moderates the positive relation between job-based pay dispersion and employee attitudes such that the relation is stronger when an employee's pay standing is high rather than low.

2.3 | Task interdependence

Task interdependence—the degree to which group members must work closely with others and share materials, information, and expertise to complete their tasks (Cummings, 1978)—is likely to vary across work units within organizations, depending on the design of jobs and division of labor. The general consensus in the compensation literature seems to be that dispersed pay structures in interdependent work settings have detrimental effects on individual employees, group functioning, and performance. Arguments from equity (Adams, 1965) and related theories have been used to argue that highly dispersed pay structures in interdependent work settings erode cooperation and foster competition and conflict, leading to low individual and unit-level performance (e.g., Akerlof & Yellen, 1988; Bloom, 1999; Deutsch, 1985; Pfeffer & Langton, 1993; Shaw et al., 2002). However, many studies reporting these negative effects in interdependent work settings have conceptual and methodological shortcomings (see Gerhart & Rynes, 2003). Furthermore, recent studies using data from professional sports teams in interdependent settings (National Basketball Association [NBA], Halevy et al., 2012; NHL, Trevor et al., 2012) have shown that dispersed pay structures can have positive effects on unit-level performance.

Consequently, the long-standing consensus that dispersed pay structures between interdependent workers have negative consequences is beginning to wane. Indeed, more recent research has noted that pay dispersion means only that the reward allocation among employees is unequal, not that it is inequitable or illegitimate. For instance, Trevor et al. (2012, p. 591) argued that “in interdependent contexts where individual contributions are identifiable, inequity perceptions are more likely *without* pay dispersion as pay equality produces pay inequity.” This view is aligned with functional models of hierarchy (Anderson & Brown, 2010), according to which the unequal distribution of power and status within a unit can have positive attitudinal and behavioral effects on the individuals within that unit, including their coordination; cooperation; and, ultimately, unit-level performance (e.g., Halevy et al., 2011; Ronay et al., 2012). Given that functional hierarchies reflect stable status differences, this view is also aligned with the aforementioned arguments based on the uncertainty reduction model of relational demography (Chattopadhyay et al., 2011; Zhang et al., 2020).

Specifically, hierarchical structures can fulfill important psychological needs better than other organizational forms, including egalitarian structures (Gruenfeld & Tiedens, 2010). For example, hierarchies tend to provide certainty, predictability, responsibilities, expectations, and chains of communication and authority. Within such an environment, employees can more easily fulfill some of their fundamental psychological needs (Halevy et al., 2011; Magee & Galinsky, 2008), which should evoke strong organizational identification (Hogg, 2000, 2007). Organizational identification is positively associated with organizational commitment, job satisfaction, job involvement, and related attitudinal and behavioral outcomes (Riketta, 2005). For these and related reasons, work structures that distribute power and status can decrease the potential for conflict and enhance coordination and productivity (Ronay et al., 2012).

Hierarchical structures are also consistent with beliefs in social mobility, meritocracy, and the equity (instead of the equality) reward-allocation norm (Jost et al., 2003; McCoy & Major, 2007) as well as general notions of social justice. Thus, hierarchical structures can contribute to perceptions of procedural and outcome-oriented fairness, which have beneficial effects for individual employees and unit-level functioning (Tyler, 2006). Vertically dispersed pay structures are a manifestation of a hierarchical structure and, thus, an indicator of hierarchical differentiation within a work unit and overall organization. Therefore, ideas from the literature on functional hierarchical structures apply to job-based pay dispersion (Anderson & Brown, 2010; Halevy et al., 2012). However, hierarchical structures and their manifestations, including dispersed pay structures, can also have detrimental consequences for individuals and organizational units. Contextual factors, including task interdependence, are likely to influence whether dispersed pay structures based on job evaluations have beneficial or detrimental effects (Halevy et al., 2011; Ronay et al., 2012).

According to Halevy et al. (2011), a functional hierarchical structure is beneficial and potentially necessary in highly interdependent settings, especially if employees are procedurally interdependent. In such contexts, the unique contributions of individual employees must be integrated and combined to determine the outcome (Steiner, 1972). Thus,

there is a strong need for coordination and cooperation, which hierarchical structures provide (Halevy et al., 2011; Ronay et al., 2012). A characteristic of such an interdependent setting is that employees can easily monitor the performance of each individual within their work unit. High (low) performers and otherwise functional (dysfunctional) employees can be easily identified by their peers and managers (LePine & Dyne, 2001). In a functional hierarchy, such employees can be rewarded accordingly with promotions (demotions) or otherwise expanding (declining) job responsibilities (Halevy et al., 2011; Halevy et al., 2012; Ronay et al., 2012). Therefore, as a manifestation of a hierarchical structure, pay dispersion based on stable status differences, such as those based on a systematic job evaluation process and related promotions, can be viewed as legitimate and fair in interdependent work settings.

In a study using data from the NBA, Halevy et al. (2012) found that hierarchical differentiations in pay and participation enhanced team performance by facilitating intragroup coordination and cooperation. Their results indicate that hierarchical structures in pay and participation are beneficial in interdependent settings, which could also explain Bloom's (1999) opposing results (baseball is not an interdependent context; Gerhart & Rynes, 2003; Trevor et al., 2012). Furthermore, in work settings, jobs are commonly assigned to pay grades, which are likely to be seen as stable status markers for individuals within a work unit's hierarchy (Zhang et al., 2020). This status hierarchy offers clarity, structure, and opportunities for enhancement for those with a lower status (Chattopadhyay et al., 2011; Zhang et al., 2020). Indeed, under these conditions, working with dissimilar others may lead to reduced uncertainty about the division of labor (what is and what is not “in my pay grade”; Zhang et al., 2020), combined with clear group norms about collaboration that may yield psychological benefits for employees, irrespective of an individual employee's pay position in the pay structure. This may be especially relevant for blue-collar jobs where tasks are standardized and the division of labor is clear.

Overall, evidence indicates that pay dispersion may not have the previously assumed detrimental consequences in interdependent work settings. Job-based pay dispersion in such a context should allow employees to fulfill some of their inherent psychological needs of security and stability (Halevy et al., 2011). Such feelings should lead to higher levels of organizational commitment and work engagement (Blader & Tyler, 2009; Colquitt et al., 2013; Trevor et al., 2012; Tyler & Blader, 2003). Therefore, we predict the following:

Hypothesis 3. Task interdependence moderates the positive relation between job-based pay dispersion and employee attitudes such that the relation is stronger when task interdependence is high rather than low.

3 | METHODS

3.1 | Sample

Our sample consists of blue-collar workers in four Finnish companies: a zinc production factory, a waterpower establishment, a dairy

production business, and a technology maintenance company. The employees in these four companies worked in 150 units, of which we have data on 141. We assessed the effects of job-based pay dispersion at the work-unit level, as pay dispersion homogeneity cannot be assumed across an organization (Conroy et al., 2014). In addition, this is the level at which the consequences of pay comparisons have the strongest impact on employee reactions (Werner & Mero, 1999). Work units in this context refer to cross-functional entities that consist of distinct jobs at different hierarchical levels within each organization, where the employees within a work unit have the same supervisor. Among other things, the supervisor is responsible for the work allocation and coordination within the unit and for the job evaluation process for all employees in their respective units. The average size of a work unit in the studied organizations was 16.9 persons. In addition to records-based pay data, we collected data using employee surveys.

We obtained pay information from company records for all employees within each work unit to calculate the pay variables. In all four companies, an individual's base pay consisted of two components: job-based pay, based on job evaluation, and merit pay, based on supervisory appraisals of employee performance and capabilities (e.g., knowledge, skills, abilities, and experience).² Job-based pay differentials in this context are clearly visible to all employees because this information is openly communicated through job titles and related pay grades. Pay criteria and pay formulas are openly shared, indicating a high level of procedural transparency and general distributive pay transparency (Holtzen, 2022). We focus on job-based pay dispersion, as this component represents a large portion of employees' overall pay (87.5% of total pay, on average, in our sample) and varies substantially among employees within a work unit.

Surveys were sent to all employees in the four organizations. The surveys were administered to employees in their native language, Finnish. Their voluntary participation was emphasized, and the survey responses were anonymously analyzed. We combined the survey responses with archival pay data using randomly generated unique identifiers. Of the 1681 employees who received the survey, 739 responded, yielding an overall response rate of 44%. Missing data decreased the usable sample size. Pay data were not available for 40 respondents, as they did not include their unique identifiers on the survey. We also excluded an additional 10 employees because they were the only employees in their work units or because they reported directly to upper management. Missing survey responses (e.g., "I don't know" responses) further decreased the sample size available for our data analysis. The final usable sample size for our analyses was $n = 536$.

3.2 | Measures

3.2.1 | Independent variables

Job-based pay dispersion

We used the coefficient of variation as our measure of job-based pay dispersion at the work-unit level, which is defined as the standard

deviation divided by the mean, in this case, the mean for the work unit (Shaw et al., 2002; Shaw & Gupta, 2007; Trevor & Wazeter, 2006). Minimum job-based pay dispersion occurs when all members of a unit occupy a job with a similar status (reflected in their pay). Given that the coefficient of variation is a standardized measure, comparisons can be made across different organizations with distinct pay systems (Harrison & Klein, 2007).

Pay standing

Given our conceptualization of internal pay standing and following past research (Pfeffer & Davis-Blake, 1992; Trevor & Wazeter, 2006), we calculated an employee's pay standing as the employee's job-based pay divided by the average pay level within the employee's work unit.

Perceptions of pay basis illegitimacy

The respondents were asked to indicate the extent to which pay allocation and promotion decisions were based on political (i.e., illegitimate) factors using six items from the pay and promotion subscales of the Perceptions of Organizational Politics scales (Ferris & Kacmar, 1992; Kacmar & Carlson, 1997) on a 5-point Likert-type scale ranging from "totally agree" (1) to "totally disagree" (5). Example items included "Those who have been promoted in this company, have deserved it" (reverse coded) and "The decisions on promotions are made by 'the look of the employee'" ($\alpha = 0.94$).

Task interdependence

We used the four-item, 5-point Likert-type received task interdependence scale reported in Van der Vegt et al. (1998, p. 127) with anchors ranging from "little if at all" (1) to "to a great extent" (5). Example items included "To what extent do you depend on your colleagues for information and advice?" and "To what extent do you depend on your colleagues for doing your work well?" ($\alpha = 0.84$; $ICC_1 = 0.08$ [$CI = 0.01, 0.15$], $ICC_2 = 0.26$, median $r_{wgj} = 0.80$).

3.2.2 | Dependent variables

Organizational commitment

Organizational commitment was assessed with two items (e.g., "How committed are you to this organization?") from Klein et al.'s (2014) organizational commitment scale. The items were measured on a 5-point Likert-type scale ranging from "little if at all" (1) to "to a great extent" (5) ($\alpha = 0.88$).

Work engagement

The respondents were asked how often they have feelings such as "When I get up in the morning, I feel like going to work" and "I get carried away when I am working." The 9-item, 7-point Likert-type scale was based on the work engagement scale by Schaufeli et al. (2006), with anchors ranging from "never" (0) to "daily" (6) ($\alpha = 0.95$).

3.2.3 | Control variables

In alignment with previous research (e.g., Clark et al., 2009; Trevor & Wazeter, 2006), we controlled for age and gender (male = 1, female = 2). We also controlled for the highest education level of the respondents, their organizational tenure (years of employment), as employees with higher education levels and higher organizational tenure are typically more committed and engaged (Cohen, 1992). Employees provided information about their age, gender, education, and tenure in the survey.

We further controlled for the mean level of work unit pay because Harrison and Klein (2007) asserted that when studying the pay disparity, researchers should statistically control for the within-group mean of the attribute (i.e., pay). Because those at the higher level of the pay spectrum within a team might have perceptions that are more favorable about pay system legitimacy, we also controlled for the relative pay level (pay standing) within the unit in all analyses. The work-unit size (number of employees) was also controlled for, as it might have an impact on both job-based pay dispersion and attitudes. The unit size and the pay variables came from the company records.

3.3 | Analytical strategy

The associations between covariates and outcome variables were examined with random-effect multilevel linear regression (Bliese et al., 2007; Hill & Gelman, 2007), in which the participants were grouped within work units ($n = 141$) and within organizations ($n = 4$), adjusted for the control variables. Thus, the data were structured at three levels: individuals (Level 1), work units (Level 2), and organizations (Level 3). We also allow the standard errors to correlate within the four firms (Antonakis et al., 2021). The job-based pay dispersion, unit size, and task interdependence variables were treated as aggregated, group-level variables. That is, each employee was assigned the mean score in their work unit. All other variables were treated as individual-level covariates (Bliese et al., 2007).

The interaction effects were examined by following the best-practice recommendations for testing the cross-level interactions in multilevel models (Aguinis et al., 2013). Job-based pay dispersion ranged from 0 to 0.19. The zero value indicates no dispersion, while higher values indicate more dispersion. All other independent variables were centered at their grand means. Unless stated otherwise, the interaction effects were illustrated by plotting the model-predicted values against job-based pay dispersion for high (1 SD above the mean) and low (1 SD below the mean) levels of the moderator variable.

The proportion of variance explained by the model was assessed with the multilevel variance partitioning method, R^2 (MVP), which has been shown to perform well in the multilevel context (LaHuis et al., 2014; Nakagawa & Schielzeth, 2013). R^2 (MVP) is the variance of the predicted scores divided by the

variance of the predicted scores plus the Level-1, Level-2, and Level-3 variance components.

4 | RESULTS

Table 1 presents the descriptive statistics of the sample. The correlations between job-based pay dispersion and attitudes were not statistically significant. Additionally, according to the multilevel linear regression results, when the control variables were added, the main effects of job-based dispersion on employee attitudes were nonsignificant (see Tables 2 and 3, Model 2).

In Hypothesis 1, we predicted that perceptions of pay basis illegitimacy moderates the negative relation between job-based pay dispersion and employee attitudes such that the relation is stronger when perceptions of pay basis illegitimacy is high rather than low. In support of this hypothesis, the relations of job-based pay dispersion on organizational commitment were moderated by the perceptions of pay basis illegitimacy (see Table 2, Model 4 and Figure 1)³. High job-based pay dispersion was associated with higher commitment at low ($B = 2.91, p < 0.05; CI^4 = 0.25, 5.57$ at the level of 1.5 SD below the mean) but not high levels of perceptions of pay basis illegitimacy ($B = -1.65, p = 0.49; CI = -6.29, 2.99$ at the level of 1.5 SD above the mean). Similarly, the association between job-based pay dispersion and work engagement was moderated by the perceptions of pay basis illegitimacy (see Table 3, Model 4 and Figure 2). High job-based pay dispersion was associated with higher work engagement at low ($B = 4.11, p < 0.01; CI = 1.48, 6.74$) but not high levels of perceptions of pay basis illegitimacy ($B = -3.34, p = 0.26; CI = -9.15, 2.46$). Thus, our findings support Hypothesis 1 for both employee attitude measures: the relation between job-based pay dispersion and employee attitudes was negative albeit not statistically significant when perceptions of pay basis illegitimacy were high, whereas the relation was positive and statistically significant when perceptions of pay basis illegitimacy were low.

Hypothesis 2 predicted that an employee's pay standing moderates the positive relation between job-based pay dispersion and employee attitudes such that the relationship is stronger when an employee's pay standing is high rather than low. Our results indicate that the relation between job-based pay dispersion and organizational commitment was moderated by pay standing (see Table 2, Model 5 and Figure 3). Higher job-based pay dispersion was associated with higher commitment at high ($B = 4.90, p < 0.05; CI = 0.76, 9.02$) but not low levels of pay standing within a work unit ($B = -2.70, p = 0.36; CI = -8.48, 3.09$). However, the interaction was not statistically significant for work engagement (see Table 3, Model 5). As the relation between job-based pay dispersion and organizational commitment was positive and statistically significant for those with high pay standing, but not significant for those with low pay standing, our results for job-based pay dispersion support Hypothesis 2 for one of our attitudinal outcomes (i.e., organizational commitment).

Finally, we tested Hypothesis 3. Our hypothesis proposed that task interdependence moderates the positive relation between

TABLE 1 Descriptive statistics and correlations.

Variables	Mean	SD	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
<i>Individual-level variables</i>														
(1) Organizational commitment	3.74	0.95	1.00											
(2) Work engagement	5.34	1.41	0.51*	1.00										
(3) Age	45.48	9.65	0.15*	0.23*	1.00									
(4) Gender (female)	1.5	0.50	0.08*	0.07*	0.04	1.00								
(5) Tenure	18.33	10.46	0.09*	0.15*	0.76*	-0.02	1.00							
(6) Education	2.32	0.87	0.12*	0.06	-0.27*	0.08*	-0.26*	1.00						
(7) Pay standing	1.01	0.06	0.09*	0.04	0.03	-0.17*	0.09*	0.14*	1.00					
(8) Perceptions of pay basis illegitimacy	3.09	0.79	-0.25*	-0.33*	-0.07*	0.01	-0.04	0.00	0.03	1.00				
<i>Unit-level variables</i>														
(9) Job-based pay dispersion	0.06	0.04	0.02	0.01	0.07*	-0.06	0.15*	0.07*	0.02	-0.04	1.00			
(10) Average work-unit pay level	2481.8	323.15	0.23*	0.19*	0.11*	-0.19*	0.14*	0.29*	0.00	-0.09*	0.02	1.00		
(11) Work-unit size	16.93	15.78	-0.20*	-0.19*	-0.12*	0.00	-0.12*	-0.24*	0.01	0.09*	-0.02	-0.59*	1.00	
(12) Task interdependence	2.80	0.51	0.07	0.09*	-0.10*	0.10*	-0.09*	0.08*	0.02	-0.02	-0.18*	0.10*	-0.01	1.00

Note: $N = 536$. Correlations do not take into account the multilevel nature of the data and should be interpreted with caution.

* $d < 0.05$.

TABLE 2 Multilevel regression results for organizational commitment.

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Age	0.02*** (0.00)	0.02*** (0.00)	0.02*** (0.00)	0.02*** (0.00)	0.02*** (0.00)	0.02*** (0.00)
Gender (female)	0.13 (0.11)	0.12 (0.10)	0.18* (0.08)	0.17* (0.08)	0.12 (0.10)	0.12 (0.10)
Tenure	−0.01 (0.01)	−0.01 (0.01)	−0.01 (0.01)	−0.01 (0.01)	−0.01 (0.00)	−0.01 (0.00)
Education	0.05 (0.03)	0.04 ⁺ (0.02)	0.06* (0.02)	0.06** (0.02)	0.04 (0.03)	0.04 (0.03)
Pay standing	1.36*** (0.26)	1.33*** (0.23)	1.52*** (0.12)	1.54*** (0.17)	−1.59 (1.91)	1.32*** (0.24)
Average work-unit pay level	0.00*** (0.00)	0.00*** (0.00)	0.00*** (0.00)	0.00*** (0.00)	0.00*** (0.00)	0.00*** (0.00)
Work-unit size	0.00 (0.00)	0.00 (0.00)	−0.00 (0.00)	−0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
Task interdependence	0.05 (0.08)	0.06 (0.09)	0.06 (0.08)	0.06 (0.08)	0.05 (0.08)	−0.01 (0.19)
Job-based pay dispersion		1.02 (2.06)	0.37 (1.69)	0.63 (1.55)	1.10 (1.76)	0.97 (2.00)
Perceptions of pay basis illegitimacy			−0.25** (0.08)	−0.14* (0.06)		
Job-based pay dispersion × perceptions of pay basis illegitimacy				−1.90* (0.95)		
Job-based pay dispersion × pay standing					31.65* (15.53)	
Job-based pay dispersion × task interdependence						1.10 (1.87)
Constant	3.74*** (0.15)	3.66*** (0.09)	3.79*** (0.08)	3.77*** (0.08)	3.65*** (0.08)	3.65*** (0.09)
Var (organization)	0.02	0.03	0.01	0.01	0.03	0.03
Var (unit)	0.05	0.04	0.03	0.03	0.04	0.04
Var (residual)	0.75	0.75	0.73	0.73	0.75	0.75
Var (fixed factors)	0.05	0.05	0.11	0.11	0.05	0.05
R ² (MVP)	0.06	0.06	0.12	0.12	0.06	0.05

Note: $N = 536$. Robust standard errors in parentheses. R^2 (MVP) is calculated following the multilevel variance partitioning method (Nakagawa & Schielzeth, 2013). Var denotes variance.

*** $p < 0.001$. ** $p < 0.01$. * $p < 0.05$. ⁺ $p < 0.10$.

job-based pay dispersion and employee attitudes such that the relation is stronger when task interdependence is high rather than low. The interaction was not significant for organizational commitment (see Table 2, Model 6), but our results indicate that the relation between job-based pay dispersion and work engagement was moderated by task interdependence (see Table 3, Model 6 and Figure 4). Higher job-based pay dispersion was associated with higher work engagement at high ($B = 3.49$, $p < 0.01$; $CI = 1.01, 5.98$) but not low levels of task interdependence ($B = -3.04$, $p = 0.40$; $CI = -10.05, 3.98$). As job-based pay dispersion was positively and significantly related to work engagement when task interdependence was high but not when task interdependence was low, our results support Hypothesis 3 for one of our attitudinal outcomes (i.e., work engagement).

4.1 | Supplemental analyses

We conducted sensitivity analyses to assess the robustness of our results. To study the robustness of our findings for

Hypothesis 1, we examined the role of perceptions of pay basis (il) legitimacy using an alternative measure. Respondents were asked to assess the degree to which they believed their pay was based on six *legitimate* criteria (skills and abilities, experience, effectiveness, quality of work, goal achievement, and collaboration) on a 5-point Likert-type response scale ranging from “*little if at all*” (1) to “*to a great extent*” (5), allowing for “*I don't know*” responses, which were treated as missing information for analytical purposes. Thus, this measure assessed the degree of pay basis legitimacy rather than illegitimacy. Cronbach's alpha (α) was 0.88.

The obtained results were very similar to those reported previously. Specifically, according to the model including the control variables and the interaction effect between the alternative measure of perceptions of pay basis legitimacy and job-based pay dispersion, high dispersion was associated with higher commitment at high (+1 SD) ($B = 4.53$, $p < 0.001$; $CI = 2.99, 6.07$) but not low (−1 SD) levels of perceptions of pay basis legitimacy ($B = -1.56$, $p = 0.62$; $CI = -7.66, 4.54$). In contrast to the main results, however, this interaction was not statistically significant for work

TABLE 3 Multilevel regression results for work engagement.

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Age	0.04* (0.02)	0.04* (0.02)	0.04* (0.02)	0.04* (0.02)	0.04* (0.02)	0.04* (0.02)
Gender (female)	0.22 (0.17)	0.22 (0.18)	0.23 (0.15)	0.22 (0.15)	0.22 (0.18)	0.23 (0.18)
Tenure	-0.01 (0.02)	-0.01 (0.02)	-0.01 (0.01)	-0.01 (0.01)	-0.01 (0.02)	-0.01 (0.02)
Education	0.05 (0.08)	0.05 (0.07)	0.07 (0.05)	0.07 (0.05)	0.05 (0.07)	0.04 (0.07)
Pay standing	1.01* (0.43)	1.01* (0.43)	1.20*** (0.20)	1.23*** (0.20)	0.32 (2.44)	0.89+ (0.52)
Average work-unit pay level	0.00** (0.00)	0.00** (0.00)	0.00*** (0.00)	0.00*** (0.00)	0.00** (0.00)	0.00* (0.00)
Work-unit size	-0.01 (0.01)	-0.01 (0.01)	-0.01+ (0.00)	-0.01 (0.00)	-0.01 (0.01)	-0.01 (0.01)
Task interdependence	0.22 (0.14)	0.23* (0.12)	0.21 (0.13)	0.20 (0.13)	0.23+ (0.12)	-0.14 (0.12)
Job-based pay dispersion		0.51 (3.10)	-0.23 (2.38)	0.38 (2.06)	0.53 (3.11)	0.23 (2.42)
Perceptions of pay basis illegitimacy			-0.52*** (0.05)	-0.26+ (0.13)		
Job-based pay dispersion × perceptions of pay basis illegitimacy				-4.74*** (1.31)		
Job-based pay dispersion × pay standing					7.49 (27.22)	
Job-based pay dispersion × task interdependence						6.53** (2.32)
Constant	5.37*** (0.17)	5.34*** (0.11)	5.44*** (0.08)	5.39*** (0.08)	5.33*** (0.10)	5.36*** (0.12)
Var (organization)	0.00	0.00	0.00	0.00	0.00	0.00
Var (unit)	0.06	0.06	0.00	0.00	0.06	0.06
Var (residual)	1.71	1.71	1.60	1.59	1.71	1.70
Var (fixed factors)	0.21	0.21	0.39	0.41	0.21	0.22
R ² (MVP)	0.10	0.10	0.20	0.20	0.10	0.11

Note: $N = 536$. Robust standard errors in parentheses. R^2 (MVP) is calculated following the multilevel variance partitioning method (Nakagawa & Schielzeth, 2013). Var denotes variance.

*** $p < 0.001$. ** $p < 0.01$. * $p < 0.05$. + $p < 0.10$.

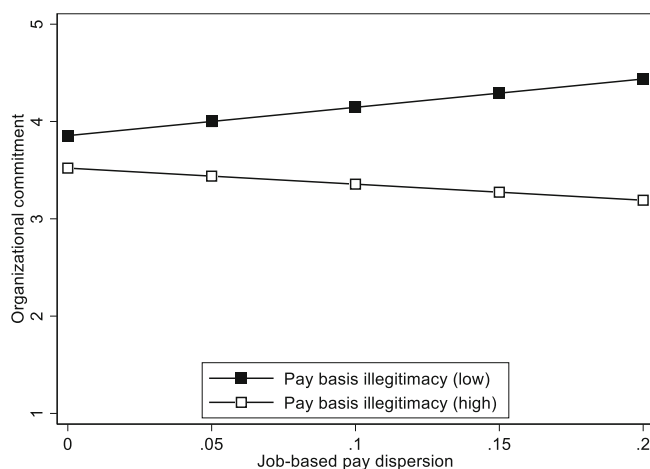


FIGURE 1 Interaction between job-based pay dispersion and perceptions of pay basis illegitimacy predicting organizational commitment (± 1.5 SD).

engagement. Thus, aligned with our primary results, the findings from these supplemental analyses support Hypothesis 1 for organizational commitment: the relation between job-based pay

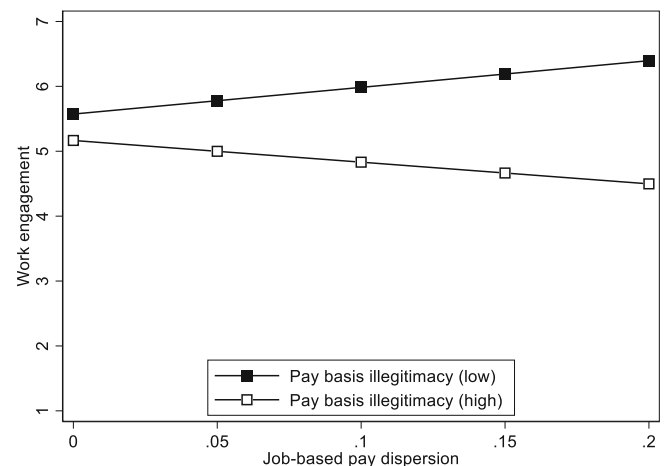


FIGURE 2 Interaction between job-based pay dispersion and perceptions of pay basis illegitimacy predicting work engagement (± 1 SD).

dispersion and organizational commitment was positive when the perceptions of pay basis legitimacy were high (but not significant when they were low).

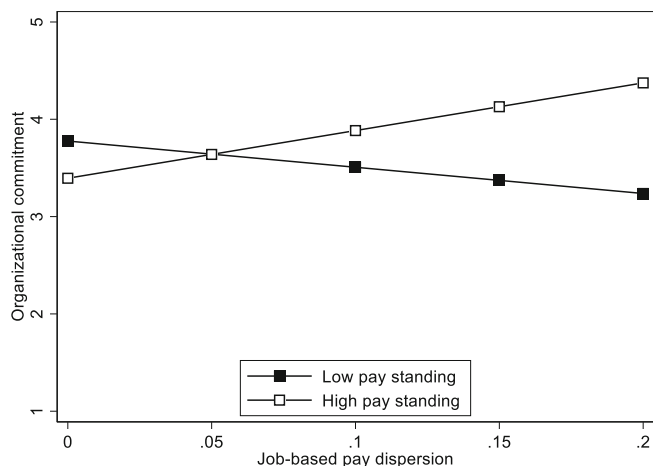


FIGURE 3 Interaction between job-based pay dispersion and pay standing predicting organizational commitment (± 1 SD).

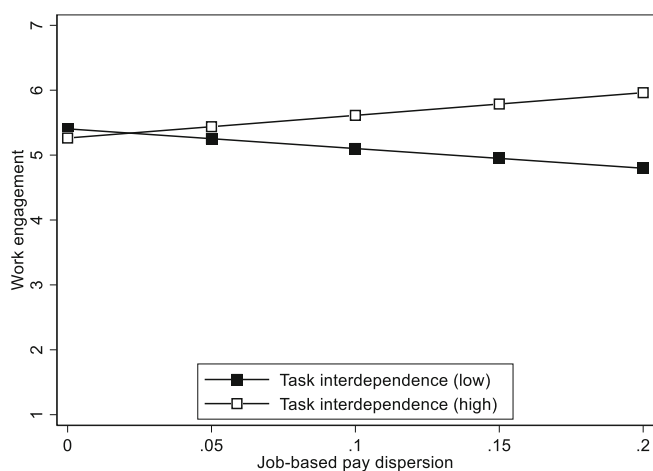


FIGURE 4 Interaction between job-based pay dispersion and task interdependence predicting work engagement (± 1 SD).

Finally, to verify that the results remain the same when very small work units are excluded (i.e., work units with fewer than five employees), we repeated all analyses without such units. Again, our results remained substantially similar. In sum, the reported results are robust under various assumptions and conditions, increasing our confidence in them.

5 | DISCUSSION

This study was designed to examine the relation between job-based pay dispersion and employee attitudes. Given that pay dispersion per se is unlikely to have functional or dysfunctional effects across levels of analysis, we investigated the influence of several contingencies in attitudinal reactions to job-based pay dispersion. Although the importance of research in this vital area was highlighted approximately two

decades ago (Gerhart & Rynes, 2003), our understanding of these dynamics remains very limited (Conroy & Gupta, 2019; Downes & Choi, 2014; Shaw, 2014; Shaw & Zhou, 2021). To our knowledge, this study is the first to examine how job-based pay dispersion relates to employee attitudes within work units with varying levels of task interdependence.

Our results support the notion that the main effects of dispersed pay structures on outcomes are likely to be close to zero. Instead, our results are aligned with research from the strategic human resource management (HRM) literature on fit and synergies (e.g., Delery & Shaw, 2001; Kepes & Delery, 2007) as well as previous research on the relation between pay dispersion and unit-level effectiveness. In particular, our results show that contingencies determine whether dispersed pay structures are associated with employee attitudes, positively or negatively. More specifically, our results indicate that pay dispersion due to job-based pay differentials among employees within a work unit is associated attitudinal reactions of employees under certain conditions, including their perceptions of pay basis (il)legitimacy, their pay standing, and the degree task interdependence.

5.1 | Functional effects of dispersed pay structures on employee attitudes

Our multilevel regression analyses suggest that job-based pay dispersion can elicit functional, positive attitudinal reactions among employees, such as organizational commitment and work engagement. Given that job-based pay dispersion is a form of vertical dispersion (Gupta et al., 2012), and social comparisons among employees within the same job (i.e., horizontal pay dispersion) are typically thought to have stronger effects on employee outcomes than comparisons across jobs (i.e., vertical pay dispersion) (Connelly et al., 2014; Werner & Mero, 1999), these findings may seem counterintuitive. However, organizations can structure their work around work units consisting of different jobs, and pay is attached to the individual jobs, leading to job-based pay dispersion within those units. This compensation strategy may be especially beneficial for efficiency-oriented organizations (Tenhiälä & Laamanen, 2018). If the overall compensation system emphasizes salient differences between the jobs within work units more than potential differences in employee performance, employee reactions should be stronger along those differences.

The results challenge the rather common view that job-based pay dispersion as a form of vertical pay dispersion should elicit dysfunctional attitudinal reactions in work units because it promotes competition, conflict, and counterproductive work behaviors. Instead, our results support the broader ideas based on explained pay dispersion theory (Shaw & Zhou, 2021), relational demography (Chattopadhyay et al., 2011; Zhang et al., 2020), and the legitimacy of status hierarchies (Halevy et al., 2011; Ronay et al., 2012). That is, when pay differences can be explained by legitimate and normatively accepted factors and, therefore, when employees believe that illegitimate pay-allocation criteria are not used in decisions about pay and promotions, the consequences of pay dispersion tend to be positive and

functional. Thus, our findings echo conclusions from the research on organizational politics that emphasizes the importance of making compensation decisions based on legitimate criteria and not political behaviors and related illegitimate factors (e.g., Ferris & Kacmar, 1992; Gupta & Jenkins, 1996; Kacmar & Carlson, 1997).

In one of the few individual-level studies that examined attitudinal reactions to pay dispersion, Trevor and Wazeter (2006) found that pay dispersion had negative consequences for those with a low pay standing and no significant effects for those with a high pay standing. Accordingly, the authors concluded that the “value of performance-driven pay dispersion must be weighed against the likely attitudinal liabilities for those low in the distribution” because such pay structures are likely to lead to negative attitudinal reactions for such employees (Trevor & Wazeter, 2006, p. 1271). Our results suggest that Trevor and Wazeter’s (2006) conclusions regarding horizontal pay dispersion cannot necessarily be generalized to other settings. Indeed, employee reactions to vertical and horizontal pay dispersion may differ substantially. For example, recent research using employer–employee matched data from Sweden has found that vertical wage dispersion suppresses cross-firm mobility because it is associated with outcomes beneficial for employees, such as attractive advancement opportunities (Kacperczyk & Balachandran, 2018). Furthermore, the vertical dispersion effect was amplified for bottom wage earners because they have the most to gain from climbing up the job ladder. In contrast, according to the study, horizontal wage dispersion increases cross-firm mobility because it is associated with harmful employee outcomes, such as inequity concerns (Kacperczyk & Balachandran, 2018). Thus, our theoretical framework and findings highlight the importance of contextualizing studies on the effects of pay dispersion and not confounding the effects of horizontal and vertical pay dispersion.

Somewhat similar to Zhang et al. (2020), we found that job-based pay dispersion was not (negatively) related to employee attitudes at the low end of the pay distribution (e.g., at the low end, the slope was negative but not statistically significant). The observed differences from other studies (e.g., Breza et al., 2018) were likely due to the division of labor and the resulting pay structure: in our study, employees were primarily paid based on a systematic job evaluation process that was transparent, and the work was interdependent to varying degrees.

Aligned with our predictions from relational demography (e.g., Zhang et al., 2020) and functional theories of hierarchy (e.g., Halevy et al., 2011, 2012; Ronay et al., 2012), we found that job-based dispersion was related to positive attitudinal reactions in settings with a high degree of task interdependence. Thus, our results support the notion that hierarchical pay structures associated with stable status differences can compensate for the dysfunctional reactions sometimes exhibited by individuals in interdependent work contexts (Beus & Whitman, 2017). Aligned with Trevor et al.’s (2012) conclusion, it might be the case that workforce interdependence per se does not moderate the relation between dispersed pay structures and attitudinal reactions in the way that conventional wisdom suggests. Hence, the common view that differential reward allocations have harmful effects, especially in interdependent work settings, does not seem to hold. Instead, it seems likely that the identifiability of employees’ contributions is the “true” underlying contingency (Shaw, 2014; Shaw & Zhou, 2021).

Rather than harming cooperation in interdependent contexts, our results support the view that dispersed pay structures within work units can foster constructive competition. Taking this argument further, competition may be beneficial when individuals are assured that everyone has an equitable chance of “winning” (i.e., constructive competition; Murayama & Elliot, 2012). In an interdependent work setting, employees rely on their coworkers to do their part to complete the overall job but also appreciate the boundaries drawn around their own job (i.e., a low level of relational uncertainty; Zhang et al., 2020). We encourage future research to further examine the validity of these and related arguments, especially since meta-analytical evidence suggest that task interdependence may have a negative effect on the relation between hierarchy and team performance (Greer et al., 2018).

While we did not expect differential mechanisms related to our attitudinal outcomes, we found some differences. On the one hand, job-based pay dispersion was consistently positively related to both organizational commitment and work engagement when perceptions of illegitimate reward allocation criteria were low. On the other hand, job-based pay dispersion was positively associated with organizational commitment for employees at the high end of the pay structure within their units. Meanwhile, when task interdependence in the employees’ own work unit was high, job-based pay dispersion was positively associated with work engagement. Thus, our two moderators, standing in the pay distribution and task interdependence were somewhat differently associated with the two employee attitudes. This finding may suggest that the effects on work engagement resemble those of intrinsic motivation (motivational effects), whereas those on organizational commitment are a reflection of a more deliberate intent to leave (sorting effects). As both motivational and sorting effects of compensation systems are important (Downes & Choi, 2014), organizations should be mindful of both mechanisms when assessing the extent to which their compensation structures have functional effects on employee attitudes.

5.2 | Limitations and directions for future research

Our results should be interpreted with the following limitations in mind. Shaw and Zhou (2021) argued that normatively accepted reasons for pay dispersion may vary between contexts and countries, affecting both the prevalence of horizontal and vertical pay dispersion and their perceived legitimacy. Nordic countries tend to have egalitarian cultures with compressed pay structures compared to those of more individualistic countries, such as the United States (Kiatpongsan & Norton, 2014). Nordic countries are also known for their high unionization level and, as a result, a strong preference for transparent job-based structures (job evaluation) and relatively low levels of pay dispersion. Thus, national culture might act as a boundary condition for the effects of job-based pay dispersion on attitudes. Hierarchy is psychologically rewarding because it validates individual beliefs in meritocracy and social mobility and is consistent with the preference for equity over equality as a fair and just reward allocation norm, particularly in Western, capitalistic societies (Halevy et al., 2011). Nevertheless, findings similar to ours were observed in a study conducted in China (Zhang et al., 2020),

known for a low level of uncertainty avoidance and a high level of power distance. Nonetheless, more research is needed across different national contexts.

Our measure of the job-based pay component at the work-unit level corresponds in principle to the idea of vertical pay dispersion (Gupta et al., 2012). Previous studies have operationalized vertical pay dispersion in different ways, ranging from differences in total pay across one or very few hierarchical levels (Bloom & Michel, 2002; pre-post promotion, DeVaro, 2006; executive ranks, Bloom & Michel, 2002; Leonard, 1990) to differences across multiple management levels (e.g., Eriksson, 1999; Siegel & Hambrick, 2005) and the entire organizational spectrum from lower level employees to top management (e.g., Brown et al., 2003; Cowherd & Levine, 1992; Ding et al., 2009). Future research should investigate whether some of the different pay comparisons associated with the distinct ranges (e.g., within a work unit or across the entire organizational hierarchy) and types of vertical pay dispersion (e.g., external, internal, and employee comparisons; Kulik & Ambrose, 1992) are more impactful than others. Equity theory suggests that the similarity of the comparison other is relevant. Thus, jobs in close proximity where coworker contributions can be easily identified (i.e., identifiability of work inputs; Shaw, 2014) are most likely more relevant for the theorized effects than jobs that are more distal to the focal employee (Werner & Mero, 1999).

Our sample consisted of blue-collar workers employed in industries subject to multiple governmental regulations (e.g., safety and health regulations). The jobs and tasks in these industries tend to be more standardized, predictable, and routine than they are in other contexts. This fact might affect the ability to generalize our results. Anderson and Brown (2010) argued that work-unit size and task complexity moderate the effect of hierarchical structures. In small groups with simple tasks, the effect should be positive, as the contributions of individual employees are more likely to be identifiable (Halevy et al., 2011). Thus, future research should investigate the generalizability of our results beyond the context of blue-collar work units.

The study design did not allow us to separate differences between unexplained and explained pay (Trevor et al., 2012). Instead, we assessed employee perceptions regarding the basis for the reward-allocation criteria. Although this might be viewed as a limitation, aligned with the views in the strategic HRM literature (e.g., the effects of HRM policies vs. practices vs. processes; Kepes & Delery, 2007), attitudes are driven more by employee perceptions, such as perceived reward-allocation criteria, than they are by the actual criteria (e.g., Greenberg, 2003). Relatedly, one may argue that most of our variables come from the same source, individual employees, and, as such, our results could be affected by common method variance. However, our pay data came from archival sources. The interactive nature of our analytical model also alleviates concerns related to common method variance (Evans, 1985; Siemsen et al., 2010). Thus, our results were robust to various methodological and statistical specifications, increasing our confidence in them.

Finally, our data were based on a cross-level research design at a single point in time. Future studies should investigate how changes in pay dispersion affect employees' reactions over time (Heath, 1999; Rynes et al., 2004). Replications and longitudinal extensions in different cultural settings and with different employee groups and different

types of pay dispersion measures should help to better explain the nuanced contingencies underlying the relations between dispersed pay structures and outcomes across levels of analysis. In addition to employee attitudes, more research is needed on how job-based pay dispersion affects employee performance (task performance, contextual performance [e.g., organizational citizenship behaviors], and counterproductive work behaviors), outcomes at the work-unit level (e.g., work-unit productivity and performance), and organizational level (firm performance). Studies with a longitudinal or panel design may also be needed to assess whether the observed effects are causal and remain stable over time.

5.3 | Conclusion

Our study indicates that the perceived (il)legitimacy of job-based pay dispersion significantly explained attitudinal reactions of employees. Job-based pay dispersion coupled with perceptions of the use of legitimate criteria and the absence of illegitimate criteria in pay decisions was associated with functional attitudinal reactions. In addition, the observed attitudinal reactions varied based on employees' internal pay standing. However, even employees with a low pay standing did not automatically react negatively. Finally, our findings suggest that dispersed pay structures in interdependent work settings do not necessarily have the commonly assumed detrimental effects. Therefore, interdependent work settings per se do not render dispersed pay structures ineffective and might even enhance their functional effects. We encourage further rigorous, nuanced explorations in the area.

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CONFLICT OF INTEREST

The authors have no conflicts of interest to declare.

DATA AVAILABILITY STATEMENT

"Author elects to not share data." The data are sensitive in nature as it contain full information on the pay structures of four companies and detailed information about employees in these organizations, including their responses. The NDAs with the companies require that we do not openly publish the data.

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ENDNOTES

¹ DEP refers to the amount of the pay dispersion that is tied to productivity-relevant employee inputs, and DUP refers to the amount that is unrelated to employee productivity (e.g., politics, discrimination, favoritism, or random decisions) (Trevor et al., 2012).

² Distributive information about an individual's merit pay was not publicly available to the employees (i.e., it was confidential). In our research context, the merit pay component was 12.5% of an employee's total pay, on average. Perhaps more importantly, the difference in the merit pay between the top and the bottom quartiles of employees was merely 3.4% within a work unit, on average, indicating a high level of horizontal pay compression, which is not surprising given the previous results (e.g., Breza et al., 2018). Even if it were transparent, such merit pay differences between employees yielding horizontal pay dispersion are not meaningful enough to be noticed by individuals; thus, they are unlikely to evoke observable attitudinal or behavioral reactions (Mitra et al., 1997; Mitra et al., 2016). Nevertheless, we also tested all our predictions using a horizontal pay dispersion measure (based on individual differences in merit pay across the work unit), but none of the effects were statistically significant.

³ Because neither of the individual simple slopes were significant at 1 SD above or below the mean, we used 1.5 SD when plotting the interaction.

⁴ All reported confidence intervals (CIs) are 95% CIs.

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