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Pay-for-performance: Behavior-based recommendations from research and practice

Barbara R. Bucklin[a], Anita Li[b], Manuel Manny Rodriguez[c], Douglas A. Johnson[b], and Lauren M. Eagle[b]

[a]The Bucklin Group Inc, Laguna Niguel, California, USA; [b]Western Michigan University, Department of Psychology, Portage, Michigan, USA; [c]Bueno Ventures, Doral, Florida, USA

ABSTRACT

The use of pay-for-performance has the potential to greatly increase the productivity of the workforce by incentivizing the act or result of performance itself rather than time spent performing. In this paper, monetary incentive approaches are examined through the lens of behavioral research and practice. Important criteria to protect both the financial health of the organization and the physical and emotional health of the workers are outlined, along with considerations for an organization to prepare for the transition to a different form of financial compensation. This paper offers best practices, as well as suggestions for future research and considerations to help overcome potential concerns from organizational and individual perspectives.

KEYWORDS

Pay-for-performance; monetary incentives; piece rate; variable pay; incentive pay

Dating back to some of their earliest works (Skinner, 1938), behavior analysts have long focused on the role of consequences in the development and maintenance of behavior. Within the context of workplace behavior, the role of financial consequences may be one of the most obvious candidates to start with if one wanted to extrapolate from laboratory findings to applied settings. Indeed, the earliest behavioral thought pieces about the workplace were quick to suggest the use of economic influence to improve productivity (Aldis, 1961; Skinner, 1953), though it was noted that financial rewards would not function as a simple instance of direct reinforcement. As Skinner (1969) explained, typical economic contingencies depend less on the delivery of the standard wage and more on a supervisor's potential threat to terminate employment and thus eliminate a needed source of income. As such, hourly wages are highly dependent on rule governance and aversive control to motivate any performance. However, by investigating alternative uses of financial compensation, such aversive control may be minimized in favor of an improved condition, one in which an employee feels as though their

CONTACT Douglas A. Johnson behavioranalyst@gmail.com Department of Psychology, Western Michigan University, P.O. Box 1295 Portage, Michigan 49081, USA

efforts matter because they are paid for their performance rather than just paid for their time. Thus, an early interest in pay-for-performance was born for behavioral theorists and practitioners, especially those interested in the workplace.

Although these early writings pointed toward revamping compensation systems in alignment with experimental research, the business community had long beaten the behaviorists to the punch. Probably the most renowned implementation of non-hourly wage systems comes from Lincoln Electric, frequently profiled for their unusual and highly successful compensation approach and one of the most famous business case studies (Koller, 2010; Rothe, 1947; Suri, 1970). Lincoln Electric is a manufacturer known for its welding equipment and has offered pay-for-performance to its factory workers for over 125 years. Just as a laboratory animal on a ratio schedule will receive more food or water only if it makes the target response more often, employees receive more pay if they produce more units (likewise, there is no hourly pay and poor products do not result in compensation). Although no income is guaranteed, Lincoln Electric still claims to have the highest-paid factory workers worldwide (Hartman, 1992; Henderson, 1985; Klein, 2012). Their piecework compensation system has resulted in highly productive employees and enabled Lincoln Electric to keep the largest market share within the global welding market (Klein, 2012; Perry, 1988). Lincoln Electric also guarantees lifetime employment and has one of the lowest turnover rates within U.S. manufacturing.

Another early business example of pay-for-performance could be seen through the work of Frederick Winslow Taylor, a notable contributor to the development of such systems (Dickinson, 2000). Taylor's contribution to pay-for-performance systems stems from his use of time studies to identify output standards and individualized incentive plans (Taylor, 1911). Taylor implemented differential piece-rate incentives, where those who did not meet standards were paid a lower rate than those who met or exceeded standards. The latter were rewarded beyond the base pay, which is the fixed base rate of pay for a job such as hourly or salary compensation (Peach & Wren, 1992). As a result of Taylor's contribution, many incentive plan derivatives emerged during this era. These are primarily two basic types: (1) time-wages, in which a monetary payout corresponded to a standard unit of working time, and (2) wages saved, in which incentives were based on reduced organizational costs.

Since behavioral applications in alignment with behavioral theory suggest that pay-for-performance systems can enhance employee performance, it would be instructive to provide an overview of the work done within organizational behavior management (OBM) on the topic of pay-for-performance and the use of monetary incentives. This paper will begin by surveying different compensation options (and outlined in Table 1) and the relevant research.

Table 1. Benefits and challenges of different pay-for-performance systems.

Fixed Compensation		
	For the organization, this system …	For the employee, this system …
Benefits	• Makes it easy to calculate payroll expenses • Is simple to design and administer	• Provides consistent compensation for financial certainty • Pays poor performers the same as good performers (i.e., benefits poor performers)
Challenges	• Can produce employees who only produce the minimum required to earn their fixed pay • Does not result in optimal performance results	• Is unfair to good performers • Decreases motivation to go beyond bare minimum expectations
Commissions/Individual Piece-rate Pay		
	For the organization, this system …	For the employee, this system …
Benefits	• Can produce significant improvements with as little as 3% incentive pay • Uses pay plans that are simple to develop and maintain • Can yield higher performance than more complex variable or fixed pay systems	• Usually delivers partial fixed wage for financial certainty • Provides an opportunity to earn above fixed wage, under the employee's control • Can increase motivation and individual satisfaction
Challenges	• Is not adjusted for overall performance, and is shown to only produce an increase in a single dimension • Can produce a decline in other untargeted aspects of performance • Can result in a competitive culture, leading to higher turnover rates	• Creates individual employees focused only on their own performance and decreases teamwork • Produces a competitive culture that can lead to employee dissatisfaction
Accelerated Incentive Pay		
	For the organization, this system …	For the employee, this system …
Benefits	• Produces higher performance than fixed wage systems	• Can pay significantly more as performance increases • Provides an opportunity to earn above fixed wage, under the employee's control
Challenges	• Is not more effective than linear pay • More challenging to design and administer than individual piece-rate pay systems	• May lead to fatigue or safety issues as employees accelerate their performance
Small Group Incentives When Equally Divided		
	For the organization, this system …	For the employee, this system
Benefits	• Results in sustained levels of productivity, often equal to or better than individual incentives in groups with equal performers	• Results in high productivity and satisfaction when the group members perform at equal levels
Challenges	• Can hurt productivity and morale of high performers	• May reduce performance in high performers • Can produce stress; some employees report that they do not want to let down their group
Goal Sharing, Gain Sharing, Profit Sharing		
	For the organization, these systems …	For the employee, these systems …

(*Continued*)

Table 1. (Continued).

Fixed Compensation		
	For the organization, this system …	For the employee, this system …
Benefits	• If arranged to do so, can align employee and department goals with organizational goals and strategies • Can increase productivity • May create employee stakeholders who are committed to the organization's success because a percentage of their pay depends on that success • (Profit sharing) Can be affordable because it is tied to organizational profit with pay outs that come directly from the profit	• May create a sense of ownership in the company because employees share in its success • Can result in significant pay outs for individual employees • Pay out higher percentages to higher paid employees (a benefit to those with higher fixed pay)
Challenges	• Do not focus on an individual's performance or contribution; they pay everyone similarly regardless of their contribution • (Goal sharing) Is not indexed to the company's profits, may payout large sums during unprofitable time periods • (Gain sharing) Requires increasing productivity year over year, which can be difficult to maintain	• Are unpredictable in their pay outs; employees cannot control the outcome • Are not under the control of the employee because they are based on organization-wide results • Payout infrequently, typically annually • May be perceived as unfair to those with lower fixed wages when payout is capped at a percentage of each individual's fixed wage • May not include all employees for eligibility (e.g., certain departments, or hourly or part time employees may be excluded)

Types of pay-for-performance systems

Commissions/individual piece-rate pay

This pay system is based only on an individual's specific behaviors or accomplishments. Typically, this model is only tied to one measure, such as sales numbers or profit earned by an individual; it is not adjusted for overall organizational performance. Commission or piece-rate can be based entirely on performance pay or combined with fixed compensation (i.e., a percentage of the wage is fixed, and a portion is based on individual performance). Research suggests that as little as 3% of total wages in variable piece-rate pay may be enough to produce significant performance improvements over fixed compensation such as hourly pay (e.g., Dickinson & Gillette, 1993; Frisch & Dickinson, 1990; LaMere et al., 1996; Matthews & Dickinson, 2000). These simple pay plans can usually yield higher performance than either complex variable pay plans or fixed pay plans (Abernathy, 2011; Bucklin & Dickinson, 2001; Slowiak et al., 2011).

Despite these advantages, piece-rate pay systems can create employee animosity, affecting emotional health (Davis, 2016). Piece-rate pay systems often generate competition between employees who are more likely to focus on their own performance and monetary gain, and less likely to focus on the department or organizational performance. This pay system can discourage teamwork, leaving employees feeling unsupported in their work. Unsupportive work climates can lead to employee dissatisfaction and high turnover rates (Komaki & Minnich, 2016). Unsupportive work cultures that embrace individualism also affect risk-taking (Deng et al., 2019). As piece-rate pay incentivizes high production, increased speed and pace of employee activity can ultimately lead to errors and negative customer outcomes (Binder, 2016). Additionally, occupational health may be compromised with increased job injury and accident risks (Davis, 2016). These systems can also be detrimental to organizations when they generate large payouts at times when the company is not profitable.

Accelerated incentive pay

In an accelerated pay-out system, the per-piece incentive increases as performance increases. Dickinson (2005) describes this as, "the more a performer completes, the more each part is worth" (p. 20). The justification for paying employees exponentially is to compensate workers at greater production levels, which becomes increasingly difficult to achieve. In theory, this would work to incentivize sustained high levels of productivity. Results from two laboratory studies (Oah & Dickinson, 1992; Smoot & Duncan, 1997) indicate that accelerated incentive pay is no more effective than linear pay, such as

a piece-rate pay system with a consistent payout for each work output produced. Participants working under two conditions (accelerated and linear) performed comparably despite the fact that those participants earning accelerated payouts made significantly more money than those earning linear payouts. Although not typically measured in such studies, it would be worthwhile to also measure the levels of stress evoked by such systems when evaluating their merit.

Small group incentives, equally divided

In industries where group work is required, the above pay systems are not appropriate. Instead, organizations may utilize an incentive system based on performance tied to a group output or operational process. However, increasing group members diminishes the individual worker's control of their wages (Honeywell et al., 1997), thus the justification for a small group composition. Incentives delivered equally to members of small groups, with two to 12 employees, show relatively high-performance levels that are often comparable to, and in some cases exceed, individual monetary incentives (Honeywell et al., 1997; Honeywell-Johnson et al., 2002; McGee et al., 2006; Stolovitch et al., 2002). Research indicates this system is most effective when all employees within the group perform at equal levels. When there are differences, high performers tend to perform worse under small group incentives than they perform under individual monetary incentives, and low performers report stress caused by fear of letting down their group (McGee et al., 2006; Thurkow et al., 2000).

Goal sharing, gain sharing, and profit sharing

These organization-wide variable-pay systems are based on achieving annual organizational goals (goal sharing), organizational productivity over the previous year (gain sharing), or pre-defined annual profit levels (profit sharing). In most cases, the payout is capped at a percentage of an individual's salary or fixed wage or based on employees' levels within the organization (Department of Labor, 2020). The organization may also structure the payout to come from a bonus pool (Benson & Sajjadiani, 2017) where payouts may occur every fiscal quarter or annually. These systems appear to have mixed effectiveness. Some (Kruse, 1993; Osterman, 1994) have indicated these organization-wide incentive systems can enhance employee performance, especially when used in conjunction with other practices to improve performance. On the other hand, these systems have also been criticized for being largely ineffective (Benson & Sajjadiani, 2017). This is likely due to the variability in design and implementation by the organization. Another factor to consider is the payout's temporal remoteness to actual employee behaviors, resulting in a diluted incentive effect or even no effect on employee performance. Another disadvantage is that goal

sharing is not indexed to the company's profit, unless profit is an explicit goal within the system (Abernathy, 2011). Due to the lack of laboratory research that can be conducted with this arrangement, the majority of research conducted on these pay systems are based on pre- and post-implementation and survey report, and thus limited in determining causality.

Practitioner innovations

Although behavioral consultants have long worked on compensation systems (Abernathy, 1990, 1996, 2014a), little has been done to demonstrate the effectiveness of their work in a scientific fashion (perhaps owing to an ironic lack of incentives for consultants to publish their work in peer-reviewed scholarly journals). Nonetheless, such practitioner efforts align well with OBM initiatives in general and help illustrate a behavior analytic approach to financial compensation, and therefore are worth an extended consideration. Abernathy et al. (1982) arguably solidified initial interest in pay-for-performance in OBM with their description of incentive pay systems in Virginia National Bank and Union National Bank of Little Rock, Arkansas. When the bank employees were introduced to these conditions, they increased production from just over 1,000 checks per hour to 3,500 per hour at Union National Bank (Dierks & McNally, 1987) and from 1,465 to 2,250 checks per hour at Virginia National Bank (Abernathy et al., 1982). As summarized by Duncan and Smoot (2001), four characteristics of these systems appear critical from a behavior analytic perspective: (1) a precise definition of performance, (2) frequent measures of performance, (3) specific and timely feedback based on those measures, and (4) a clear relationship between performance and pay. One example of a pay for performance system that integrates such characteristics is Abernathy (1996)'s Total Performance System (TPS). TPS integrates balanced scorecards, a profit-indexed pay structure, and performance management to mitigate the challenges of the systems described previously. The benefits and challenges of the TPS approach are summarized in Table 2.

Balanced performance scorecards

A scorecard is a performance improvement tool that aims to align employee performance goals and organizational goals and consists of multiple performance measures related to the individual, team, and department responsibilities (Abernathy, 1996; 2014a). Well-designed scorecards used across the organization, department, and individual levels are necessary and can facilitate cooperation, provide information to management about trends in performance, and foster discussions about improving performance over time (Abernathy, 1996 2014a). A balanced scorecard integrates quantitative goals from multiple perspectives of an organization. By incorporating performance goals on an individual, team, and organizational level, this can address the *one-*

Table 2. Benefits and challenges of the total performance system.

	For the organization, this system …	For the employee, this system …
Benefits	• Is tied to organizational strategies and balanced across more than one important variable for the individual role and organization • Does not risk one performance measurement dimension over others such as: productivity, quality, cost savings, sales/revenue • Uses a payout formula that considers both organization's profit and individual's performance (eliminates problem of paying high wages when organization experiences cash flow or profitability problems)	• Sets expectations about accomplishments (per balanced scorecard measures) and ties feedback and monetary consequences to meeting those expectations • Eliminates the 'fairness' concern with fixed wages that occurs when top performers are paid the same as low performers
Challenges	• Can be time consuming to implement • Can pose a challenge with understanding the organization as a system and balancing weights across all organizational performance measures • May result in complaints and perceptions of unfairness regarding measures and weights selected, especially early in its implementation • May produce fear in some employees about being measured and held accountable to their performance measures	• Can be described as unfair; self-monitoring of performance measures may help • May not be consistent when there is variability in an individual's job role

dimensional concern of pay for performance systems. At all three levels, scorecards typically include measures and provide performance feedback across Key Performance Indicator (KPI) dimensions to balance short-term and long-term goals. KPI dimensions could be sales and revenue, profit, expenses, cash flow, regulatory compliance, productivity, quality, customer service, and employee satisfaction.

These scorecards are balanced because weights are assigned to each measure based on its value to the organization, value to the customer, ease of improvement/control the performer has over the measure, and urgency to improve. The sum of the weights at each level equal 100%. Individuals earn a weighted score from 0% up to 100%, upon which their performance pay is based. The scorecard needs to be well understood for the tool and process to be managed properly. Providing definitions of each component of the scorecard has been viewed as helpful by the authors' clients, and illustrating the components as well, as shown in Figure 1. The following are definitions for the scorecard elements as depicted in Figure 1.

1. KPI dimension. The Key Performance Indicator (KPI) aligned across the organization.
2. Measure. A summary of what is measured.
3. Definition. A detailed description of each measure and how it is calculated or collected over the month or quarter; this makes each measure and data calculation clear to the performer and anyone viewing the scorecard.

1	2	3	4									5	6	7	8
KPI Dimension	Measure	Definition	PERFORMANCE SCALE									Raw Score	Score	Weight	Weighted Score
			1	2	3	4	5	6	7	8	9	10				
Sales	Booked revenue	Revenue booked monthly, averaged over the quarter	$583,333	$597,916	$612,500	$627,083	$641,666	$670,833	$700,000	$729,166	$758,333	$816,666	$612,500	3	10%	0.30
Expenses	Quarterly costs per case	Monthly departmental facilities allocation per case managed, reported as quarterly average	$750	$700	$600	$550	$500	$480	$475	$450	$425	$400	$450	8	10%	0.80
Productivity	Time spent per case	Hours spent by Case Managers per case, averaged across cases	25		24		22		21			20	22	5	10%	0.50
Productivity	Case load	Monthly case load (number of cases) per Case Manager, averaged over the quarter	5				6					7	7	10	10%	1.00
Quality Assurance	All mistakes identified internally	Percentage of cases returned to Case Manager for error correction over the quarter	15%	14%	13%	12%	10%	8%	6%	4%	2%	0%	12%	4	20%	0.80
Quality Assurance	Impactful mistakes identified internally	Number of dollar-costing errors identified by QA during the quarter	9	8	7	6	5	4	3	2	1	0	4	6	15%	0.90
Quality Assurance	Mistakes identified externally, by clients	Number of errors identified by clients that resulted in monetary loss	6		5		4	3	2	1		0	2	7	15%	1.05
Customer Satisfaction	Customers satisfied with service	External quarterly customer satisfaction survey results, averaged over the quarter	80%	85%	90%	92%	95%	96%	97%	98%	99%	100%	98%	8	7%	0.56
Regulatory Compliance	Internal Survey	Internal quarterly survey as percent marked "Consistently" across all three metrics, subtracting the N/A answers	55%	58%	60%	65%	70%	75%	80%	85%	90%	100%	58%	2	3%	0.06
			THRESHOLD				TARGET					STRETCH			100%	5.97

Figure 1. Total performance system balanced scorecard example.

4. Performance scale. A range from 1 to 10, with: 1 = the minimal threshold of acceptable performance; 5 = the target or goal that an average performer should achieve; 10 = the stretch goal or maximum performance.
5. Raw score. For each measure, this is the actual performance achieved during a month or quarter.
6. Score. For each measure, this is the performance scale number corresponding to the raw score. The number is multiplied by the weight to determine the weighted score.
7. Weight. This number is assigned to the measure based on its value to the organization, value to the customer, ease of improvement/control the performer has over the measure, and urgency to improve. The sum of the weights = 100%.
8. Weighted score. For each measure, the score (corresponding to the performance scale) is multiplied by the weight. The sum of the weighted score for each measure = the overall score for that individual or department. The overall weighted score ranges from 0 to 10.

Balanced scorecards encompass several elements shown in OBM research to improve performance. For example, under antecedent control, they provide explicit metrics to employees to set expectations of performance, as well as provide feedback after performance, which can function as behavioral consequences (Aljadeff-Abergel et al., 2017; Daniels & Bailey, 2014; Johnson, 2013). Moreover, the monetary incentives linked to scorecard feedback may further strengthen balanced scorecards as useful tools for improving performance. Research has suggested that evaluative feedback combined with incentives may be more effective than either alone (Bucklin et al., 2003; Goomas & Ludwig, 2007; Johnson et al., 2008).

Profit indexed performance pay

One concern of performance pay is that the employee payouts are not tied to the profitability of an organization. Abernathy (2011) proposes using an organizational multiplier, a complex formula that indicates an organization's profitability to guide pay for performance systems. In order to determine what value to use for the organizational multiplier, the organization must first determine its threshold amount to ensure the profitability of the organization. Then the organization must determine a percentage of the profit to share with employees and the exposure amount. In order to determine the organizational multiplier, the exposure is divided by the percentage of the profit and then added to the threshold amount. This value is set at 1. Typically, organizational multipliers range in value from 0 to 3. To create the organizational multiplier scale, divide the exposure by the percentage of profit times the desired multiplier scale value (e.g., 2 or 3) before adding the threshold amount. If the company is not profitable, then there are no

payouts beyond an employee's base pay regardless of individual performance scores. If the company achieves its maximum profitability, employees can potentially earn up to three times the organization's established percent of base pay. By incorporating the organizational multiplier in a formula called Profit-Indexed Pay (Abernathy, 1996, 2011, 2014a), the financial health of the organization is reflected in the payout. The complete Profit-Indexed Pay formula comprises the multiplier of an employee's quarterly salary or base pay, a basis percentage set by the organization, the organizational multiplier, and the individual scorecard performance, all multiplied together which equals performance pay. Although the Profit-Indexed Pay formula is straightforward and only involves four metrics multiplied together, determining the organizational multiplier scale is complex and time-consuming. Unfortunately, the complexity of this formula can leave some organizations hesitant to use it. A simpler adaptation to the original formula may be multiplying the quarterly salary or base pay, times a percentage of profit, times the individual scorecard performance, which equals performance pay. This adapted profit-indexed performance pay is a simple *profit-sharing* approach to establish a static budget available for individual payouts each year, quarter, or month. For example, if payouts happen quarterly and the organizational profit is $25,000 in a quarter, that is the amount available for pay-for-performance across the organization in the following quarter. This solution is transparent to employees with the ability for the organization's leaders to define what will be available as pay-for-performance based on the individual employee's balanced scorecard result.

Performance management

The performance management element of the Total Performance System provides a focus on data to evaluate performance, troubleshoot problem areas, and implement solutions toward maximizing performance. OBM practitioners engage clients to use performance management techniques such as the ABC analysis (Braksick, 2007; Daniels & Bailey, 2014), diagnostic tools such as Austin's (2000) Performance Diagnostic Checklist (Gravina et al., 2021), and Mager and Pipe's (1970) problem solving questions. These techniques, coupled with direct observations, data gathering and analysis, and collaboration with organizational management on identifying solutions, become a foundational element of performance management. During implementation, there is a heavy focus on individual, group, and organization-wide performance feedback. Abernathy (1996; 2011, p. 2014) emphasizes a rich feedback loop to ensure the success of other elements of the Total Performance System.

Little empirical research has validated the Total Performance System in its entirety as a result of the multilevel components and complexity. However, components such as scorecards and performance management have had successful empirical demonstrations. In a controlled field study, LaMere

et al. (1996) implemented a pay system that closely resembled the Total Performance System. The organization was a waste disposal firm that employed 22 roll-off truck drivers. When given the opportunity to earn 3%, 6%, or 9% of their total wages in incentive pay, drivers' performance across several measures immediately increased. The increase averaged approximately 20% over baseline, for 28 weeks for the group with the longest intervention in the study. While the researchers referred to this as a piece-rate pay system, it had many of the characteristics of a multidimensional pay system, such as: (1) several performance measures that were assigned point values, and taken together comprised the primary performance measure – percentage of jobs completed in less time than baseline; (2) performance management used in the form of feedback based on measures, and incentive pay delivered weekly; and (3) incentive payout values derived from projected labor-cost savings, which made the program affordable to the organization.

In recent applied studies in health and human service settings, researchers implemented balanced scorecards across multiple performance dimensions, either alone (Griffin et al., 2019), or as part of a treatment package along with training, coaching, and publicly posted feedback (Szabo et al., 2012). Both studies used multiple baseline designs and showed increased staff performance for the intervention period of up to nine weeks and 16 weeks, respectively, at a low cost to the organizations. Additional empirical research would be beneficial as organizations, such as healthcare settings, are increasingly interested in seeing evidence-based approaches for improving performance (Rosenthal & Dudley, 2007).

Parallels with research outside of organizational behavior management

Although the current paper is focused on behavior analytic innovations with monetary incentive systems, it would be remiss if non-behavioral research was not at least briefly considered. Even if explanations about data are steeped in mentalistic terms, if performance data exists it should not be ignored simply because it was generated by someone from a different theoretical paradigm (after all, data are data). Overall, this research aligns well with behavioral research. Two meta-analyses found positive overall effect sizes for individual monetary incentives when analyzing 146 (Garbers & Konradt, 2014) and 7,987 (Kim et al., 2021) studies. Kim et al. (2021) conducted a meta-analysis to examine the relationship between incentives and overall performance, for which they found a positive effect size ($\delta = .52$). Further, to follow up and extend previous meta-analyses with conflicting results regarding the impact of monetary incentives on performance in interesting tasks (Jenkins et al., 1998; Weibel et al., 2010), they found a positive incentive–performance relationship in both interesting ($\delta = +.58$) and non-interesting tasks ($\delta = +.52$). These findings were consistent across moderators such as task intensity, different

types of performance, and work autonomy. Furthermore, these findings were contrary to often-stated claims that incentives have a negative effective on interesting tasks and thus undermine intrinsic motivation (Deci, 1972; Deci et al., 2017; Pink, 2009). In fact, research suggests monetary rewards improve overall motivation regardless of intrinsic motivation and that pay-for-performance can sustain improvement even after removal (Benzer et al., 2013; Hendijani et al., 2016).

Garbers and Konradt (2014) examined effects of individual and team-based incentives on performance and found a positive overall effect size (δ = +.32). In their analysis of moderators, they found larger effect sizes for field studies (δ = +.34) than for laboratory studies (δ = +.29) and smaller effect sizes for less-complex tasks (δ = +.19) than other types of tasks. Similar to our description earlier in this paper of small group incentives, this meta-analysis found consistently positive incentive-performance relationships for team-based incentives, which were comparable to the results of individual incentives, and further found that effect size decreased as the number of team members increased.

Even though the explanatory mechanisms vary, the basic conclusion reached across disciplines is the same: namely that monetary incentives can be successful, when implemented carefully with thoughtful design. Of course, that last added qualification is quite vital and highlights the importance of reviewing the literature for caveats in implementation (to be discussed shortly). For anyone interested in a particular topic within monetary incentive approaches (e.g., gainsharing), they would be well advised to consult the vast research literature available.

Incentive systems and "the greater promise"

OBM has long been concerned with using our interventions (including those with monetary incentive components) for the good of the worker first and foremost. In what is likely the first full OBM article ever published, Aldis (1961) considered how basic experimental research might inform our incentive systems (e.g., greater immediacy, piece-rate, etc.) to increase productivity. Nonetheless, he concluded his article by noting that the "greater promise is that such experiments may lead to happier workers as well." (p. 63). Throughout his writings, Abernathy saw that the true potential of pay-for-performance was to ensure fairness for the workers and to improve the human condition in general (Abernathy, 2014b). Our discipline should not simply be a tool to help corporations make more money, but rather an approach to improve the lives of people while at work.

Without careful thought and attention, application of our science could be to the detriment of workers. In laboratory research, we can arrange conditions such that the animal will behave in suboptimal ways, especially as deprivation levels for the animal increases, even to the point that the energy expended to get a food reinforcer exceeds the energy that the food provides

(Christopher, 1988; Zentall, 2014). Skinner (1953) once pointed out that we can get a pigeon to respond as fast as five times per second and to maintain that rate for hours. It is not difficult to imagine how such arrangements could be used for the exploitation and ill health of workers, especially among the most vulnerable or deprived members of society. In laboratory settings, any potential dangers to the health of the experimental animal are mitigated, for example, by careful maintenance of the animal body weight so that any losses are offset with additional feed away from the experimental chamber (Ferster & Skinner, 1957). No such provision is inherently provided for the care of people when they are overworked by their employers. Therefore, any OBM professional must be mindful of ethical considerations when advocating for the redesign of monetary systems.

Returning to our earlier example of Lincoln Electric's pure incentive pay system, even though the company may boast of low turnover rates, that outcome may obscure some negative aspects of their approach. With the exception of job-related illnesses or injuries, Lincoln Electric offers no paid holidays or sick leave (Klein, 2012), which induces many employees to work while struggling with illnesses (Hartman, 1992). If aging employees are unable to work as fast, then they simply earn less. In short, there is no safety net at a company like Lincoln Electric, for both good and bad. It is a high-pressure work environment that sees 20–50% of new hires quitting within 3 months (Hodgetts, 1997). The overall turnover rate remains positive because employees who make it past the first 90 days tend to become lifelong productive employees and hiring is done infrequently. Such outcomes work well for a single company but could be problematic for the overall employment culture if implemented at a larger scale.

Although our work needs to be financially feasible for the organization, it is important to not become preoccupied with the measure of money alone (or any measure that indirectly stands in for money, such as productivity). This is true of any work within OBM, even if the issue is more salient when the topic involves monetary incentives. Within the context of incentive pay, Davis and Hoyt (2020) found that piece rate pay was associated with negative effects on worker health, with greater risks found among women, minorities, and low-income workers. Johansson et al. (2010) reported that piece rate pay was correlated with risk taking and mistakes. However, they noted that they could not conclusively determine that such monetary incentives will always produce negative side effects. Instead, they suggested that the appropriate answer about the impact of pay-for-performance is, "it depends on." In other words, the details of the implementation are critically important to the success or failure of any incentive system.

For example, Oxenbridge and Moensted (2011) studied room attendants who were paid by piece-rate and found that the payment method increased the speed at which employees worked. Unfortunately, it also led to an observed increase in employees working unsafely and routinely exposing themselves to

greater injuries. The work setting in this study only measured and rewarded the completion of clean rooms, with little training or emphasis on safety. From a behavioral perspective, these risky and undesirable outcomes should not be surprising. As the old adage goes, you get what you pay for. If you only pay for increased productivity, then you will get all forms of increased productivity, including the unsafe forms (or perhaps exclusively the unsafe forms, if unsafe performance is easier or less time consuming). If one wants to improve both productivity and safety, then measures and consequences need to exist for both productivity and safety. If other measures matter, such as quality, timeliness, teamwork, or creativity, then those measures need to be reflected as well. Evaluating performance via a single metric creates the risk of unmeasured performance worsening for other criteria. The net effect of an intervention may depend upon a consideration of all these systemic factors.

A balanced approach with pay-for-performance

We must design our incentive systems holistically to ensure fair working conditions that are optimal from the perspective of both the employer and employee. Failing to address this leaves us open to criticisms of being anti-labor or misunderstanding what really motivates employees. One of the advantages of a performance scorecard is that several measures can be used to balance different needs, making sure that employees are rewarded not just for working harder, but also working in alignment with safety, quality, or other standards. Incentives can be integrated in coordination with other safety and total health initiatives to ensure the well-being of employees (Ludwig & Laske, 2021; Olson et al., in press). Incentive systems can have criteria in place for quality. Finally, we can involve employees in the selection of measures and design of incentive systems to promote satisfaction and allow transparency about the structure and reasoning for incentive measures. Research has suggested that workers will perform better when they help design an incentive system, as compared with an identical incentive systems designed without employee input (Caza et al., 2015; Cooper et al., 1992). When unions or employees in general are involved in the design of reward systems, workers show improved satisfaction, greater trust in management, and a greater tendency to remain with the organization (Jenkins & Lawler, 1981; Schwarz, 1989).

Therefore, a balanced approach suggests that monetary incentives should be implemented as part of broader supportive system, and not as a cure-all single component. Compensation metrics must take into account issues such as quality, safety, health, and satisfaction through a cooperative framework. Part of Lincoln Electric's success with incentive pay comes from the supportive elements such as profit sharing, job security, and employee input on managerial decision making. During a tour of Lincoln Electric, union executives from other companies had difficulty finding a need for a union at the manufacturer

(which has never had a union) and noted that most of the Lincoln employees were already getting what they had been fighting for at their respective unions. However, it is rare that corporations will put forward such a comprehensive approach, or as one of the union leaders put it, "I'm not worried that unions are going to become irrelevant because most of you are too dumb to run your companies this way!" (Solman, 2011).

Although the focus of this paper has been on economic influences, it would be negligent if the possibility of non-monetary incentives was not acknowledged, especially when monetary incentives are not feasible. For example, feedback, praise, recognition, and celebrations have also been used successfully to drive performance (Daniels & Bailey, 2014; Johnson, 2013). The key variable is to not be wholly dependent on hourly wages as the only source of motivation and acknowledgment for workers. Mixed models are also possible, such as including an hourly base pay that could ensure financial security for employees, but with additional monetary incentives to promote discretionary effort and recognition to those who do more than the minimum. Regardless of whether incentives are to be implemented as supplemental reward or as part of a complete pay-for-performance system, implementation should be done with a careful consideration of the necessary supporting factors.

Making sure that the organization is prepared for a change in compensation practices

Taking into consideration everything discussed in this paper, as well as recommendations by pay-for-performance experts (Abernathy, 2014a; Daniels & Bailey, 2014; Garbers & Konradt, 2014), effective performance-based pay at the individual and organizational level should:

- Be structured on company values and strategic objectives
- Be agile to adapt to changing business needs
- Consider both the organization's profit as well as the individual's performance
- Be focused on employee contributions and used to maintain or increase performance
- Be transparent: scorecards, measures, and results are shared to set expectations and are aligned with feedback and incentives
- Be contingent on an employee's own performance
- Measure performance within the performers' control, and/or obstacles to performance be within managers' control to remove in support of the performers
- Be based on clearly specified behaviors or accomplishments

- Be certain, ethical, and fair (i.e., if the performance occurs, the individual will always receive the pay)
- Be paid as soon after the performance as possible, or at least linked with frequent feedback
- Be based on measures agreed upon by both the employee and supervisor
- Be designed to avoid ethical concerns or potential discomfort expressed by employees about working under a pay-for-performance system

Pay-for-performance readiness factors

Based on our experience, if an organization is not ready, the system will be ineffective at best and detrimental at worst. Prior to implementing a pay-for-performance system, we recommend the conditions outlined next to avoid potential organizational and individual challenges or ethical dilemmas that can result from pay-for-performance systems.

Executive and management readiness

Executive and senior leaders need to spend time identifying organizational-level results aligned with their business strategies. This will take time, energy, and oversight from the start. It is not only important for management to use scorecards as tools to discuss and provide consequences for department and individual performance; they must *own* the scorecards, meaning the scorecards are used by the employee to self-manage their own performance, raise issues, and hold themselves accountable to their performance. The process of managing performance and pay for performance will not be successful unless management is committed to this system as a new way to manage performance across all levels of their organization. Sharing return-on-investment data helps executive leaders *buy in* to pay-for-performance systems.

Manager and supervisor buy-in is also crucial. For many organizations, this type of system changes the behaviors required by managers and supervisors, which may be time-consuming and discouraging at first. It is up to executive leaders to create and deliver positive consequences for their managers and supervisors, contingent on engaging in those new behaviors. This is especially true at the beginning when requirements change, more work is involved, and pay is not yet attached to the scorecard results (i.e., design, development, and baseline phases). As with any change initiative, over time managers and supervisors will experience the benefits (i.e., natural positive consequences) of their scorecard-related management activities.

Participant readiness

Employees may resist working under a pay-for-performance system for a number of reasons, and therefore, it is important to design a fair and ethical system, obtain participant collaboration and buy-in, and clearly communicate all features of the system prior to implementation. These considerations are described next, along with techniques to ensure participants are prepared to work under such a system.

Fair and ethical system design

To ensure fairness and compliance, compensation systems must adhere to local and federal Human Resource (HR) regulations. As an OBM consultant or practitioner, it is important to understand compensation laws for the organization's location (e.g., see https://www.dol.gov/general/aboutdol/majorlaws for a summary of the major laws of the U.S. Department of Labor). For new employees hired under an existing pay-for-performance system, clearly communicate the performance measures and pay contingencies to avoid surprises and adhere to HR regulations.

In addition to fearing the unknown, participants may worry that these systems are management's efforts to get more work for less pay. O'Brien (1990) suggested data-driven collaboration between labor and management to help management be less punitive and more reinforcing with OBM solutions such as pay-for-performance. Systems designed to benefit both the organization as well as the employee, with input from all stakeholders including participants or their representatives (e.g., unions), can result in a positive, ethical work environment (O'Brien, 1990).

Communication

Once the system is designed and ready to be implemented, it is important to communicate to participants how the variable pay system follows HR regulations, benefits the employees as well as the organization, and is fair and attainable for all participants. As mentioned above, participants may fear punitive consequences associated with clear behavioral measures. To assuage these concerns, Warman et al. (2020) conducted multiple informational sessions and private meetings with participants in a health and human service setting just prior to pay-for-performance system implementation. OBM consultants must partner with participants, including management, to identify and agree upon measures, clarify what those measures will and will not be used for, and to ensure ethical practices are followed (Abernathy, 1996). As noted by Warman et al. (2020), due to the limited prevalence of pay-for-performance systems, OBM consultants must work with the organization's management to communicate expectations, explain new pay contingencies and formulas, and verify participants' understanding. This communication is often delivered during training sessions or performance appraisals.

Performance measures/data collection systems

For scorecards to function most effectively, the organization must have IT systems in place to collect data and populate scorecards. When scorecards rely on too much manual data collection and analysis, they become cumbersome and are therefore abandoned. The IT system is typically purchased or created during the pay-for-performance system design.

The organization should have a system for sharing scorecard results "at a glance." This can be integrated within the IT data collection system. The more frequently and easily employees and their managers or supervisors can view current scorecard data, the more effective the program will be. The system will not work if delays are long between the behavior and when employees see their scores and/or earn payouts. With scorecards being visible and shared such as using an online database, employees should immediately see scores that bridge the gap between behavior and payout.

Even with the most robust data collection systems, managers need time allocated to complete or review (in the case of automated scorecards) their department and employees' weekly, monthly, and/or quarterly scorecards, and provide feedback to their employees based on results. When adequate time is not allocated, competing work tasks may take precedence, resulting in an improperly implemented or abandoned system.

Program design and implementation resources

The following personnel, time, and financial resources are crucial for designing and implementing successful pay-for-performance systems.

Program champion

With the most successful pay-for-performance scorecard systems, the organization identifies a program champion to serve as a single point of contact. This person should be able to answer questions and provide support. He or she must have access to the IT system(s) and scorecard data. The program champion is often someone in a quality control, training and development, or human resource role.

Scheduled time to design, implement, and test

Time needs to be set aside to fully design, implement, and test the scorecard system and measures (i.e., collect baseline data) prior to attaching it to performance-based pay. As described earlier, if employees do not have control over the measures, there are likely to be problems, such as fear of punitive consequences. During pilot testing/baseline, the organization should gather frequent feedback from employees in every department and revise the measures as appropriate.

Organizational financial stability

The organization should be financially stable. Ultimately, pay-for-performance scorecards produce impressive returns on investment in quality, productivity, customer service, employee retention, that all contribute to financial health. However, if the organization cannot afford the initial payouts, employees and their managers will not receive contingent performance pay and the return on investment will be much lower.

Clear expectations

In successful pay-for-performance scorecard systems, organizations initially, and on an ongoing basis, set clear expectations with managers and employees about what is required of them and how the system aligns with and contributes to the organization's goals.

Any added time and work commitments related to collecting, reviewing, and reporting scorecard data should be set before baseline data are collected. If managers and supervisors will be collaborating with a program champion and/or data analyst, those relationships should be made explicit. Everyone should be given instructions about who answers any questions.

Managers, supervisors, and employees also need a clear description about how individual scorecard measures and the overall system align with the organization's goals and strategies. This transparency helps to overcome potential concerns or confusion participants may have when the system is introduced.

Per the Executive and Management Readiness sections above, it is important for executive leaders to deliver ongoing feedback to managers and supervisors about their participation in the program. This includes reviewing scorecards with managers/supervisors and following up on how they share data with employees. These executive, management, and supervisory behaviors should be included on their individual scorecards as well to encourage leadership behaviors as part of the whole process (Abernathy, 2011).

Frequent, contingent consequences and incentives

This condition may seem out of place, given that pay-for-performance scorecard systems *are* monetary incentives. However, other consequences and incentives should be considered as well.

It is important for executive leaders to provide relief from activities occurring in participants' jobs that could compete with successful work on scorecards. This is particularly true in the beginning.

As mentioned earlier, in successful scorecard systems, executive leaders provide social recognition and praise to managers and supervisors when they successfully use scorecards to manage their teams. This is also important during the program baseline before monetary payouts are available.

Readiness checklist

Organizations considering pay-for-performance should check all the following boxes in Figure 2 before they embark on a pay-for-performance scorecard system.

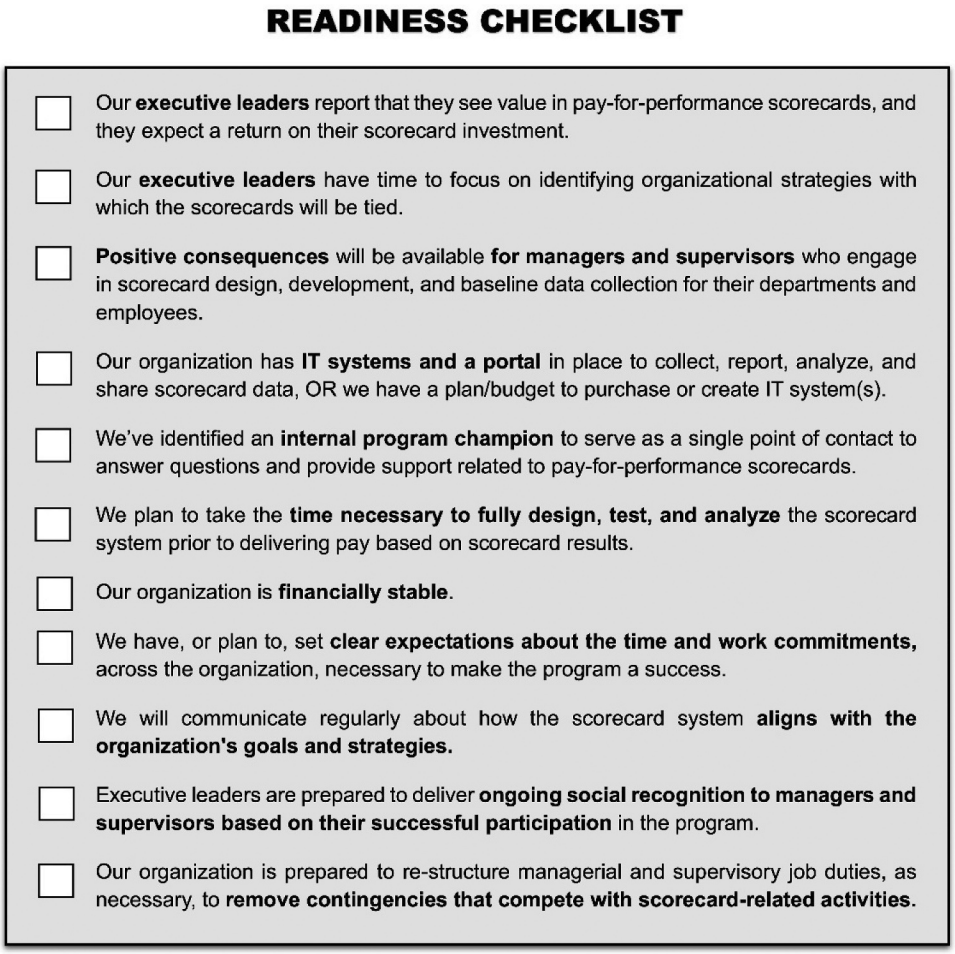

Figure 2. Total performance system, pay-for-performance, readiness checklist.

Conclusion

Although the concept of pay-for-performance rather than pay-for-time-at-work is a simple idea, the actual implementation can be complicated, especially when it disrupts standard practices and implementers are mindful about ensuring fairness and equity. Research will continue to be needed as society and businesses evolve. As reflected in our summary of pay-for-performance research, very few applied studies examine pay-for-performance systems in real work settings. There are concerns cited by most of the researchers whose work is summarized here that their laboratory research may not generalize to work settings (e.g., Bucklin et al., 2003; Johnson et al., 2008; McGee et al., 2006; Slowiak et al., 2011). Extending any of the individual monetary incentive research to real-world work settings would be of tremendous value to the business world.

Conceptually, we know a lot about the potential benefits for both the organization and the individual employee under pay-for performance systems, yet very few organizations have reported their results. We are aware of dozens of applications of pay-for-performance using scorecard systems, mostly consistent with our descriptions. We believe this is partly because of propriety concerns, however, we encourage these organizations when possible to publish their approaches and results as case studies for others to learn from and extend to other industries.

As outlined in this paper, extensive pay-for-performance research and practice over time has led to several recommended behavior-based practices. Any system needs to be balanced and weighted across variables important to both the individual and the organization. To ensure that it is likely to succeed and that it is administered fairly and ethically, we implore readers to adhere to the factors described and summarized in the readiness checklist. We encourage OBM researchers and practitioners to continue implementing, analyzing, and researching pay-for-performance systems while exercising caution against potential drawbacks. Pay-for-performance can have a positive economic and cultural impact for both organizations and individuals when implemented appropriately. The contrary is also true, inadequate compensation systems could lead to unintended and potentially disastrous outcomes, such as unfair pay distribution to certain performers, punitive intentions by management, competitive cultures, or issues related to employee fatigue, safety, or stress. To avoid or mitigate unintended drawbacks, effective and ethical pay-for-performance systems, as outlined in this paper, should involve all stakeholders including participants in the design, payout equitably contingent incentives across multiple performance dimensions, clearly define conditions under which incentives are earned, and follow through on performance expectations. When used carefully and with broad consideration, monetary incentives can

be a powerful tool to potentially improve the social condition, aligning the good of the business with the good of the employee.

Disclosure statement

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ORCID

Douglas A. Johnson http://orcid.org/0000-0002-7802-3566

References

Abernathy, W. B. (1990). *Designing and managing an organization-wide incentive pay system*.

Abernathy, W. B. (1996). *The sin of wages: Where the conventional pay system has led us and how to find a way out*. PerfSys Press.

Abernathy, W. B. (2011). *Pay for profit: Designing an organization-wide performance-based compensation system*. Performance Management Publications.

Abernathy, W. B. (2014a). Beyond the Skinner box: The design and management of organization-wide performance systems. *Journal of Organizational Behavior Management*, *34*(4), 235–254. https://doi.org/10.1080/01608061.2014.973631

Abernathy, W. B. (2014b). *The liberated workplace: Transitioning to Walden Three*. Performance Management Publications.

Abernathy, W. B., Duffy, E. M., & O'Brien, R. M. (1982). Multi-branch, multi-systems programs in banking: An organization-wide intervention. In R. M. O'Brien, A. M. Dickinson, & M. P. Rosow (Eds.), *Industrial behavior modification: A management handbook* (pp. 370–382). Pergamon Press.

Aldis, O. (1961). Of pigeons and men. *Harvard Business Review*, *39*(4), 59–63.

Aljadeff-Abergel, E., Peterson, S. M., Wiskirchen, R. R., Hagen, K. K., & Cole, M. L. (2017). Evaluating the temporal location of feedback: Providing feedback following performance vs. prior to performance. *Journal of Organizational Behavior Management*, *37*(2), 171–195. https://doi.org/10.1080/01608061.2017.1309332

Austin, J. (2000). Performance analysis and performance diagnostics. In J. Austin & J. E. Carr (Eds.), *Handbook of applied behavior analysis* (pp. 321–350). Context Press.

Benson, A. M., & Sajjadiani, S. (2017). Are bonus pools driven by their incentive effects? Evidence from fluctuations in gainsharing incentives. *ILR Review*, *71*(3), 567–599. https://doi.org/10.1177/0019793917726066

Benzer, J. K., Young, G. J., Burgess, J. F., Baker, E., Mohr, D. C., Charns, M. P., & Kaboli, P. J. (2013). Sustainability of quality improvement following removal of pay-for-performance incentives. *Journal of General Internal Medicine*, *29*(1), 127–132. https://doi.org/10.1007/s11606-013-2572-4

Binder, C. (2016). Integrating organizational-cultural values with performance management. *Journal of Organizational Behavior Management*, *36*(2–3), 1–17. https://doi.org/10.1080/01608061.2016.1200512

Braksick, L. W. (2007). *Unlock behavior, unleash profits: Developing leadership behavior that drives profitability in your organization* (2nd ed.). The McGraw-Hill Company.

Bucklin, B. R., & Dickinson, A. M. (2001). Individual monetary incentives: A review of different types of arrangements between performance and pay. *Journal of Organizational Behavior Management*, *21*(3), 45–137. https://doi.org/10.1300/J075v21n03_03

Bucklin, B. R., McGee, H. M., & Dickinson, A. M. (2003). The effects of individual monetary incentives with and without feedback. *Journal of Organizational Behavior Management*, *23* (2–3), 65–94. https://doi.org/10.1300/J075v23n02_05

Caza, A., McCarter, M. W., & Northcraft, G. B. (2015). Performance benefits of reward choice: A procedural justice perspective. *Human Resource Management Journal*, *25*(2), 184–199. https://doi.org/10.1111/1748-8583.12073

Christopher, A. B. (1988). *Predisposition versus experiential models of compulsive gambling: An experimental analysis using pigeons* [Unpublished Ph.D. dissertation]. West Virginia University.

Cooper, C. L., Dyck, B., & Frohlich, N. (1992). Improving the effectiveness of gainsharing: The role of fairness and participation. *Administrative Science Quarterly*, *37*(3), 471–490. https://doi.org/10.2307/2393453

Daniels, A. C., & Bailey, J. (2014). *Performance management: Changing behavior that drives organizational effectiveness* (5th ed.). Performance Management Publications.

Davis, M. E. (2016). Pay matters: The piece rate and health in the developing world. *Annals of Global Health*, *82*(5), 858–865. https://doi.org/10.1016/j.aogh.2016.05.005

Davis, M. E., & Hoyt, E. (2020). A longitudinal study of piece rate and health: Evidence and implications for workers in the US gig economy. *Public Health*, *180*(1), 1–9. https://doi.org/10.1016/j.puhe.2019.10.021

Deci, E. L. (1972). The effects of contingent and noncontingent rewards and controls on intrinsic motivation. *Organizational Behavior & Human Performance*, *8*(2), 217–229. https://doi.org/10.1016/0030-5073(72)90047-5

Deci, E. L., Olafsen, A. H., & Ryan, R. M. (2017). Self-determination theory in work organizations: The state of a science. *Annual Review of Organizational Psychology and Organizational Behavior*, *4*(1), 19–43. https://doi.org/10.1146/annurev-orgpsych-032516-113108

Deng, H., Leung, K., Lam, C. K., & Huang, X. (2019). Slacking off in comfort: A dual-pathway model for psychological safety climate. *Journal of Management*, *45*(3), 1114–1144. https://doi.org/10.1177/0149206317693083

Department of Labor. (2020, November). *Profit sharing plans for small businesses*. https://www.dol.gov/sites/dolgov/files/EBSA/about-ebsa/our-activities/resource-center/publications/profit-sharing-plans-for-small-businesses.pdf

Dickinson, A. M. (2000). The historical roots of organizational behavior management in the private sector: The 1950s-1980s. *Journal of Organizational Behavior Management*, *20*(3–4), 9–58. https://doi.org/10.1300/J075v20n03_02

Dickinson, A. M. (2005). Are we motivated by money? Some results from the laboratory. *Performance Improvement*, *44*(2), 18–24. https://doi.org/10.1002/pfi.4140440306

Dickinson, A. M., & Gillette, K. L. (1993). A comparison of the effects of two individual monetary incentive systems on productivity: Piece rate pay versus base pay plus monetary incentives. *Journal of Organizational Behavior Management*, *14*(1), 3–82. https://doi.org/10.1300/J075v14n01_02

Dierks, W., & McNally, K. A. (1987, March). Incentives you can bank on. *Personnel Administrator*, *32*, 61–65.

Duncan, P. K., & Smoot, D. T. (2001). Pay for performance. In C. M. Johnson, W. K. Redmon, & T. C. Mawhinney (Eds.), *Handbook of organizational performance: Behavior analysis and management* (pp. 255–276). The Haworth Press.

Ferster, C. B., & Skinner, B. F. (1957). *Schedules of reinforcement*. Appleton-Century-Crofts.

Frisch, C. J., & Dickinson, A. M. (1990). Work productivity as a function of the percentage of monetary incentives to base pay. *Journal of Organizational Behavior Management*, *11*(1), 13–33. https://doi.org/10.1300/J075v11n01_03

Garbers, Y., & Konradt, U. (2014). The effect of financial incentives on performance: A quantitative review of individual and team-based financial incentives. *Journal of Occupational and Organizational Psychology*, *87*(1), 102–137. https://doi.org/10.1111/joop.12039

Goomas, D. T., & Ludwig, T. D. (2007). Enhancing incentive programs with proximal goals and immediate feedback: Engineered labor standards and technology enhancements in stocker replenishment. *Journal of Organizational Behavior Management*, *27*(1), 33–68. https://doi.org/10.1300/J075v27n01_02

Gravina, N., Nastasi, J., & Austin, J. (2021). Assessment of employee performance. *Journal of Organizational Behavior Management*, *41*(2), 124–149. https://doi.org/10.1080/01608061.2020.1869136

Griffin, M., Gravina, N. E., Matey, N., Pritchard, J., & Wine, B. (2019). Using scorecards and a lottery to improve the performance of behavior technicians in two autism treatment clinics. *Journal of Organizational Behavior Management*, *39*(3–4), 280–292. https://doi.org/10.1080/01608061.2019.1632241

Hartman, R. (Producer). (1992, November 8). *60 Minutes*. [Television broadcast]. CBS News.

Henderson, R. I., Jr. (1985). *Compensation management: Rewarding performance* (4th ed.). Reston Publishing Company.

Hendijani, R., Bischak, D. P., Arvai, J., & Dugar, S. (2016). Intrinsic motivation, external reward, and their effect on overall motivation and performance. *Human Performance*, *29*(4), 251–274. https://doi.org/10.1080/08959285.2016.1157595

Hodgetts, R. M. (1997). A conversation with Donald F. Hastings on the Lincoln Electric Company. *Organizational Dynamics*, *25*(3), 68–74. https://doi.org/10.1016/S0090-2616(97)90048-6

Honeywell-Johnson, J. A., McGee, H. M., Culig, K. M., & Dickinson, A. M. (2002). Different effects of individual and group monetary incentives on high performance. *The Behavior Analyst Today*, *3*(1), 88–103. https://doi.org/10.1037/h0099964

Honeywell, J. A., Dickinson, A. M., & Poling, A. (1997). Individual performance as a function of individual and group pay contingencies. *The Psychological Record*, *47*(2), 261–274. https://doi.org/10.1007/BF03395224

Jenkins, G. D., & Lawler, E. E. (1981). Impact of employee participation in pay plan development. *Organizational Behavior and Human Performance*, *28*(1), 111–128. https://doi.org/10.1016/0030-5073(81)90018-0

Jenkins, G. D., 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*(5), 777–787. https://doi.org/10.1037/0021-9010.83.5.777

Johansson, B., Rask, K., & Stenberg, M. (2010). Piece rates and their effects on health and safety: A literature review. *Applied Ergonomics*, *41*(4), 607–614. https://doi.org/10.1016/j.apergo.2009.12.020

Johnson, D. A. (2013). A component analysis of the impact of evaluative and objective feedback on performance. *Journal of Organizational Behavior Management*, *33*(2), 89–103. https://doi.org/10.1080/01608061.2013.785879

Johnson, D. A., Dickinson, A. M., & Huitema, B. E. (2008). The effects of objective feedback on performance when individuals receive fixed and individual incentive pay. *Performance Improvement Quarterly*, *20*(3–4), 53–74. https://doi.org/10.1002/piq.20003

Kim, J. H., Gerhart, B., & Fang, M. (2021). Do financial incentives help or harm performance in interesting tasks? *Journal of Applied Psychology*, *107*(1), 153–167. http://dx.doi.org/10.1037/apl0000851

Klein, G. D. (2012). Creating cultures that lead to success: Lincoln Electric, Southwest Airlines, and SAS Institute. *Organizational Dynamics*, *41*(1), 32–43. https://doi.org/10.1016/j.orgdyn.2011.12.005

Koller, F. (2010). *Spark: Lessons from Lincoln Electric's unique guaranteed employment program*. PublicAffairs.

Komaki, J. L., & Minnich, M. L. (2016). A behavioral approach to organizational change: Reinforcing those responsible for facilitating the climate and hence promoting diversity. *Journal of Organizational Behavior Management*, *36*(2–3), 154–184. https://doi.org/10.1080/01608061.2016.1200514

Kruse, D. (1993). *Does profit sharing affect productivity?* (NBER Working Paper Series, 4542). National Bureau of Economic Research.

LaMere, J. M., Dickinson, A. M., Henry, M., Henry, G., & Poling, A. (1996). Effects of a multi-component monetary incentive program on the performance of truck drivers: A longitudinal study. *Behavior Modification*, *20*(4), 385–406. https://doi.org/10.1177/01454455960204002

Ludwig, T. D., & Laske, M. M. (2021). *Behavioral safety: An efficacious application of applied behavior analysis to reduce human suffering*. [Manuscript submitted for publication]. Department of Psychology, Appalachian State University.

Mager, R. F., & Pipe, P. (1970). *Analyzing performance problems*. Fearon.

Matthews, G. A., & Dickinson, A. M. (2000). Effects of alternative activities on productivity under different percentages of incentive pay. *Journal of Organizational Behavior Management*, *20*(1), 3–27. https://doi.org/10.1037/h0099964

McGee, H. M., Dickinson, A. M., Huitema, B. E., & Culig, K. M. (2006). The effects of individual and group monetary incentives on high performance. *Performance Improvement Quarterly*, *19*(4), 107–130. https://doi.org/10.1111/j.1937-8327.2006.tb00387.x

O'Brien, R. M. (1990). Working the other side of the street. *Journal of Organizational Behavior Management*, *11*(1), 193–205. https://doi.org/10.1300/J075v11n01_12

Oah, S., & Dickinson, A. M. (1992). A comparison of the effects of linear and exponential performance pay function on work productivity. *Journal of Organizational Behavior Management*, *12*(1), 85–115. https://doi.org/10.1300/J075v12n01_05

Olson, R., Cunningham, T., Nigam, J., & Anger, W. K. (in press). Total worker health and organizational behavior management: Emerging opportunities for improving worker well-being. *Journal of Organizational Behavior Management*.

Osterman, P. (1994). How common is workplace transformation and who adopts it? *Industrial and Labor Relations Review*, *47*(2), 173–188. https://doi.org/10.1177/001979399404700202

Oxenbridge, S., & Moensted, M. L. (2011). The relationship between payment systems, work intensification and health and safety outcomes: A study of hotel room attendants. *Policy and Practice in Health and Safety*, *9*(2), 7–26. https://doi.org/10.1080/14774003.2011.11667759

Peach, E. B., & Wren, D. A. (1992). Pay for performance from antiquity to the 1950s. *Journal of Organizational Behavior Management*, *12*(1), 5–26. https://doi.org/10.1300/J075v12n01_02

Perry, N. J. (1988, December 19). Here come richer, riskier pay plans. *Fortune*, 51–58.

Pink, D. (2009). *Drive: The surprising truth about what motivates us*. Penguin.

Rosenthal, M., & Dudley, R. (2007). Pay-for-performance: Will the latest payment trend improve care? *Journal of American Medical Association*, *297*(7), 740–744. https://doi.org/10.1001/jama.297.7.740

Rothe, H. F. (1947). Review of Lincoln's incentive system [Review of the book Lincoln's incentive system, by J. F. Lincoln]. *Journal of Applied Psychology*, *31*(3), 344–345. https://doi.org/10.1037/h0050780

Schwarz, R. M. (1989). Participative decision making; Comparing union-management and management-designed incentive pay programs. *Group & Organizational Studies*, *14*(1), 104–122. https://doi.org/10.1177/105960118901400109

Skinner, B. F. (1938). *The behavior of organisms: An experimental analysis*. Appleton-Century-Crofts.

Skinner, B. F. (1953). *Science and human behavior*. Macmillan.

Skinner, B. F. (1969). *Contingencies of reinforcement: A theoretical analysis*. Appleton-Century-Crofts.

Slowiak, J. M., Dickinson, A. M., & Huitema, B. (2011). Self-solicited feedback: Effects of hourly pay and individual monetary incentive pay. *Journal of Organizational Behavior Management*, *31*(1), 3–20. https://doi.org/10.1080/01608061.2011.541816

Smoot, D. A., & Duncan, P. K. (1997). The search for optimum individual monetary incentive pay system: A comparison of the effects of flat pay and linear and non-linear incentive pay systems on worker productivity. *Journal of Organizational Behavior Management*, *17*(2), 5–75. https://doi.org/10.1300/J075v17n02_02

Solman, P. (2011, July 18). *Were we too easy on Lincoln Electric?* PBS Newshour. https://www.pbs.org/newshour/rundown/2011/07/were-we-too-easy-on-lincoln-electric.html

Stolovitch, H. D., Clark, R. E., & Condly, S. J. (2002). Incentives, motivation and workplace performance: Research & best practices. *International Society for Performance Improvement and the SITE Foundation*.

Suri, G. K. (1970). The Lincoln Incentive System: Its relevancy to Indian Industry. *Indian Journal of Industrial Relations*, *6*(3), 297–302.

Szabo, T. G., Williams, W. L., Rafacz, S. D., Newsome, W., & Lydon, C. A. (2012). Evaluation of the service review model with performance scorecards. *Journal of Organizational Behavior Management*, *32*(4), 274–296. https://doi.org/10.1080/01608061.2012.729408

Taylor, F. W. (1911). *The principles of scientific management*. Harper & Brothers.

Thurkow, N. M., Bailey, J. S., & Stamper, M. R. (2000). The effects of group and individual monetary incentives on productivity of telephone interviewers. *Journal of Organizational Behavior Management*, *20*(2), 3–25. https://doi.org/10.1300/J075v20n02_02

Warman, A. S., Wine, B., & Ernest, R. (2020). An application of pay-for-performance in a human services setting. *Journal of Organizational Behavior Management*, *40*(3–4), 273–283. https://doi.org/10.1080/01608061.2020.1819514

Weibel, A., Rost, K., & Osterloh, M. (2010). Pay for performance in the public sector—Benefits and (hidden) costs. *Journal of Public Administration: Research and Theory*, *20*(2), 387–412. https://doi.org/10.1093/jopart/mup009

Zentall, T. R. (2014). Suboptimal choice by pigeons: An analog of human gambling behavior. *Behavioral Processes*, *103*, 156–164. https://doi.org/10.1016/j.beproc.2013.11.004