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The Impact of Financial and Nonfinancial Incentives on Business-Unit Outcomes Over Time

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Unlike previous behavior management research, this study used a quasi-experimental, control group design to examine the impact of financial and nonfinancial incentives on business-unit (21 stores in a fast-food franchise corporation) outcomes (profit, customer service, and employee turnover) over time. The results showed that both types of incentives had a significant impact on all measured outcomes. The financial incentive initially had a greater effect on all 3 outcomes, but over time, the financial and nonfinancial incentives had an equally significant impact except in terms of employee turnover.

Keywords: financial incentives, nonfinancial incentives, business unit outcomes, performance management, fast food industry

Considerable attention has been given to the types of incentives that are most effective for managing performance behavior at the individual level (e.g., Ambrose & Kulik, 1999; Heneman & Judge, 1999; Stajkovic & Luthans, 1997, 2001, 2003). However, research examining the use of incentives to enhance outcomes at the business-unit level is lacking, even though this level of analysis is crucial to an organization's competitive advantage through outcomes such as profitability, customer service, and employee retention (Harter, Schmidt, & Hayes, 2002). To date, extensive research has focused on the business-unit level—for example, studies have concentrated on the relationship between employee attitudes (Ashworth, Higgs, Schneider, Shepherd, & Carr, 1995; Ostroff, 1992; Ryan, Schmit, & Johnson, 1996), leadership (Bass, Avolio, Jung, & Berson, 2003; Howell & Avolio, 1993), or training (Shaw, Delery, Jenkins, & Gupta, 1998) and business-unit outcomes. Yet little or no attention has been paid to evaluating indicators such as financial or nonfinancial incentives on business-unit outcomes. In addition, most research on business-unit-level outcomes has relied on a single indicator of unit performance, despite general agreement that multiple criteria are needed for a more comprehensive evaluation of performance impact (Cameron, 1986; Goodman & Pennings, 1980). Finally, to date, incentive intervention studies have not examined impact over time (Stajkovic & Luthans, 2003). To begin to meet these gaps, our purpose in this study was to use multiple criteria (business-unit profitability, critical customer service, and turnover) over time to investigate how financial and nonfinancial incentives relate to business-unit performance.

Application of Incentive Motivators to Business-Unit Outcomes

Previous studies have shown that when properly implemented, incentive motivators are effective mechanisms for enhancing individual performance (Kluger & DeNisi, 1996; Komaki, Coombs, & Schepman, 1996; Stajkovic & Luthans, 1997, 2003). As Bandura (1986) argued, "human behavior . . . cannot be fully understood without considering the regulatory influence of response consequences" (p. 228). In fact, as much as human agency is rooted in social systems (Bandura, 1999), individual work performance is at least partially determined by organizational reward systems (Rynes & Gerhart, 1999). However, this does not assume that different reinforcing contingencies produce uniform effects. For example, Bandura (1986) has provided theoretical understanding of the nature of different types of reinforcers, and there is considerable research evidence showing that different reinforcing contingencies produce different effects on performance (Bandura, 1986; Kluger & DeNisi, 1996; Komaki et al., 1996; Stajkovic & Luthans, 1997, 2001, 2003). In particular, in the development of contingent interventions, different types of incentive motivators may have different effects on workplace outcomes because of their unique and subsequent (a) outcome utility, (b) informative content, and (c) mechanisms through which they regulate human action (Stajkovic & Luthans, 2001).

Recent meta-analyses indicate that both financial and nonfinancial incentive motivators have a positive impact on individual performance (see Stajkovic & Luthans, 1997, 2003). We seek to build upon previous research by examining the impact of both financial and nonfinancial incentive motivators on unit-level outcomes over time. The underlying theoretical premise for this study, which recognizes the theoretical, methodological, and longitudinal implications of multiple levels of analysis (Dansereau, Yammarino, & Kohles, 1998; Klein, Dansereau, & Hall, 1994; Klein & Kozlowski, 2000), is that individual performance has an impact on

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business-unit outcomes. As Guzzo (1988) and colleagues (Guzzo & Shea, 1992) have pointed out, much of organizational or unit-level performance is indirectly influenced by the same factors that affect individual performance. For example, just as it is widely recognized that incentive systems influence individual employee behavior, we propose that incentives also affect employees' collective behavior, resulting in improvements in unit-level outcomes. This is because the incentive system is a shared experience of a group of employees, and its impact is likely reflected through shared behaviors and resulting outcomes produced by those group members. As Kozlowski and Hattrup (1992) noted, "individuals within a bounded context are presented with relatively homogeneous situational factors and events that lead to collective interpretations and response tendencies" (p. 162).

Although the exact process of how individual outcomes lead to unit outcomes is not yet entirely understood, there is increasing evidence that collectively a unit's employees can provide a unique source of competitive advantage that is difficult for others to replicate (Harter et al., 2002; Huselid, 1995; O'Reilly & Pfeffer, 2000; Wright & McMahan, 1992). For example, recent work by the Gallup Organization in industries as varied as retail, hospitality, health care, and manufacturing has empirically confirmed that certain human resource management practices can result in a collectively "engaged" group of employees, and these engaged employees have a positive impact on performance outcomes such as productivity, customer satisfaction, employee retention, and even profits (Harter et al., 2002; Tritch, 2003). Similarly, findings by Collins and Clark (2003) suggest that a positive relationship between certain human resource practices and firm performance can be explained by the influence that such practices have on the social networks of employees. Results of these studies highlight the importance of considering the impact that human resource practices have on the employee group level.

Many years ago, Argyris (1964) suggested that engaging in practices such as fair compensation, feedback systems, and participative management should lead to positive organizational outcomes. However, Argyris, and more recently Goodman (2000), also recognized that there are "missing organizational linkages" between administering incentives and achieving business-unit outcomes. Because managers are typically charged with both developing the policies for incentives and implementing the incentives, the managers' role may provide some answers to this missing linkage. As Organ (1977) suggested, whether incentives have a positive impact on organizational behaviors depends in large part on how they are treated by supervisors and managers. It follows that the systematic application of incentive motivators by supervisors and managers should be reflected in positive-performance-related behaviors at both the individual level and collectively at the business-unit level.

The research question addressed in this study is therefore whether the systematic administration of incentive motivators has a positive impact on unit-level performance outcomes over time and whether financial and nonfinancial incentives have a differential effect on those outcomes. Before describing the methodology designed to answer this question, however, we present the theoretical grounding of the financial and nonfinancial incentives and the context for the study.

Financial Incentive Motivators

The theoretical basis for money as an effective incentive motivator has been given attention over the years (Mitchell & Mickel, 1999). In the most general sense, money has been shown to attract, motivate, and retain employees as well as to serve as a reinforcer of employee performance (Stajkovic & Luthans, 1997, 2003), and when withheld, money can act as a punisher (Milkovich & Newman, 1999). Theoretically, money serves as an incentive primarily because it can be exchanged for other desirable outcomes such as goods, services, or privileges (Komaki et al., 1996). Although many forms of financial incentives are available (e.g., vacations, gift certificates), lump-sum bonuses are becoming a commonly used pay method to retain and motivate employees (Sturges, 1994; Sturman & Short, 2000). Lump-sum bonuses are cash payments to employees that are not added to employees' base wages and therefore do not cause larger fixed labor costs in the long run (Dulebohn & Martocchio, 1998). In addition, lump-sum bonuses are a part of compensation that is not guaranteed and are usually paid in recognition of some level of performance attainment or goal achievement (Milkovich & Newman, 1999).

To make financial incentives more effective, Lawler (2000) has suggested that administrative or application processes be given attention. First, the more closely the financial incentives are tied to performance, the greater the improvement on a variety of outcomes. For example, recent findings indicate that reward contingencies moderate the performance–turnover relationship in that higher performers reported more turnover intentions when rewards were not perceived as contingent on performance (Sturman & Trevor, 2001; Trevor, Gerhart, & Boudreau, 1997). Gerhart and Milkovich (1992) explained this phenomenon by suggesting that high-performer turnover is greater under the condition of low-reward contingency because the desire to change jobs should increase as reward inequity increases. Therefore, when a weak pay-for-performance link exists, turnover of the best people may occur because they perceive that their high performance will not be sufficiently rewarded.

A second theoretical consideration relevant to this study of financial incentives revolves around whether the pay plan is focused on the individual or on the group. Group-incentive systems include plans in which payouts are contingent on the achievement of group or unit goals and often include a formal employee involvement component. Profit sharing and gain sharing are the most common, but lump-sum bonuses delivered to a group in recognition of group performance levels or goal achievement are quickly supplanting other plans (Milkovich & Newman, 1999). There is initial evidence that well-designed pay plans based on group performance can increase productivity (Bowie-McCoy, Wendt, & Chope, 1993; Kruse, 1993), but to date no research has shown the impact of financial incentives on business-unit profits, customer service, or employee turnover.

Nonfinancial Incentive Motivators

Nonfinancial incentives in organizations are most closely associated with recognition and performance feedback. Although the nonfinancial incentive of recognition does not have as extensive a theoretical foundation as that of money, we argue that the conceptual differentiation between recognition and social recognition is

important. Recognition in the application literature (e.g., Nelson, 2001) usually refers to formal programs such as employee of the month or top sales awards. Social recognition, however, refers to the more informal acknowledgment, attention, praise, approval, or genuine appreciation for work well done from one individual or group to another (Haynes, Pine, & Fitch, 1982; Luthans & Stajkovic, 2000).

Although social recognition has been given relatively less attention than formal recognition in the practitioner literature, considerable research has shown that if social recognition is provided on a contingent basis in managing employee behavior, it can be a powerful incentive motivator for performance improvement (Stajkovic & Luthans, 1997, 2001, 2003). In addition, practicing managers do seem to value social recognition as an incentive, even though this finding has been neglected in the literature. For example, according to a survey by Nelson (2001), 90% of managers felt that informal recognition helped to better motivate employees, and 84% believed providing nonfinancial recognition to employees when they do good work helps to increase their performance.

As to the nonfinancial incentive of performance feedback, although conceptually and practically closely related to social recognition, in behavioral performance management it has precise meaning. Performance feedback is defined as providing quantitative or qualitative information on past performance for the purpose of changing or maintaining performance in specific ways (Prue & Fairbank, 1981). Thus, a true feedback intervention in behavioral management conveys more task-relevant information to employees than does social recognition. Because social recognition, instead of conveying task-related information (Stajkovic & Luthans, 2001), gains its power primarily from the recipient's expectation that receiving acknowledgment or appreciation may lead to more tangible rewards down the road, it often fails to guide future performance efforts.

In fact, meta-analysis indicates that feedback interventions have mixed results on performance; in some conditions performance increases, and in other conditions no effect is reported (Kluger & DeNisi, 1996). However, performance feedback as used in behavioral management (Kopelman, 1986) refers to information regarding a level of performance (outcome feedback) and/or the manner and efficiency with which performance has been executed and how to improve it in the future (process feedback). Objective feedback information helps employees know what can be done in the future to improve performance (Annett, 1969; Bandura, 1986; Kluger & DeNisi, 1996; Stajkovic & Luthans, 2001) and has been found to be most effective when it is (a) conveyed in a positive manner; (b) delivered immediately after observing levels of performance; (c) represented visually, such as in graph or charted form; and (d) specific to the behavior that is being targeted for feedback (Luthans, 1995; Luthans & Kreitner, 1985).

On the basis of the aforementioned findings, we combined social recognition and performance feedback into one nonfinancial intervention condition. The delivery of social recognition allows the targeted employees to realize that they were noticed, and the feedback condition enables the target employees to know how they were doing. Another reason we combined them into one nonfinancial incentive is that social recognition and feedback may be potentially confounding interventions (i.e., social recognition is a form of feedback and vice versa).

The Fast-Food Industry Context

Although business-unit outcomes are receiving increasing attention in all types of settings (e.g., Harter et al., 2002), the need for research at this level is especially acute in the restaurant industry. Lynn (2002), editor of the *Cornell Hotel and Restaurant Administration Quarterly*, recently made a call for researchers to design experiments that can identify the causes of outcomes that industry practitioners care about:

It is the job of every hospitality manager and executive to achieve various objectives (e.g., reduce turnover, increase customer satisfaction, build market share). Research that identifies the variables under managers' control that can produce specified desired outcomes is of real value to the industry. (p. ii)

The site selected for this study seeks to fill this need in the fast-food industry.

In the fast-food industry, turnover is recognized as one of the biggest problems (Ghiselli, La Lopa, & Bai, 2001). Replacing frequent voluntary turnovers with qualified, motivated employees has been cited as being managers' greatest challenge given the presence of low wages, the physicality of the work, and the undesirable hours (Dermody & Holloway, 1998; Ghiselli et al., 2001). Considering the cost and effects of turnover, as well as the intense competition for the available pool of employees within the industry, fast-food companies need to find strategies for retaining their employees to achieve a competitive advantage. Fast-food industry investigations have found that inadequate compensation and failure to give recognition were the top reasons for employee turnover (Dermody & Holloway, 1998; Price, 1997). Thus, in addition to the important outcomes of business-unit profitability and customer service, the specific research questions for this study also include the impact of financial and nonfinancial incentives (and their differential effects) on employee turnover over time.

Method

The study used all 21 fast-food franchises (business units) owned by one firm. These units were located in four small-to-medium-sized cities within about a 100-mile area in the Midwest. Each unit had on average two managers, with some stores having three ($N = 58$). These managers ranged in age from 32 to 56 years, with a median age of 40.2. They had 15.6 years of formal education and had worked in their present job for 3.6 years (all median values). There were no significant differences between the managers in the experimental groups and those in the control group on any of these demographic variables. Each unit comprised approximately 25 subordinates. Subordinates ranged in age from 16 to 58 years, with a median age of 24.7. They had completed 11.4 years of school and had worked in their present job for 1.7 years (all median values). To control for potential managerial style differences before the intervention, we asked the subordinates within the units to rate the extent to which their managers already displayed behavior associated with the nonfinancial intervention. We used a six-item measure of managerial style (Cronbach's $\alpha = .89$), with items such as "My manager often gives me a 'pat on the back' for doing a good job." There were no significant differences between managers in the experimental groups and those in the control group.

Design and Procedure

The study used a quasi-experimental design (randomization of groups to treatments but not individuals to groups; Cook & Campbell, 1979). Out of

the 21 units, three groups were formed for this study: (a) financial (3 stores); (b) nonfinancial (6 stores); and (c) control (12 stores). Because all analyses were to be conducted at the unit level, we sought equal numbers of units in each group. However, the company permitted only 9 units in total to be subjected to an intervention. Specifically, because of the uncertainty of the financial commitment, they allowed 3 units to receive the monetary intervention, leaving 6 for the nonfinancial intervention and the remaining 12 to serve as controls. Given this restraint, we still randomly placed units in these conditions. As this design indicates, the subordinates were nested under managers who would administer the incentive intervention. A statistical check indicated that the subordinates did not differ across the three groups in age, education, or job tenure.

Training

The training was conducted in two separate 3-hr sessions: one for the managers of the units that were using financial incentives (i.e., contingent supplemental pay administered at the unit level) in a behavioral management approach and one for the managers who were using nonfinancial incentives (i.e., contingent social recognition and performance feedback administered at the unit level) in a behavioral management approach. As with the procedures used in previous research (Stajkovic & Luthans, 1997, 2001), in this study each training session first consisted of a presentation and discussion regarding principles of behavioral management and a five-step application behavioral management model (Luthans & Kreitner, 1985). Specifically, both groups of managers were taught how to do the following:

1. Identify antecedents and consequences
2. Measure antecedents and consequences
3. Functionally analyze antecedents and consequences
4. Apply interventions (financial or nonfinancial)
5. Evaluate critical performance behaviors

Each group received the identical training program content, conducted by the same researchers, except for the type of intervention they were to use in Step 4 (i.e., the financial or nonfinancial incentive).

After this presentation on behavioral management, each training session involved experiential practice and role-playing to ensure that learning had occurred. There was enough time for the training participants (i.e., the managers in the intervention groups) to get a chance to have a “practice turn.” Trainees were asked to identify critical, observable, and measurable behaviors that were currently deficient but that could have had a great impact on improving performance in key areas of their units (Steps 1 and 2). This began with a list of over 60 behaviors, which the management team as a whole then narrowed down by democratic vote in order of importance to unit-performance outcomes. Example behaviors included keeping both hands moving at the drive-through window, working during idle time, repeating the customer’s order back to him or her, or speed of service delivery.

Financial incentive treatment group. Because past research (Guthrie, 2000; Milkovich & Newman, 1999) has indicated that group pay system acceptance requires employee involvement, the managers in the financial incentive group were told to carefully communicate at the beginning of the intervention the specifics of the money distribution plan to ensure that the workers fully understood that the payout process depended on their exhibiting specific behaviors. Moreover, in order to encourage behavior that was aligned with the organization’s interests, there was evidence that the company must closely link pay to organizational success (Eisenhardt, 1988) and specific performance behaviors (Stajkovic & Luthans, 2001). Indeed, recent research has indicated that a strong pay-for-performance

link not only contributes to positive employee perceptions (Lawler, 2000) but also leads to improvement in productivity (Stajkovic & Luthans, 2001) and curbs turnover of valuable employees (Trevor et al., 1997).

To meet these effective pay-for-performance criteria at the business-unit level, employees were told that the same lump-sum monetary consequence would only be forthcoming when members of the unit *collectively* engaged in the identified and communicated critical performance behaviors. That is, money would only be distributed on the basis of pay for contingent group performance behavior. This meant that rather than increase the individual employee’s base wages (e.g., from \$8.00/hr to \$8.50/hr), managers systematically administered lump-sum bonuses to their workers’ paychecks only when the group’s critical performance behaviors were observed and measured. Because it would be impossible for managers to observe all employees at all times, the managers used the same time sampling method. Managers systematically marked down at the same number of randomly spaced times the critical performance behaviors they observed by employees in the unit and were given tally sheets expressly for this purpose. At the end of each month, on the basis of the objectively observed data collected on the critical performance behaviors exhibited by the employees in the entire unit, the following payouts were given: up to 50 behaviors observed, \$25 added to all the paychecks of the unit’s employees; 50–100 behaviors, \$50 per paycheck; over 100 behaviors, \$75.

Payouts for the financial groups ranged from a \$33.07 average per employee per month during the 3 months posttraining to a \$54.61 average per employee per month during the next 3 months to a \$70.55 average per employee per month during the final 3 months. A potential limitation of this payout method might have been the employees’ engaging in the minimum behaviors within the 50-behavior range, but this was not deemed to be a problem because these behaviors were for the group as a whole and because of the relative ease of performing these behaviors. Also, on the basis of company data regarding their previous bonus programs, \$25 represented an increment level that would motivate their employees. Specifically, employees were asked the following: “What amount of money would motivate you to try to perform your job at a higher level?” Employees were given the following options: (a) \$10–\$15, (b) \$15–\$20, (c) \$20–\$25, (d) \$25–\$30, (e) \$30–\$35, (f) \$35–\$40, or (g) above \$40. Sixty-eight percent of employees responded that \$25–\$30 would motivate them. On the basis of this objective information and the firm’s ability to pay, we expected that most of these employees would respond well to the \$25 increments.

Nonfinancial treatment group. In an attempt to keep levels of analysis consistent and aligned, we wanted the nonfinancial intervention, like the financial treatment, to be delivered at the unit level as much as possible. To accomplish this objective, we trained the managers in the nonfinancial group to deliver performance feedback and social recognition at the unit level. Specifically, for the performance feedback, managers developed charts of the entire group’s quantitative information concerning the frequency of the identified critical performance behaviors. For example, managers would chart the drive-through times and the cash overshort at the end of the day. These large poster-sized charts were placed in a prominent place (e.g., by the time clock) where all members of the unit could readily see the results. In addition, the managers were trained to administer positive recognition not only to individuals but also to groups and to the entire unit for performing the identified behaviors (e.g., “I noticed that today the drive-through times were really good. That is great since that is what we’re really focusing on these days”). This contingent social recognition could be heard most of the time by several employees or even by the whole group because of the close proximity of employees in the unit. Even if the social recognition was directed to an individual, the proximity was such that it was deemed to serve as vicarious reinforcement to others. In addition, to assure social recognition to the unit level, managers gave a memo to each employee on a weekly basis that summarized (in a positive way) how the unit was progressing on the identified behaviors. Specific,

but anonymous, examples recognizing the critical behaviors being exhibited were used in these weekly memos.

Measures of Business-Unit Outcomes

Again, the focus of this study was on unit-level outcomes rather than on individual performance outcomes, which dominate the behavioral management literature (see Dienesch & Liden, 1986, and Rousseau, 1985, for a discussion regarding the aggregation of individual-level responses to predict group-level performance). For our study, the company provided, from currently existing records, unit gross profit data as well as a key customer service indicator of drive-through times. In addition, the organization carefully tracked and provided us with employee turnover data. Because all these data were kept on a monthly basis, we averaged the data for 3-month periods to prevent potentially misleading short-run fluctuations and to secure more reliable, stable estimates (Schwab, 1999).

Gross profitability. The corporation provided us with the data on gross profits (i.e., revenue minus expenses) of each unit measured monthly in dollars. We averaged these gross profits in each condition in 3-month intervals: Time 1 = 3 months prior to intervention; Time 2 = 3 months postintervention; Time 3 = 6 months postintervention; and Time 4 = 9 months postintervention.

Drive-through time. Drive-through time was measured in minutes it takes for customers to approach the restaurant, order their food, pay, and leave the restaurant. Drive-through times in the fast-food industry have long been considered a key customer service indicator, because they represent a standard used to benchmark speed and efficiency of operations to meet customer expectations. In fact, in a relevant study, excessive drive-through time was ranked second in importance to customers and was the primary reason for customers' not coming back (Kelley, Hoffman, & Davis, 1993). Drive-through times are recorded for every transaction and then averaged at the end of each shift to determine this measure of the unit's customer service performance. The drive-through times are automatically recorded by an in-store computer and were averaged for each store by aggregating all shifts to derive the average drive-through times per store across shifts for each of the time periods in the study.

Employee turnover. This franchise corporation has a very high turnover rate, averaging over 200% in a 3-month time period (i.e., they only retain an employee about an average of 1.5 months). However, this figure is in line with the industry average for geographic locales similar to the ones in which our study's units were located. Much of this turnover in the industry is due to the demographics of the workforce (e.g., students and older workers who lack long-term commitment to the job), a shortage of unskilled workers in these locations, as well as tactics whereby competitors offer hiring bonuses to lure employees from one another. This company produced monthly turnover reports in percentages. For consistency, we again averaged turnover at each of the study's 3-month time periods.

Manipulation Checks

As a manipulation check, the researchers, accompanied by the field manager who normally made such calls, randomly conducted weekly follow-up visits to all the units in the experimental treatments; in addition, the researchers made frequent phone calls and sent e-mails to the unit managers until the end of the study. The researchers would probe the managers with questions and comments as to whether he or she remembered and was implementing the training received. Also, for those units in the financial treatment condition, the company e-mailed us objective data reports that showed the payouts being distributed at each store, which allowed us to monitor and confirm that the intervention was indeed ongoing. For those in the nonfinancial intervention condition, the managers sent us (via weekly e-mails) the feedback charts they were creating and displaying as well as copies of the social recognition memos that were being distributed to employees. During our site visits and by e-mail, many

also provided us with anecdotal evidence of the verbal social recognition they were giving.

Results

Correlations, means, and standard deviations for the study variables are shown in Table 1. The reported correlations were based on all the business units/stores in the study ($N = 21$) and were aggregated across conditions (control and financial and nonfinancial treatments) that were reported at the 6-month time period (i.e., halfway through the intervention as has been done in previous studies; see Frayne & Geringer, 2000). As a preliminary step in the analysis, the equivalence of experimental and control groups on the three outcomes measures was assessed. This step was accomplished by computing t tests for the significance of differences using the preintervention data. Although visual inspection indicated that the financial intervention group was slightly outperforming the nonfinancial and control groups, statistical analysis revealed that none of the results of the t tests for differences on the means of the preintervention data was significant.

Intervention Versus Control Groups: A Comparison Over Time

We modeled our analytical strategy on that of Frayne and Geringer (2000). To control for the error rate in analyses, we used multivariate analysis of variance to analyze all measures collected for the control and intervention groups for all time periods. Results of sphericity tests indicated that univariate analyses of variance (ANOVAs) on each of the measures were appropriate. Thus, a series of contrasts were performed: Mean differences were examined between the three groups separately within each period of time. Kieffer, Reece, and Thompson (2001) have suggested that this is the best strategy when researchers are interested in a priori planned contrasts.

In this study, two-way interaction contrasts were performed for each outcome variable (i.e., profitability, drive-through times, and turnover): Contrast 1 was between the control group (no intervention) and both the financial intervention group and the nonfinancial intervention group at each period of time (preintervention, 3 months, 6 months, and 9 months). Contrast 2 was between the financial group and the nonfinancial group at each period of time. The purpose of these contrasts was to answer analytically the following questions: (a) Is the difference between the control and

Table 1
Correlations Means, and Standard Deviations for Variables

Variable	1	2	3
1. Gross profits	—	-.63*	-.47*
2. Drive-through times		—	.49*
3. Turnover			—
<i>M</i>	73.3	53.2	211.5
<i>SD</i>	17.2	29.6	99.4

Note. All correlations were based on $n = 21$ (all business units/stores in the study) on aggregated measures across all conditions (control and financial and nonfinancial treatments) taken at the 6-month time period.

* $p \leq .01$.

the two intervention conditions (financial and nonfinancial) the same for each period of time? (b) Is the difference between the financial and nonfinancial conditions the same for each period of time? The means and standard deviations of the business-unit profit performance, customer service, and employee turnover measures are shown in Table 2.

Profit performance. For gross profits, a repeated measures ANOVA revealed significant main effects for groups, $F(2, 18) = 71.23, p < .01, \eta^2 = .34$, and time, $F(3, 54) = 62.17, p < .01, \eta^2 = .13$. The Group \times Time interaction was also significant, $F(6, 54) = 57.63, p < .01, \eta^2 = .12$. We examined this significant interaction further by exploring some contrasts: the control group contrasted with both treatment groups (Contrast 1) and the financial group contrasted with the nonfinancial treatment group (Contrast 2). Each contrast was an interaction contrast. At preintervention, none of the contrasts was significant. However, 3 months after the intervention, Contrast 1 was significant, $F(1, 18) = 189.43, p < .01, \eta^2 = .05$. Contrast 2 was also significant, $F(1, 18) = 91.18, p < .01, \eta^2 = .01$. Overall, results indicated that prior to the intervention, there were no differences between the three groups (control, financial, and nonfinancial). Three months after the intervention, however, both the financial as well as the nonfinancial group outperformed the control group. Also, the financial group outperformed the nonfinancial group.

Six months postintervention, only Contrast 1 was significant, $F(1, 18) = 311.27, p < .01, \eta^2 = .02$. In the final 9-month postintervention analysis, only Contrast 1 was again significant, $F(1, 18) = 216.12, p < .01, \eta^2 = .12$. These results indicate that over the course of the 9-month period, both the financial as well as the nonfinancial interventions continued to have a positive impact on profits when compared with the control group. Also noteworthy is that although the financial intervention outperformed the nonfinancial intervention initially (i.e., at the 3-month analysis), these differences disappeared over time. At both 6 and 9 months, there were no significant differences between the financial and nonfinancial interventions vis-à-vis profits. In other words, this analysis indicated that financial and nonfinancial incentive motivators had

an equally effective impact on unit-level profit performance over time.

Drive-through times. The repeated measures ANOVA on drive-through timing revealed significant main effects for group, $F(2, 18) = 1,027, p < .01, \eta^2 = .47$, and time $F(3, 54) = 218.19, p < .01, \eta^2 = .21$. The Group \times Time interaction was also significant, $F(6, 54) = 212.65, p < .01, \eta^2 = .23$. Further analysis of the interaction by means of the previously mentioned contrasts revealed no significant difference between the control group and the two treatment groups at preintervention. However, at 3 months, both contrasts were significant with Contrast 1 (the control vs. the two treatments), which explains the largest proportion of the interaction variance, $F(1, 18) = 727.63, p < .01, \eta^2 = .14$; for Contrast 2 (financial vs. nonfinancial), $F(1, 18) = 46.24, p < .01, \eta^2 = .02$.

At 6 months postintervention, only Contrast 1 was significant, $F(1, 18) = 922.89, p < .01, \eta^2 = .13$. Similarly, at 9 months, Contrast 1 was again significant, $F(1, 18) = 1,127.34, p < .01, \eta^2 = .12$, whereas Contrast 2 was not. Overall, these results indicate that for the key measurable customer service criterion of drive-through times, there were no significant differences between the control and intervention groups prior to the intervention. However, postintervention, both treatment groups outperformed the control group in the short- and the long-term. Like the effects on profit performance at 6 and 9 months, there were no differences between the financial and nonfinancial incentives on drive-through times.

Employee turnover. The last outcome variable examined was employee turnover. A repeated measures ANOVA showed significant main effects of group, $F(2, 18) = 66.25, p < .01, \eta^2 = .14$, and time, $F(3, 54) = 44.29, p < .01, \eta^2 = .17$. The Group \times Time interaction was also significant, $F(6, 54) = 19.56, p < .01, \eta^2 = .14$. This significant interaction was also examined further by looking at the contrasts at each time period. At pretraining, neither Contrast 1 nor Contrast 2 was significant. However, at 3 months, both Contrast 1 and 2 were significant, $F(1, 54) = 21.22, p < .01, \eta^2 = .04$, and $F(1, 54) = 16.23, p < .03, \eta^2 = .03$, respectively.

Table 2
Means and Standard Deviations of Performance Measures by Intervention and Control Groups

Time	Control		Financial		Nonfinancial	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Gross profits ^a						
Preintervention	62.3	11.4	64.7	14.7	61.2	16.2
3 months	65.4	22.9	75.2	21.4	71.2	18.1
6 months	62.7	15.7	79.1	23.6	78.1	18.3
9 months	63.3	32.9	84.1	32.8	83.2	32.1
Drive-through timing ^b						
Preintervention	63.9	24.9	58.6	21.8	59.4	20.2
3 months	63.5	33.1	54.7	24.6	48.1	21.9
6 months	61.4	42.7	50.6	38.8	47.6	31.3
9 months	61.9	31.3	47.3	29.1	44.3	29.1
Turnover (%)						
Preintervention	220.3	97.2	209.6	88.1	218.4	79.1
3 months	247.4	98.3	201.9	110.2	216.6	103.6
6 months	239.1	94.4	192.8	119.2	202.5	102.6
9 months	231.7	87.8	181.4	88.6	196.6	88.2

^a Measured in thousands of dollars. ^b Measured in seconds.

Unlike the profit and customer service performance analyses, for turnover at 6 months, both contrasts were again significant: Contrast 1, $F(1, 18) = 30.34, p < .01, \eta^2 = .01$; Contrast 2, $F(1, 18) = 12.13, p < .01, \eta^2 = .04$. At 9 months both contrasts were again significant: Contrast 1, $F(1, 18) = 43.29, p < .01, \eta^2 = .02$; Contrast 2, $F(1, 18) = 9.76, p < .01, \eta^2 = .04$. Overall, results again demonstrate that there were no significant differences in turnover between the control and the intervention groups prior to the intervention. However, postintervention, both treatment groups had less turnover than did the control group. The difference in results between turnover and the other unit outcomes (i.e., profits, drive-through times) is that the financial incentive did have a significantly greater impact on improving turnover than did the nonfinancial incentive over time.

Finally, to control for the potential cyclical or seasonal effects of the unit outcomes, we performed a post hoc cursory examination of archival data of the intervention groups from the same time period during the previous year; this survey did not indicate the improved trends found during the intervention periods of the study.

Discussion

The results indicated that both financial and nonfinancial incentives contingently administered to identified performance behaviors exhibited by the work group significantly increased both unit profit performance and customer service measures and decreased turnover rates. It is important to note that these improvements were sustainable over time. In today's climate of focusing on quick-hit financial performance improvement for the capital markets (e.g., downsizing and Enron-type "creative accounting"), genuine sustainable performance improvement through people would seem to best contribute to competitive advantage (Luthans & Youssef, 2004; Pfeffer, 1998). Although statistically significant improvements were evidenced in all the measured performance outcomes, in a very tight margin industry with extremely high customer service expectations and huge turnover rates, the absolute numbers are also very meaningful for this firm.

Specifically, the average profits rose 30% from preintervention to postintervention (9 months) for the financial condition and 36% for the nonfinancials; drive-through times decreased 19% for the financials and 25% for the nonfinancials; and turnover improved 13% for the financials and 10% for the nonfinancials. From an individual employee standpoint, on average, employees in the financial group made \$475 more than their counterpart employees in the nonfinancial treatment and control groups over the course of study. Obviously, the top management of this firm felt this money was well spent and indicated they would be using both the financial and nonfinancial interventions in all their restaurants.

Another contribution of the study is the finding that although the financial incentives initially had a greater impact than the nonfinancial incentives on profit and customer service, they became equally effective over time. This may shed some light on the missing organizational linkages discussed by Goodman (2000) indicating that nonfinancial incentives are viewed by employees as an attempt to increase the positive climate, and hence employees reciprocate with prosocial, citizenship behaviors (Settoon & Mossholder, 2002) and engagement (Harter et al., 2002) and even effectiveness at the unit level (Harter et al., 2002; Podsakoff & MacKenzie, 1994) and in the restaurant industry (Walz & Niehoff,

1996). Future research could use structural equation modeling to directly test if indeed such linkages exist.

For employee turnover, results over time were different and interesting. Although both the financial and nonfinancial incentives had a significant impact on turnover over time, the financial incentives had a significantly greater impact than the nonfinancial incentives over time. Equity theory (Adams, 1963) may offer one potential explanation for this finding. Equity theory suggests that one option when determining the equitability of a situation is to choose a comparative referent outside the organization but within the same industry. Thus, when financial incentives boosted these employees' pay to a level that was a wage higher than comparative referents in their labor market pool, this may have resulted in a lower turnover rate over time (see Sturman & Short, 2000; Trevor et al., 1997). These results also support efficiency wage theory (Akerlof & Yellen, 1986), which suggests that organizations that pay at higher levels than competitors will experience increases in efficiency at both the individual and the organizational levels because they are more able to retain their best performers (Brown, Sturman, & Simmering, 2003) as well as reduce employees' unproductive behavior (Akerlof & Yellen, 1986).

Another possible reason why the financial incentives had a greater impact on turnover than the nonfinancial incentives may have to do with organizational commitment. According to Hrebiniak and Alutto (1972), calculative commitment, or what Meyer and Allen (1991) called "continuance commitment," that occurs as a result of individual-organizational transactions may result in better retention of employees. That is, individuals may become bound to an organization because they have certain costs (e.g., seniority, or in this case a good bonus plan) invested in the organization and cannot "afford" to separate themselves from it. In this study, perhaps employees felt that once invested in the new financial benefits, they had less desire to leave.

Limitations of the Study

A constraint in our study was that the sample size (21 units) may have affected statistical power. This creates a dilemma, because in most cases of field research the researcher has little or no flexibility to simply increase the sample size to ensure adequate power (Sackett & Mullen, 1993). This is especially true when the sample involves business units rather than individuals. Thus, as Cook and Campbell (1976, 1979) have discussed, trade-offs between various forms of validity—namely, internal validity and statistical conclusion validity—must be illuminated. In light of the constraints of gaining a larger sample of unit-level data, we followed Goldstein's (1986) advice to "choose the most rigorous design possible and be aware of its limitations" (p. 144). In particular, we attempted to minimize the threats to the internal validity posed by the study's design.

Besides sample size, another potential limitation was that the nonfinancial intervention was, by its nature, less group focused than the financial condition. Given that analyses were conducted at the unit level, both interventions were designed and implemented as much as possible to also be at the group level so that levels were aligned. Although performance feedback graphs and group recognition memos were indeed delivered to the group as a whole, recognition-oriented verbal comments (most often overheard by

other members of the close proximity unit) still did not always reach the whole group.

One final limitation that should be noted pertains to the generalizability of results. The research was conducted in a very specific service setting: a fast-food chain. Although selected because of the need for such studies in this industry and the excellent controls available for the field experiment, this setting is somewhat unique and limits the generalizability of the findings to other service firms and nonservice sectors. In addition, the relatively young age of employees and the low complexity of their jobs are not representative of most organizations. Most of the workers are either in school and consider this to be a short-term job or they are less qualified for relatively more complex jobs in other companies.

Conclusions and Implications

This study's main contribution is twofold. Specifically, this is the first study to explore and demonstrate that both financial and nonfinancial incentive motivators contingently administered by trained managers significantly improved desirable business-unit outcomes (profitability, customer service, and employee turnover). This improvement in performance also appeared to be sustained over time, an issue also not previously examined to date in incentive motivation research. Second, although both had a significant impact, the financial incentive was found to have a greater initial impact than the nonfinancial incentive; over time, however, this discrepancy disappeared for profitability and customer service, but not for turnover. These results lead to several practical implications.

First, in a labor-intensive service setting, marked by simple, routine jobs and a low wage rate, contingent pay-for-performance behaviors may indeed have the strongest initial impact on unit performance outcomes. This may be explained by the existing theory that money is readily perceived as having a high instrumental value that makes putting forth extra effort worthwhile (Mitchell & Mickel, 1999; Stajkovic & Luthans, 2001). Also, the monetary incentive may have a long-run effect in terms of staying or leaving (i.e., turnover rates) because of comparative value for alternative employment (e.g., equity theory). In the case of the nonfinancials (social recognition and performance feedback), employees may initially respond positively because they seek feedback and desire attention and respect (Luthans & Stajkovic, 2000). There is also considerable evidence from reinforcement theory and research that such performance feedback, attention, and respect do not become satiated (Bandura, 1986; Komaki et al., 1996; Stajkovic & Luthans, 2001). Thus, although the nonfinancials may not have as great an initial impact as the pragmatics of monetary gain, as was found in this study, they seem to have a steady, sustainable impact.

Despite the growing body of literature supporting the use of social recognition and performance feedback to improve worker performance, these are still not as widely used today as they should be, given that there are minimal direct costs (e.g., training) to the organization. Also, from a practical standpoint, this study indicated that with very little training and follow-up, managers can indeed contingently administer at the unit level both financial and nonfinancial incentives to specific performance behaviors that have an impact on desired unit outcomes. By administering incentive motivators through a theoretically based yet application-driven

method, managers may be able to overcome some of the process issues typically associated with administering different types of incentive motivators.

Finally, this study helps to confirm what recent researchers have claimed (e.g., Huselid, 1995; Huselid, Jackson, & Schuler, 1997; Pfeffer, 1998)—that employee performance has implications for work-unit or organizational-level outcomes and that a firm's employees collectively provide a unique source of competitive advantage that is difficult to replicate. In this particular study, through manager training and the use of a behavioral performance management incentive system, managers were able to increase employees' key performance behaviors, which seemed to be critical to their work-unit outcomes. By systematically administering both group-level financial and nonfinancial incentive motivators, managers could better align the interests of employees with those of the organization. The results of this study not only reconfirm past research advocating the use of incentive motivators to increase individual performance but also show the positive impact of collective effort on work-unit performance over time.

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