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Store Manager Incentive Design and Retail Performance: An Exploratory Investigation

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Store managers perform multiple tasks within a store, and the way in which they are evaluated and rewarded for these tasks affects their behavior. Using empirical data from multiple stores of a consumer electronics retailer, Tweeter Home Entertainment Group, we highlight the extent to which store manager incentive design impacts store manager behavior and, consequently, retail performance. More specifically, we describe the shift in store manager behavior resulting from a change in incentives, which, in part, altered the importance of sales relative to inventory shrinkage in the store manager compensation plan. Store managers, following this change, directed less attention to the prevention of inventory shrinkage and more toward sales-generating activities and made different process choices within the store. We observed increases in the level of inventory shrinkage and sales within these stores. Controlling for alternative drivers of sales and inventory shrinkage, we find this change in incentive design to be associated with a profit improvement of 4.2% of sales. This work indicates that altering how store managers are compensated impacts retail performance. Moreover, our findings underscore the importance of balancing the rewards given for different types of activities in contexts where agents face multiple competing tasks.

Key words: incentives; multitasking agent; retail operations; inventory shrinkage; quasi-experimental; store management
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1. Introduction

Store managers play a critical role in retailing. Store employees report to them, they have decision rights over key operating expenses such as labor cost and inventory shrinkage, and they are expected to ensure that the store supports the overall mission of the company. Direct owner oversight of store managers is difficult given the number of different store locations in the average retail chain, combined with their geographic dispersion. For example, The Gap Inc., a casual apparel retailer, operates over 3,000 stores in five different countries. Store manager behavior in these stores is, for the most part, unobservable and uncontractible. Consequently, it is vital to design appropriate incentives to motivate store managers to execute activities critical to the performance of the retail store.

In retailing, both sales and shrinkage are common measures of store performance. Stores, understandably, track the level of sales from month to month and from one year to the next, often publicly reporting changes in comparable store sales (also known as comp store sales). *Comp store sales* measures the change in sales from the preceding year among stores open at least one year (Bell 1994). *Shrinkage* measures the discrepancy between the actual and recorded value of inventory. Although closely monitored by retail firms, shrinkage often is not publicly disclosed. Discrepancies between the actual and recorded value of inventory arise from employee theft, shoplifting, or inaccurate inventory accounting (Levy and Weitz 1998); increases in shrinkage often reflect poorly on the retailer's ability to manage its stores and employees. Moreover, retail executives perceive shrinkage as something controllable and, as one retailer put it, those involved in store operations are often just as adamant about its prevention as they would be regarding the prevention of theft from their own

home. In spite of this, shrinkage cost U.S. retailers more than an estimated $33 billion in 2002 (Hollinger and Langton 2004). One retailer, Federated Department Stores, found its inventory shrinkage plus its expenditure to prevent it,[1] cost over $250 million a year—the fifth largest expense in its portfolio (*Chain Store Age* 2001). Given the magnitude of these expenditures, it is not surprising that retailers monitor shrinkage along with sales.

Using data from a consumer electronics retailer, we quantify the impact of changing store manager incentives on these two measures of store performance, namely, sales and shrinkage. The change in store manager incentives that we examine can be described largely as a change in the relative importance of sales and shrinkage in the store manager's compensation. We argue that this incentive change resulted in the reported alteration of store manager behavior on two key dimensions: effort allocation and process choice. Store managers perform multiple tasks within a store, and the way in which they are evaluated and rewarded for these tasks affects their effort allocation. Store managers face a similar trade-off with respect to process choice. They can choose to establish store processes that influence the ease with which certain tasks can be executed. Both dimensions of behavior, effort allocation and process choice, are unobservable in this context, and thus both are influenced by the design of incentives. We suggest that the alteration in store manager incentives, and the resulting change in behavior, account for the observed difference in store performance.

Section 2 reviews the existing literature related to incentive design in general and retailing in particular. Section 3 presents our research setting followed by the development of our hypotheses in §4. Section 5 delineates our data collection process, provides descriptive statistics of our sample, and introduces our regression analysis. Section 6 discusses our empirical findings, followed by the managerial implications of this study in §7 and concluding remarks in §8.

[1] Shrinkage prevention techniques espoused in the popular press include, but are not limited to, employee training, inventory audits, closed-circuit television, loss-prevention inspection teams, revised store design, and item tagging. Each of these techniques comes at a cost to the organization.

2. Literature Review

The impact of incentives on the performance of individuals within organizations has been studied empirically by a number of researchers. Lazear (2000) and Knez and Simester (2001) show that the introduction of performance-based incentive plans can alter employee performance. Using data from an auto-glass installation company, Lazear (2000) examines the introduction of a piece-rate payment plan and the resulting change in individual employee output, measured by units installed per day per employee. He traces a 35% increase in output to this change in incentive and notes that the departure of less-productive workers (a selection effect) accounts for a proportion of this performance improvement. Similarly, Knez and Simester (2001) find that the introduction of a group-incentive scheme substantially improved performance at multiple airports run by Continental Airlines. For a detailed review of these and other studies on incentives, see Prendergast (1999) and Jenkins et al. (1998).

Empirical studies of the impact of incentives have been conducted in retail organizations as well. Eisenhardt (1985, 1988) investigates what factors (e.g., type of merchandise, job characteristics, store age, use of information system) predict the use of commission versus salary compensation for salespeople. Banker et al. (1996a) demonstrate that implementing a pay-for-performance incentive plan for sales consultants is associated with retail sales increases. Although Banker et al. (1996a) are unable to control for worker selection or shifts in effort allocation due to the use of organizational-level data, their work is critical in that it attempts to link firm performance (measured by retail sales) with compensation design. Furthermore, Banker et al. (1996b) extend this work by examining how various measures of sales, profitability, and customer service change with the implementation of an outcome-based performance plan used to support a customer service strategy. Included in their analysis are specific controls representing different contextual factors such as competition, customer profiles, and level of supervisory monitoring. Once again, Banker et al. (1996b) find support for productivity increases resulting from pay-for-performance compensation.

Focusing specifically on store management (i.e., store managers, assistant managers, and merchandising managers), Terborg and Ungson (1985) study the relationship between store performance and bonus pay. More specifically, they examine how sales volume and sales efficiency, measured as the ratio of annual sales volume less labor cost to total number of employees, differ depending on whether store management is paid a bonus for sales or a bonus for store profitability. As expected, when store management was paid a bonus for sales volume, bonuses were more highly correlated with sales volume than sales efficiency, and vice versa. Terborg and Ungson (1985, p. 74) emphasize the importance of designing a compensation system that "supports and facilitates the achievement of corporate goals."

Holmstrom and Milgrom (1991), hereafter H&M, argue that incentive pay can be used not only to motivate employees or agents (like store managers) to work in the interest of the firm, but also to allocate effort among several activities. H&M show how increasing the compensation of a multitasking agent (an employee performing multiple activities) for any one activity will result in reallocation of the agent's effort away from other activities. Several researchers have modified H&M's multitasking model in order to illustrate different aspects of incentive design. For instance, Feltham and Xie (1994) propose that the effort of a multitasking agent is allocated suboptimally across tasks when a performance measure does not accurately reflect the consequences of managerial action on the principal's expected payoff. Gabel and Sinclair-Desgagne (1993) discuss the optimal design of incentive contracts for multitasking agents choosing to allocate effort between two tasks, enhancing firm profit and reducing environmental risk.

Empirical verification of H&M's model has focused on the contracts offered under different conditions. Slade (1996) models the relationship between oil companies and service-station operators as a multitasking problem. Through empirical analysis, Slade (1996) found support for H&M's prediction that the degree of complementarity between one activity, the selling of gasoline, and another activity, the operation of a repair shop or a convenience store, determines the form of contract offered by oil companies to service-station operators. More recently, Cockburn et al. (1999) uses H&M's multitasking model to describe the importance of balancing the incentives for basic and applied research work in the pharmaceutical industry.

Our work differs from these studies in that we focus on the multitasking agent's (i.e., store manager's) behavior as a consequence of a change in the incentive contract offered to the agent. H&M argue that agents, when faced with a choice between multiple activities, will allocate effort based on the cost and rewards associated with each of those activities. Agents may also exhibit other behavioral responses to incentives in addition to effort allocation (Prendergast 1999). Within the context of retailing, we examine how store managers respond to changes in the rewards given to two distinct activities for which they are accountable, sales and shrinkage, and measure the impact on store profitability that these changes generate. Store managers can respond in two ways. First, they can shift their effort allocation among the tasks for which they are accountable. Second, they can choose to alter store processes to facilitate the execution of certain tasks. Neither the store manager's choice of effort allocation nor of process choice is observable in this context. Thus, store managers face a trade-off with respect to both effort allocation and process choice. Our findings, although not a precise test of H&M, illustrate how poorly designed contracts lead to both suboptimal allocation of effort and poor process choice, which in turn result in suboptimal firm performance.

3. Research Setting

We examine the impact of changing store manager incentives at Bryn Mawr Stereo (hereafter BMS), a chain of 13 consumer electronics stores in Pennsylvania, Maryland, New Jersey, and Delaware. Tweeter Home Entertainment Group (hereafter Tweeter),[2] a New England-based retail chain of comparable stores, acquired BMS in 1996 and changed store manager incentives immediately after the acquisition. We now give an overview of the products and customers served by both retailers, an account of store manager activities, and a comparison of the BMS and Tweeter store manager incentive plans. Section 5 details the

[2] Tweeter Home Entertainment Group was known as New England Audio prior to July 17, 1998.

data-gathering techniques used to inform our understanding of these two companies.

3.1. Customers and Products

Tweeter and BMS served the same customers, selling a variety of consumer electronics products falling into three categories: audio (e.g., receivers, amplifiers, speakers, car stereos, personal stereo devices), video (e.g., televisions, camcorders, DVD players), and accessories (e.g., cables, cassettes, batteries). Because Tweeter and BMS had been part of the same buying group, a group of small specialty retailers making collective purchases from suppliers in order to obtain favorable prices, Tweeter and BMS had identical product assortments. The buying group focused on purchasing products in the mid-to-high end of a manufacturer's range. Both BMS and Tweeter sold primarily to well-educated, affluent customers interested in quality products.

3.2. Store Manager Activities

Store managers were integral to the operation of these consumer electronics stores. Their role consisted of two key activities: sales generation and shrinkage control. Each store manager could choose the amount of effort that he or she allocated to each of these activities.

At Tweeter and BMS, sales-generating activities performed by store managers included promoting and closing customer sales. This often required educating the customer about the nature of the products. In addition, store managers helped to generate sales by directing the efforts of the salespeople who reported to them. Store managers motivated and trained salespeople to provide customer service and helped shelter salespeople from nonsales-oriented tasks such as operating the cash register, handling returns, receiving inventory, and monitoring shrinkage. Moreover, store managers also influenced store sales by affecting the display of merchandise at the store (e.g., permitting items that required hands-on sampling, like personal stereo devices, to be accessible for customers to try out).

Store managers also played an important role in affecting store operating expenses. One notable expense under the store manager's control at BMS and Tweeter stores was shrinkage. As with sales, store managers could affect shrinkage by directing the efforts of salespeople and by their own actions. For example, store managers could direct salespeople to more closely monitor colleagues and customers in order to identify shoplifters. Store managers could also monitor inventory receipts carefully and change the display of merchandise, placing readily stolen items like batteries, personal stereo devices, or cables behind lock and key rather than on open shelves where customers could easily browse these products.

Although labor is the largest store-operating expense, it is not under the control of BMS or Tweeter store managers—store employees are paid purely on commission. Although store managers at BMS and Tweeter are unable to substantially influence labor costs, it is easy to visualize how, when store employees are salaried, store managers could affect labor costs through scheduling of store employees. For example, when store employees are salaried, store managers can ensure that more salaried employees are scheduled to work during times of high customer traffic or when inventory shipments in need of stocking arrive at the store. Failing to coordinate the schedule of salaried employees could result in multiple employees on the sales floor with limited work to complete. The retailer then incurs the cost of these employees but derives little benefit from their time at work.

3.3. Store Manager Incentive Plans

In return for their effort in generating sales and controlling shrinkage, BMS and Tweeter offered store managers performance-based compensation contracts. The form of these performance-based contracts differed substantially between the two companies. The primary difference, described in detail below, was the degree to which the store manager was penalized for shrinkage relative to being rewarded for sales.

The BMS contract, before Tweeter's acquisition, included both a reward for sales and a penalty for shrinkage. In particular, BMS store managers were offered a bonus for generating sales that ranged from 0.2% to 5% of the sales dollars above store-specific targets. These same store managers were penalized one dollar of pay for every dollar of shrinkage at their store. This penalty resulted in an extreme concern with shrinkage control at BMS stores. Although such an incentive design seems uncommon, it is often used in retailing for individuals controlling cash receipts.

Should the expected value of cash not amount to the actual on-hand value, retail employees are often held accountable for the difference.

In contrast to the BMS store manager incentive plan, store managers were penalized less for shrinkage under the Tweeter incentive plan. Tweeter rewarded its store managers a percentage, as much as 20%, of additional store-operating income (SOI), which is defined as store sales minus both the cost of goods sold and inventory shrinkage. Thus, the bonus of a Tweeter store manager would be reduced by, at most, \$20 for having an additional \$100 in store shrinkage (=20% of \$100). This amounted to \$80 less than a store manager under the old BMS incentive plan, whose bonus would be reduced by the entire \$100 shrinkage amount.

The change in sales incentives was less dramatic than the simultaneous change in shrinkage incentives. For a store manager obtaining the average bonus (2.6% of sales for BMS, 10% of SOI for Tweeter), an additional dollar of sales would result in a bonus of \$0.026 under the BMS plan, roughly similar to that obtained under the Tweeter plan, \$0.036 (=\$1 × 10% × 36%[3]). On the other hand, the penalty for an additional dollar of shrinkage decreased substantially.

In the following section, we reveal how retail performance changed as BMS store managers went from being rewarded by an incentive system that emphasized shrinkage, the BMS plan, to one that placed less emphasis on it, the Tweeter plan. We show that this change is associated with a positive difference in performance that was both statistically and economically significant. In fact, we show that the changes in store manager incentives resulted in increasing store profits by an estimated 4.2% of sales.

4. Hypothesis Development

Multitasking agents, such as store managers, will allocate constrained effort to different activities based on rewards that accrue from, and the cost of, pursuing each of these activities. More specifically, H&M demonstrate that the amount of effort allocated to a particular activity by a multitasking agent is a function of the reward associated with that activity, as well as the rewards associated with other activities for which the agent is accountable. Changing the relative importance of one store manager activity to another in a performance-based incentive plan should induce a shift in the store managers' allocation of effort.

At BMS the change in store manager incentives resulted in shrinkage being given less emphasis in the bonus plan. We therefore expect store managers to divert some of the effort previously allocated to reducing shrinkage to other activities, including generating sales. We posit that store managers that once emphasized shrinkage control at the expense of generating sales will allocate less effort toward activities that control shrinkage and more to those that generate sales. Although increases in either sales or shrinkage alone could be explained by a change in the absolute level of incentive pay, a concurrent increase in both sales and shrinkage suggests a change in the relative importance of both measures of store performance in the store manager's compensation plan.

This expectation stems from the belief that the two components of store manager effort, sales generation and shrinkage control, are substitutes rather than complements. That is, according to H&M, the marginal cost of a unit of effort directed toward one activity (e.g., shrink prevention) is higher when the multitasking agent (e.g., the store manager) is also allocating more effort to the other activity (e.g., sales generation). Although this shift in effort allocation is unobservable, the outcome is not. Thus, we expect the change in store manager incentive design to induce a shift in store manager effort that is observable through increases in both sales and shrinkage.

In addition to changes in effort allocation, agents may have other behavioral responses to compensation schemes. When faced with a change in incentive contract, agents may choose to alter their activities in order to benefit from the new compensation scheme (Prendergast 1999). Store managers facing a change in the relative importance of one activity to another in their performance-based incentive plan may make different process choices. For example, under the new incentive contract, a store manager may choose to alter store processes to facilitate the execution of sales activities but no longer facilitate the prevention of shrinkage. Such activities, described in detail in §3.2, include locking up merchandise, keeping the store

[3] This is Tweeter's gross margin percentage. See §6.3 for additional details on the source of this number.

closed during periods of low staffing, and deciding not to open additional cash registers to expedite customer service when inventory is being delivered.

In sum, store sales and shrinkage should differ when store managers are rewarded according to the BMS plan or the Tweeter plan, as hypothesized below. When store managers are rewarded according to the BMS incentive plan, stores have lower levels of sales than when store managers are rewarded under the Tweeter incentive plan. In other words, there is a positive association between the change in store manager incentive plan and store sales. Reducing the penalty for shrinkage could cause store managers to shift their effort allocated from shrink prevention to sales generation and to make different process choices influencing the generation of sales in their stores.

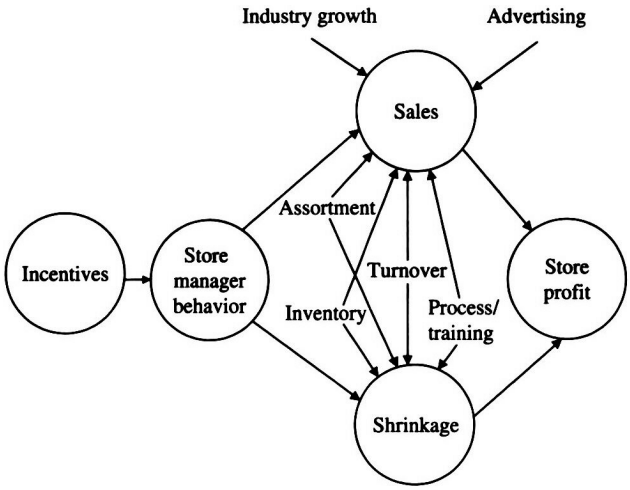
Hypothesis 1 (H1). *Store sales is positively correlated with the change in store manager incentive plan.*

When store managers are rewarded according to the BMS incentive plan, stores have lower levels of shrinkage than when the store managers are rewarded under the Tweeter incentive plan. In other words, we expect a positive association between the change in store manager incentive plan and store shrinkage. Reducing the penalty for shrinkage increases the observed level of shrinkage as store managers exert less effort and make different process choices influencing the prevention of shrinkage in their stores.

Hypothesis 2 (H2). *Store shrinkage is positively correlated with the change in store manager incentive plan.*

Attributing an increase in store sales and shrinkage to a change in incentive design requires that we control for other factors that influence store sales and shrinkage. Figure 1 illustrates the variables that could plausibly account for differences in the retail performance metrics, sales and shrinkage. These variables include changes in retail sales for the consumer electronics industry, store inventory levels, and firm advertising expenditure. We would expect sales to increase with overall growth in the consumer electronics retail industry and with additional store inventory as stores experience fewer stockouts (Wolfe 1968). Although evidence supporting a relationship between sales and advertising is inconclusive (Lodish et al. 1995, Dekimpe and Hanssens 1999, Gijsbrechts et al. 2003), we do control for advertising expenditure.

Figure 1 Understanding the Drivers of Sales and Shrinkage at BMS and Tweeter



The factors influencing inventory shrinkage are far less developed in the existing literature. However, one could imagine that the availability of inventory in the store could also impact store shrinkage levels. Moreover, other aspects of store operations such as employee turnover (Lucas 1985), pricing policy, and product assortment might impact both sales and shrinkage. Section 5 details our analytical strategy as well as the data we collected to test our hypotheses.

5. Empirical Analysis

The change in ownership of the BMS stores presented us with an opportunity to observe monthly sales, monthly shrinkage, and store manager behavior in BMS stores both before and after the implementation of a new store manager incentive plan. Viewing the store manager as a multitasking agent who allocates effort to different activities based on the rewards that accrue from, and the cost of pursuing, each of these activities, and who makes process choices based on the rewards that accrue from, and the cost of executing, such choices, we expect store manager behavior to differ depending on the incentive policy in place. Our objective is to isolate the effect that changing store manager incentives had on retail performance and test the hypotheses detailed in §4. We do so not only by controlling for variables such as inventory levels, advertising, and industry retail sales growth, but also by determining that, beyond the reward

given to store managers for sales and shrinkage activities, Tweeter ownership did not dramatically alter other aspects of store operations such as training or employee turnover, or aspects of store identity such as name or location, during the period under study.

Our methodological approach can be classified as "quasi-experimental" in that we have a series of observations for periods of time both prior to and subsequent to an event of interest (i.e., change in incentive design; Campbell and Ross 1968). Quasi-experimental research designs differ from true experiments in that the researcher does not have the ability to randomly assign study participants (i.e., store managers) to different experimental treatments and to maintain a control group for comparison. Nevertheless, quasi-experimental designs are appropriate for the test of well-formulated theory (Yin 1994). After observing a particular phenomenon in its natural context, we then match the data collected in the field to alternative theoretical explanations of our observations (Yin 1994).

5.1. Data Collection and Descriptive Statistics

We used multiple data-gathering techniques, including the collection of archival company records, newspaper clippings, annual reports, and other publicly available documents pertaining to our research site during the period of study (Yin 1994). In addition, we conducted nearly 150 hours of field work during which we met with on-site personnel familiar with both BMS and Tweeter, including store, merchandising, operations, finance, and regional sales management. It is from these open-ended interviews that we were able to recreate the operating environment (see §3) and characterize the behavior of store managers during the period of study. The use of multiple sources of evidence in field research facilitates the process of triangulation, where each source helps to corroborate the hypothesized explanation of an observed phenomenon (Yin 1994).

The relevant data gathered from the firm's sales and operating records include monthly sales (SALES), shrinkage (SHRINK), advertising (AD), and inventory dollars (INVEN) for 12 different stores. We collected data for 12 of the 13 stores in the chain because data from the preacquisition period was missing for one store. Both SHRINK and INVEN were measured at vendor cost rather than retail price. The period of interest ranged from 11 months prior to Tweeter's acquisition (May 1995–April 1996) to 11 months after (May 1996–April 1997). The sample does not include any data for the month of December because neither shrinkage nor inventory was counted during that month—it is common for retailers not to perform physical counts of inventory during the peak-sales month. We also obtained monthly sales data for all stores under SIC code 5731 (i.e., U.S. Radio and Television) from the U.S. Department of Commerce, Bureau of the Census Office (RETAIL). See Table 1 for a definition of each variable. These data allow us to test our hypotheses while controlling for industry trends, inventory levels, and advertising expenditure.

Table 1 Summary of Variable Names and Definitions Used for Empirical Analysis

Variable name	Variable definition
SALES	Monthly store sales in U.S. dollars
SHRINK	Monthly store shrinkage in U.S. dollars
TWTR	TWTR = 0 under BMS incentive plan, TWTR = 1 under Tweeter incentive plan
INVEN	Monthly store inventory in U.S. dollars
RETAIL	U.S. retail sales of electronics industry stores with SIC code 5731 (Radio & Television Stores), in million U.S. dollars
AD	Monthly advertising expenditure in U.S. dollars
S01–S12	Store dummy variables, one for each of 12 stores

Notes. Under the TWTR incentive plan store managers were rewarded a percentage of additional SOI. Under the BMS incentive plan store managers received a bonus for additional sales and a dollar-for-dollar reduction in pay for shrinkage.

Preliminary analyses show that both sales and shrinkage increased after Tweeter implemented the change in store manager incentives. When store managers were rewarded as a percentage of sales and a dollar-for-dollar reduction for shrinkage, monthly sales averaged \$155,890, while monthly shrinkage averaged \$123 (Table 2).

Alternatively, when store managers were rewarded based on SOI, monthly sales averaged \$189,867, while monthly shrinkage averaged \$676, an increase of 22% and 450%, respectively (Table 2). Shrinkage levels increased at each and every store following the acquisition, while sales increased at all but two stores.

Other aspects of store operations besides those noted above could impact sales or shrinkage (see Figure 1). We rely on the qualitative data collected throughout our study in order to control for these

Table 2 Descriptive Sample Characteristics Before and After the Change in Incentive Plan

	Sample characteristics before change		Sample characteristics after change	
Variable	Mean	Standard deviation	Mean	Standard deviation
SALES	155,890	77,577	189,867	81,948
SHRINK	123	707	676	1,444
INVEN	311,900	92,475	350,642	81,747
RETAIL	2,601	249	2,624	247
AD	8,964	9,202	20,062	7,333

factors. What follows is an account of our qualitative data pertaining to employee turnover, product pricing, and product assortment at these retail stores.

5.2. Employee Turnover

Employee turnover during the period under study was minimal. All but one of the BMS store managers, according to our interviews, remained in their positions under Tweeter ownership. Similarly, no turnover occurred in the commissioned sales staff during this period. Even the store manager's reporting structure remained intact and staffed by BMS employees. Tweeter's acquisition was not one that involved the radical overhaul of key staff positions. Such continuity in personnel is critical to our analysis. Any major shifts in personnel at multiple levels of the organization would not allow us to determine if the observed differences in performance measures, i.e., sales and shrinkage, were the result of the incentive change or merely differences in individual ability at store management, sales, or operational control (Hise et al. 1983, Lusch and Serpkenci 1990).

5.3. Pricing Policies and Product Assortment

Similarly, there was no change in the pricing policies or the product assortment at the stores. As previously noted, BMS and Tweeter were part of the same buying group, The Progressive Retailers Organization. Thus, both had access to the same manufacturers and obtained their products for the same price. Our interviews revealed that BMS's and Tweeter's product assortments, defined as the set of products carried in each store (Kök et al. 2006), were virtually identical and that retail prices did not change substantially after the acquisition. In fact, both BMS and Tweeter had price guarantees in place during our period of analysis such that the store would match the price of any other consumer electronics retailer. Moreover, none of the six merchants we interviewed was able to identify specific ways in which pricing or assortment changed after the acquisition. The chief merchant specifically stated that any changes in assortment and pricing were minor and not a critical factor in explaining the changes to sales and shrinkage.

5.4. Regression Analysis

To test our hypotheses, we fit a series of nested, fixed-effects regression models. One series of regression models tests the hypothesized relationship between monthly store sales (SALES) and store manager incentives (TWTR). TWTR is a dichotomous variable because the incentives at each store were changed simultaneously. TWTR is set equal to zero for those months before the incentive change and one for those months after the incentive change. Had we been able to design the experiment on our own, we would have considered changing incentives gradually over time at a number of stores while keeping the remaining stores as is, to act as our comparative control group. Given that the incentive change happened simultaneously for all stores observed, we rely on this dichotomous variable, TWTR, to accurately characterize the onetime step-change in store manager incentives that occurred in the field.

As specified below, the variables SALES, INVEN, RETAIL, and AD were transformed by taking their natural log and were renamed, respectively, LNSALES, LNINVEN, LNRETAIL, and LNAD.

$$LNSALES_{st} = B_s + B_{13}TWTR_t + B_{14}LNRETAIL_t + B_{15}LNINVEN_{st} + B_{16}LNAD_t \qquad s = 1\text{–}12,\ t = 1\text{–}22,$$

where s represents each store and t each month in our sample. The primary reason for transforming our variables in this way was to linearize the regression model (Kleinbaum et al. 1998). Analysis of the raw data suggests a nonlinear relationship between the outcome variable, SALES, and each of the predictors. We found the log transformation to be the most effective at inducing linearity and such transformations are commonly used when assessing the drivers of retail sales (see, for example, Montgomery 1997, Hoch

et al. 1995, Blattberg and Wisniewski 1989). Moreover, several of the variables, in their raw form, have standard deviations that are large relative to their means. Afifi and Clark (1997) recommend transforming such variables to induce normality prior to model estimation.

The addition of store effects, B_s, enables us to control for differences among stores (e.g., store size, layout, and location) and store personnel. Using industry retail sales data as a control has the added benefit of controlling not only for trends in consumer electronics sales but also for expected seasonality (i.e., month-to-month variation in sales). Because of missing data, advertising expenditure for some months had to be estimated by us in collaboration with BMS and Tweeter managers. See the online appendix for robustness checks on these estimates.[4]

The other set of nested, fixed-effects regression models tests the hypothesized relationship between store shrinkage (SHRINK) and store manager incentives (TWTR). The control variables in these models include inventory level and store differences as specified in the fixed-effects model below. For purposes of this analysis of shrinkage, we measured inventory dollars in thousands of dollars and defined a new variable called ADJ_INVEN.

$$SHRINK_{st} = B_s + B_{13}TWTR_t + B_{14}ADJ\_INVEN_{st}$$
$$s = 1\text{–}12,\ t = 1\text{–}22,$$

where s represents each store and t each month in our sample.

We did not use logarithmic variables to model shrinkage for two reasons. First, due to the limited academic research on shrinkage, we did not have substantive reasons to favor multiplicative relations between shrinkage and our control or explanatory variables. Second, a logarithmic model was difficult to implement because shrinkage was zero during many months at different stores. We did, however, regress the natural log of shrinkage, where zero or negative shrinkage was equated to a small number, onto the natural log of inventory, the store dummies, and TWTR, and we found results consistent with those presented in §6.2. Specifically, TWTR is statistically significant ($t = 4.24$, $p < 0.0001$), and its coefficient is positive.

We estimate each of our models using Proc Mixed in SAS v. 9.1. We evaluate the impact of TWTR on the outcome variables (LNSALES or SHRINK) using maximum likelihood estimation methods, as is recommended for panel data (Greene 2000). To account for the existence of serial autocorrelation in both the sales and shrinkage models, we fit a first-order autoregressive covariance structure. Higher-order autoregression was deemed unnecessary because residuals from the current period were only strongly correlated with residuals from the adjacent period. We tested up to a lag of six periods. We selected a final fitted model after conducting model comparisons using a generalized linear hypothesis test and determined that our findings from the final model predicting sales and shrinkage were robust to the removal of aberrant data points.

6. Results

We expect monthly store sales and monthly store shrinkage to differ depending on whether store managers are rewarded according to the BMS or Tweeter incentive plan. In particular, TWTR should be positively associated with both LNSALES and SHRINK—controlling for all other factors (i.e., monthly store sales are expected to be greater after the change in incentive than before, as would monthly store shrinkage). See DeHoratius and Raman (2006, online appendix) for alternative model specifications to, and robustness checks for, the models described below.

6.1. Impact of Incentive Change on Sales

Model comparisons indicate that the model including the effect of individual stores, industry retail sales, and inventory (Model 4, Table 3) is the best-fitting model for understanding the effect of incentives on monthly sales ($\Delta\chi > \Delta\chi_{\text{crit; df=1, }\alpha=0.05}$: $33.40 > 3.84$). In this model, TWTR is statistically significant ($t = 3.40$, $p = 0.0009$) and positively associated with changes in sales (LNSALES) after controlling for store effects, increases in inventory (LNINVEN), and consumer electronics industry sales (LNRETAIL).

[4] An online appendix to this paper is available on the *Manufacturing & Service Operations Management* website (http://msom.pubs.informs.org/ecompanion.html.)

Table 3 The Impact of Incentive System and Select Independent Variables, Controlling for Store Effects, on the Natural Log of Sales ($n = 264$)

	Parameter estimate (standard error)				
	Model 1	Model 2	Model 3	Model 4	Model 5
Fixed effects					
S01–S12	***	***	***	***	***
TWTR		0.24*** (0.04)	0.20*** (0.03)	0.12*** (0.03)	0.11*** (0.03)
LNRETAIL			1.58*** (0.13)	1.49*** (0.13)	1.48*** (0.13)
LNINVEN				0.72*** (0.11)	0.71*** (0.11)
LNAD					0.002 (0.003)
−2LL (df)	−0.31 (12)	−26.37 (13)	−143.91 (14)	−177.30 (15)	−177.71 (16)
Comparison model		Model 1	Model 2	Model 3	Model 4
Δ−2LL (Δdf)		26.06 (1)	117.54 (1)	33.40 (1)	0.41 (1)
p-value		$p < 0.001$	$p < 0.001$	$p < 0.001$	$p > 0.50$

Notes. We report the significance of the store vector obtained from a general linear hypothesis test (H_0: the average store effect is zero).
***$p < 0.001$.

Although our selected model does not include LNAD, it is important to note that in Model 5, Table 3, LNAD is not a significant predictor ($t = 0.64$, $p = 0.52$) of LNSALES. This finding is consistent with prior studies in marketing (e.g., see Hanssens et al. 1990). Throughout our model comparison process, we found no evidence of serious multicollinearity. For each model, we examined the variance inflation factors for the independent variables predicting sales. Variance inflation factors greater than 10 suggest that serious multicollinearity effects exist (Kennedy 2001). We observed variation inflation factors ranging from 1.1 to 5.4. For completeness, we remove LNINVEN, the variable with the greatest variance inflation factor (5.4), to assess whether the failure to find a significant relationship between LNAD and LNSALES might be due to multicollinearity. We find LNAD remains insignificant even upon the removal of LNINVEN.

Interpreting our results, we determine that when store managers are rewarded according to the Tweeter incentive plan rather than the BMS incentive plan, sales increase an estimated 13% ($(\exp(B_{13})) = (\exp(0.12)) = 1.13$), on average. This is a 13% difference generated by the Tweeter store manager incentive change even after differences in the consumer electronics industry retail sales, available inventory, and store differences are taken into account. Few changes in retailing can cause a 13% sales increase (an increase in comp store sales typically averaged 1% during some period for consumer electronics stores). We argue that this change in incentives, a change that reduced the emphasis on shrink prevention in the store manager compensation plan, substantially increased sales (H1: confirmed).

6.2. Impact of Incentive Change on Shrinkage

Model comparisons allow us to conclude that Model 3, Table 4, is the most effective of all the fitted models in predicting our outcome variable, monthly shrinkage ($\Delta\chi > \Delta\chi_{\text{crit; df=1, } \alpha=0.05}$: $6.65 > 3.84$). Model 3 describes the impact that the incentive change had on monthly shrinkage after controlling for store differences and variations in inventory levels. In this model, TWTR is statistically significant ($t = 5.60$, $p < 0.001$) and positively associated with changes

Table 4 The Impact of Incentive System and Select Independent Variables, Controlling for Store Effects, on Shrinkage ($n = 264$)

	Parameter estimate (standard error)		
	Model 1	Model 2	Model 3
Fixed effects			
S01–S12	***		
TWTR		553.31*** (112.07)	784.56*** (140.14)
ADJ_INVEN			1.60** (0.61)
−2LL (df)	4,465.63 (12)	4,443.37 (13)	4,436.72 (14)
Comparison model		Model 1	Model 2
Δ−2LL (Δdf)		22.26 (1)	6.65 (1)
p-value		$p < 0.001$	$p < 0.01$

Notes. We report the significance of store vector obtained from a general linear hypothesis test (H_0: the average store effect is zero).
**$p < 0.01$, ***$p < 0.001$.

in shrinkage after controlling for store effects and increases in inventory (ADJ_INVEN). We found no evidence of serious multicollinearity on examination of the variance inflation factors for the independent variables predicting shrinkage. We observed variance inflation factors ranging from 1.8 to 5.8. Problematic collinearity arises, as noted in §6.1, when variance inflation factors exceed 10 (Kennedy 2001).

Consequently, whether a store manager was rewarded according to the BMS or Tweeter incentive plan accounts for an estimated difference, on average, of $785 in monthly inventory shrinkage, after controlling for store differences and the increase in inventory. Clearly, more store shrinkage existed in Tweeter when store manager bonuses were no longer deducted dollar for dollar in store shrinkage. This change in incentives, a change that reduced the emphasis on shrink prevention in the store manager compensation plan, substantially increased store shrinkage (H2: confirmed).

6.3. Supporting Field Evidence

The linkage between incentives and performance asserted above is supported by field observations of managerial behavior. We did not directly observe store manager behavior before the incentive change, but relied on the accounts of others familiar with both the BMS and TWTR incentive regime to describe any observed changes. Interviewees consistently claimed that because the penalty for shrinkage was reduced, store managers not only shifted their effort allocation away from activities that prevented shrinkage toward activities that increased sales, but also chose to alter store processes to facilitate sales activities. For example, BMS store managers were described as creating a "defensive" (i.e., theft-preventing) store environment. They would lock up any inventory that could be stolen readily, which included product categories such as accessories (e.g., cassettes, batteries, and cables), personal stereo devices, and camcorders. However, for those items it was also true that allowing consumers to touch and feel the product might increase sales. Moreover, executives recounted BMS store managers avoiding selling merchandise on display in cases for which they had lost the keys. Although such displays make products inaccessible to thieves and helped control shrinkage, it also made the product inaccessible to potential customers, thus creating an atmosphere of "sales prevention," according to former BMS and current Tweeter executives. Such concern over shrinkage seemed to influence other operational decisions made by store managers. For instance, BMS store managers often refused to open a store for business should too few salespeople be on hand during a particular time period. Furthermore, BMS store managers monitored the product delivery process by personally reconciling shipments between the store and the warehouse even if this meant leaving customers unserved. The former BMS operations manager and current Tweeter director of operations summed up the atmosphere at BMS succinctly: "We had control of everything."

However, under the Tweeter incentive plan, store managers became business managers who were "out on the sales floor watching what was going on and assisting their salespeople in making sales, making sure the merchandising was right, and the operational stuff was sound." Store managers became "sales motivators" and could be seen on the sales floor more often. Products were no longer kept in locked displays, but rather out on the floor where individual customers could handle them. Additionally, Tweeter store managers did not insist on personally monitoring receipts at the store when their presence was required for sales assistance.

This reported change in store manager behavior after the implementation of the Tweeter incentive plan lends support to our analytical findings. The way in which store managers are rewarded for the set of activities that control shrinkage and the set of activities that generate sales is associated with variations in sales and shrinkage. We argue that this variation in sales and shrinkage is the direct result of the transfer of effort away from shrink-prevention activities, given the reduction in the penalty for shrinkage, and toward creating a positive sales environment within the store with respect to both effort allocation and process choice.

The observed change in behavior among store managers is consistent with the assumption of self-interested agents. If we view the principal as offering either a punitive (BMS) or a rewarding (TWTR) incentive contract, an agent or store manager maximizing her self-interest would choose shrink-prevention

Table 5 Payoff to Store Managers

	Behavior	
Contract type	Shrink prevention	Sales promotion
BMS	$3,930	$3,672
TWTR	$5,600	$6,251

behavior under the BMS regime and sales promotion behavior under the TWTR regime. We define shrink-prevention behavior as behavior that results in preacquisition sales and shrinkage, namely $155,890 and $123, respectively (Table 2). Sales promotion behavior is defined as behavior that results in postacquisition sales and shrinkage after controlling for other drivers of sales and shrinkage, namely a 13% increase in preacquisition sales ($176,155) and a $785 increase in shrinkage ($908). Table 5 summarizes the monthly payoff to store managers, given the type of contract offered and the behavior chosen.

To derive these numbers we made the following assumptions. First, we assume that under the BMS contract store managers receive an average sales bonus (e.g., 2.6%). According to our interviews, store managers under the BMS contract typically received bonuses below this average. Recall that store managers under a BMS contract received a percentage of sales and a dollar-for-dollar reduction in pay for shrinkage. Under the TWTR contract, we assume store managers receive a bonus on store-operating income of 10%, also average. To obtain an estimate of SOI, we multiply store sales with a 36% gross margin rate and then subtract store shrinkage. Tweeter requested that we not disclose its gross margin rate when it was privately owned. Consequently, we derived our gross margin estimate by averaging the gross margin numbers disclosed in its 1998, 1999, and 2001 annual reports after the company had gone public.

In sum, if offered the BMS contract, it is in the best interest of store managers to behave as shrink preventers because their reward for doing so ($3,930) is greater than it is if they elect to be sales promoters ($3,672). If offered the TWTR contract, it is in the best interest of store managers to behave as sales promoters because the reward for doing so ($6,251) is greater than the $5,600 they would obtain by behaving as shrink preventers. This predicted shift in behavior given the payoffs under each contract is exactly the shift in behavior observed.

6.4. Rival Explanations

Because this incentive change occurred in conjunction with a change in firm ownership, one could argue that the observed increase in sales stemmed from the new interest customers may have had in the store after this takeover. However, Tweeter chose not to advertise the change in ownership at BMS stores for fear of alienating existing customers. These newly acquired stores advertised under the BMS name and, during the period of our study, no significant store remodeling took place. Thus, it seems unlikely that the change in sales is associated with the advertising of new ownership. However, while we did control for advertising expenditure, we were unable to control for changes in the advertising media used due to the lack of detailed records. We do know that BMS primarily used newspaper inserts while Tweeter relied on radio advertising. The extent to which this change in advertising media influenced sales during this period is unknown. That said, not one of the interviewees questioned about this case mentioned advertising as the primary explanation for the observed change in store manager behavior and the measured changes in both store sales and shrinkage.

7. Managerial Implications

Reducing inventory shrinkage is a key objective for many retailers, and store managers are often asked to target a shrink number that is a certain percentage of sales. Flanagan and Kahn (1989) warn that focusing too much attention on shrink prevention could be suboptimal for the firm because prevention techniques (e.g., hiring a detective) are costly. They argue that a profit-maximizing firm will not want to take steps to reduce shoplifting, a form of shrinkage, if the added costs incurred in doing so exceed the generated savings. We show that if store manager compensation is linked to shrinkage in addition to sales, it is not only the cost of shrink prevention that matters, but also the potential for lost sales. In the sections that follow, we quantify the impact that altering the penalty for shrinkage among store managers had at Tweeter and highlight the implications of our findings to retailers at large.

7.1. Impact at Tweeter

In sum, our findings indicate that as a result of the change in incentive plan, both store sales and shrinkage increased. On average, sales increased by approximately 13%, controlling for store differences and changes in inventory, advertising expenditure, and U.S. retail sales of consumer electronics. Given that monthly store sales averaged $155,890 prior to the change in incentives, a predicted 13% increase in sales, on average, associated with the change in incentives, amounts to nearly $20,266 more sales per month per store. This dramatic increase in sales was accompanied by only a slight increase in the predicted monthly shrinkage, roughly $785, controlling for store differences and the addition of store inventory. Hence, using a gross margin rate[5] of 36%, average monthly store profit increased[6] by roughly $6,511 as a direct result of the change in incentive. Across the entire chain of 12 stores and over the entire year, we estimate that the incentive change improved profits by approximately $938,000,[7] or 4.2% of annual preacquisition sales. By ascertaining that store manager activities were not rewarded appropriately, Tweeter was able to dramatically improve its retail performance. The chain was better off when store managers were rewarded with a percentage of additional SOI rather than a percentage of additional sales with a dollar-for-dollar penalty for shrinkage.

These findings are among the first to link incentives to retail profit and to quantify the impact of store manager incentives on retail performance. We conclude by generalizing from this study of Tweeter and by arguing its importance to retail organizations and academics alike.

7.2. Implications for Other Retailers

Retail executives from the more than 40 retailers we have studied during the last few years agree on the importance of performance-based store manager incentives, but struggle with the optimal design for these incentives. Our research underscores the importance of using a multitasking agent framework to evaluate incentive design. Store managers perform multiple tasks and are responsible for multiple performance measures. Consequently, it is important that firms set appropriate weights on different performance measures when designing incentives for store managers.

Incentives need to be designed differently in different retail contexts, based on the relative importance of select performance measures to the firm's profitability and the store manager's ability to impact each of these performance measures. Consider, for example, the reward for incremental sales. The relative importance of sales to profitability differs among retailers because of differences in their relative gross margins. For example, a high-end jewelry retailer like Tiffany & Co. (hereafter Tiffany) has gross margin in excess of 50% of sales, while Price/Costco Wholesale Corporation, a warehouse club, has a gross margin of roughly 11%. In other words, $100 of additional sales adds $50 to Tiffany's gross profits, whereas it adds only $11 to that of Price/Costco. Understandably, all else remaining equal, a chain like Tiffany should reward store managers more for generating sales than a chain with lower gross margins. In addition, retailers with high gross margins should be willing to tolerate more shrinkage if effort can be effectively shifted from shrink prevention to sales generation. Using the example above, Price/Costco could allow for only one dollar in shrinkage for every 10 dollars of sales, while Tiffany could allow five dollars of shrinkage for this amount of sales. Similarly, a store manager's ability to improve sales and control expenses can vary substantially from one retail context to another. Thus, we would expect the relative emphasis on sales in the store manager's reward to differ in different retail contexts.

Identifying store manager incentives that are set suboptimally and altering them suitably can result in tremendous gains. As evidence of this, we note that BMS had set incentives suboptimally for a long time by placing much greater emphasis on shrinkage over sales. Tweeter was able to improve annual profits by an estimated 4.2% of sales at BMS by changing these incentives so that they were aligned with the ability

[5] See §6.3 for the source of this gross margin percentage.

[6] We calculate the increase in average monthly store profit by determining the additional monthly gross margin dollars generated and subtracting the additional monthly shrinkage dollars lost under the Tweeter store manager incentive plan ($0.36 \times \$20{,}266 - \$785) \sim \$6{,}511$.

[7] ($6,511 per month per store) × (12 months/yr) × (12 stores) ~ $938,000.

of the store manager to impact sales and shrinkage and the relative importance of each measure to firm profitability.

Moreover, Tweeter has successfully achieved similar results at other retailers acquired since BMS. Once again, incentives played a key role in changing behavior and performance at these newly acquired retailers. For example, at another chain acquired by Tweeter, salespeople had been rewarded based on sales revenue rather than on gross margin or store-operating profit. Not surprisingly, high-price items (e.g., large-screen TVs) that often had low gross margins received more attention and accounted for a relatively large portion of this chain's sales. Managers even allowed salespeople to negotiate price on such items in order to achieve store sales goals. By changing the incentives at these stores to emphasize operating profit, Tweeter was able to change the sales mix at these stores considerably. High gross margin items such as receivers and amplifiers increased from 27% to more than 30% of the overall business. Despite the fact that comp store sales decreased following the acquisition, this focus on profitable sales ensured that the contribution that each store made to the retailer's profit increased. We have anecdotal evidence that retailers in other segments face similar challenges in designing incentives for store managers. At one Texas-based convenience store chain, store managers were paid according to seniority rather than according to the performance of their stores. Recently, the incentives were changed so store managers received a percentage of store profit. In doing so, the chain found that not only were expenses controlled more effectively, but that sales also increased substantially.

Retailers often seem to forget that they are dealing with multitasking agents in their stores. Consequently, when faced with a situation where they want to affect one performance measure, retailers may change the incentives associated with that measure alone. They often fail to note that changing the incentives associated with one performance measure without regard to others might substantially hurt other performance measures. Two examples serve to illustrate this notion. In spite of the dramatic performance achieved after the acquisition of BMS, some Tweeter managers were uncomfortable with the higher levels of store shrinkage, and hence advocated a return to tighter control. Some of them even advocated reverting to the BMS incentive system, where store managers were penalized severely for every dollar of shrinkage. The plan to revert to the old incentive system was scuttled by other managers who pointed out that such punitive measures would divert attention from generating sales. To support their position, these managers were able to point to historical data as to how the stores had performed under the old incentive plan compared to their current performance. Emphasizing the multitasking nature of retailing is key because rewarding store managers for their performance on one measure has implications for their performance on others.

A second example can be drawn from Gamma (see DeHoratius and Raman 2006), a large public retailer with annual sales of roughly 10 billion dollars, and its concern over the accuracy of its inventory records. After physical audits revealed that the company's inventory records were often inaccurate (i.e., the company had substantially more or less inventory in its stores than indicated by the inventory computer systems), some Gamma managers suggested tying the bonus of store managers and salespeople to the accuracy of the physical audits. Although this bonus system might have reduced the discrepancy between the inventory records and the actual inventory held in the store, company managers did not consider the adverse effect that such a system might have on sales by diverting the attention of store-level employees away from key sales-generating activities. When we pointed out this trade-off, managers at Gamma quickly renounced their proposed incentive change. Additional analysis would be needed to determine whether the value of greater inventory record accuracy would offset the profit lost from foregone sales.

Our analysis shows the importance of both using performance-based incentives and appropriately balancing the rewards for retail store managers. Retailers must be cognizant of the way in which firm performance depends on the behavior of store employees, and they must be sure to induce behaviors that contribute to firm profit. Doing so requires that retailers understand how the reward for one activity impacts not only the effort allocated to that activity, but each of the other activities for which the individual is accountable.

8. Concluding Remarks

Our work focuses on the behavior of store managers facing two different incentive contracts in a single retail context. Using data gathered from the field, we examine the performance implications of different compensation designs, revealing that the same store managers behave vastly differently under two types of incentive regimes and how this change in behavior led to a substantial improvement in store performance during the period observed. The strength of our quasi-experiment lies in our ability to make causal inferences in the actual context of interest (Shadish et al. 2002). However, identifying and controlling for alternative explanations of our observed effect is critical in experiments such as ours that lack random assignments and pre-established control groups. We therefore attribute the observed change in store performance to the change in store manager incentive design only after controlling for plausible rival hypotheses.

Advantages of field research within one organization include the use of detailed, firm-specific data and a deep understanding of the study context gained through observation and interviews. However, our ability to claim that incentives matter outside this context is limited. More specifically, it is not certain that the causal relationship between incentives and performance observed in this retail firm generalizes to a larger sample of retail firms, let alone other organizations. Consequently, additional research is required to assess the extent to which our findings hold beyond those stores for which we have data, and to account for any differences identified.

In other contexts, researchers have found incentives to have a detrimental impact on performance by negatively influencing intrinsic motivation (Kohn 1993), job satisfaction (Herzberg 1968), R&D intensity (Hoskinsson et al. 1993), and organizational citizenship behavior (Deckop et al. 1999). Pfeffer (1998) argues that individual incentive pay undermines teamwork and encourages short-term decision making, both of which threaten organizational performance. Both Kerr (1975) and Smith (1993) highlight the unintended consequences of outcome-based incentives in the public sector. Moreover, Beer and Katz (2003) discover that when making daily business decisions, executives claim not to consider their incentive plan, a finding they claim calls into question whether incentives actually do influence behavior.

Our work does not evaluate such individual-level factors such as managerial perception of incentives, job satisfaction, or intrinsic motivation. Instead, we use organizational performance measures to capture individual store manager performance. Although this approach is consistent with many empirical studies of management, particularly on executive compensation (see, for example, Lambert and Larcker 1987), it is important to recognize that such measures are likely to capture manager behavior with more noise and less sensitivity than a manager-specific performance measure (Banker and Datar 1989). Nevertheless, inferences about managerial behavior are often made from observing organizational performance measures in the absence of manager-specific measures—given the inability to directly observe managerial behavior (Bushman et al. 1995, Lambert and Larcker 1987). Future work is needed to assess whether any of these individual-level factors might moderate the relationship between incentive change and firm performance observed in our context.

Finally, in our work with retailers, we have observed a multitude of store manager payment schemes. This variation in store manager pay is akin to the variation in CEO compensation found across multiple firms. Several researchers have attempted to identify the drivers of variation in CEO compensation across multiple firms (see, for example, Walls 1999, Zajac and Westphal 1994, Ramanan et al. 1993). An analysis of a cross section of retail firms may provide additional insight into the structure and effectiveness of different store manager incentive plans. Barkema and Gomez-Mejia (1998) provide a general theoretical framework for understanding CEO compensation across firms that could be applied to the retail context with the addition of some context-specific variables. With this framework, one might be able to explain the different choices of store manager incentive design across firms and provide additional insight into the structure and effectiveness of different store manager incentive plans.

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