Managing the Impact of Employee Turnover on Performance: The Role of Process Conformance

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We examine the impact of employee turnover on operating performance in settings that require high levels of knowledge exploitation. Using 48 months of turnover data from U.S. stores of a major retail chain, we find that, on average, employee turnover is associated with decreased performance, as measured by profit margin and customer service. The effect of turnover on performance, however, is mitigated by the nature of management at the store level. The particular aspect of management on which we focus is *process conformance*—the extent to which managers aim to reduce variation in store operations in accordance with a set of prescribed standards for task performance. At high-process-conformance stores, managers use discipline in implementing standardized policies and procedures, whereas at low-process-conformance stores, managers tolerate deviations from these standards. We find that increasing turnover does not have a negative effect on store performance at high-process-conformance stores; at low-process-conformance stores, the negative effect of turnover is pronounced. Our results suggest that, in settings where performance depends on the repetition of known tasks, managers can reduce turnover's effect by imposing process discipline through standard operating procedures.

Key words: employee turnover; process management; knowledge exploitation; retail operations
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1. Introduction

Employee turnover in organizations has received substantial attention from both academics and managers. Much of this attention has been focused on understanding its causes. Implicit in this approach is the assumption that turnover is driven by certain identifiable characteristics of workers, tasks, firms, and markets, and that, by developing policies to address these characteristics, managers might reduce the occurrence of turnover in their respective organizations. As noted by several observers, however, the consequences of turnover have received significantly less attention from researchers (Staw 1980, Mobley 1982, Glebbeek and Bax 2004). This lack of academic attention is particularly surprising given that industry studies have estimated the cost of turning over one employee earning $8 per hour at $3,500 to $25,000.[1] In this paper, we address this latter issue through empirical examination of the impact of turnover on operating performance at stores in a large retail chain.

We focus our empirical analysis on the retail industry for several reasons. First, retail accounts for a substantial portion of employment in the United States. According to the National Retail Federation, in 2003 retailers in the United States employed more than 23 million people, nearly one out of every five American workers. Second, most retailers operate with very high levels of employee turnover, which makes retailing an important context in which to study this phenomenon. Finally, retail provides a setting in which performance tends to

depend on the repetition of known tasks rather than on innovation. The difference between repetition and innovation evokes March's (1991) distinction between exploitation and exploration. The relevance of this distinction is addressed in the development of our hypotheses later in this paper.

Our first objective is to determine the magnitude and direction of turnover's effect on operating performance in settings characterized by knowledge exploitation. Prior research on this question has offered mixed conclusions based on both theoretical and empirical analysis. For example, while many have argued that turnover has negative effects on operating performance due to the disruption of existing routines (Dalton and Todor 1979, Bluedorn 1982) or the loss of an employee's accumulated experience (Argote and Epple 1990, Nelson and Winter 1982, Polanyi 1966), others have suggested that firms may benefit from the innovative thinking or increased motivation that new workers bring to a job (Abelson and Baysinger 1984, Mowday et al. 1982, Staw 1980). These conflicting views suggest that the effect of turnover on performance may depend on the nature of the environment in which turnover occurs.

Our second objective is to examine whether managers can mitigate the effect of turnover on operating performance. This question is particularly relevant for settings that operate with high levels of turnover. The aspect of management in which we are most interested is process conformance—the extent to which managers aim to

reduce variation in store operations in accordance with a set of prescribed standards for task performance.

Our study design takes advantage of the fact that we are able to examine longitudinal observations of store-level performance across sites that are owned and operated by the same parent company. We are thus able to control for firm-level characteristics (e.g., employment policies, training procedures, etc.) that may otherwise confound a multifirm analysis of turnover's impact on performance. As part of their common ownership, all of the stores in this chain are instructed to follow the same standards for task performance. The extent to which store managers enforce these standards, however, varies across sites. We take advantage of this variation in the degree of process conformance across otherwise similar stores to examine the extent to which the impact of turnover can be managed.

Using data from 268 stores over 48 months, we show that, on average, turnover is associated with decreased store performance, as measured by profit margin and customer service. These average effects are not large. We also show that turnover has a nonlinear effect on performance, with low-turnover stores being more affected by turnover than high-turnover stores. Finally, we find that, at high-process-conformance stores, turnover does not decrease store performance, whereas at low-process-conformance stores, turnover does decrease store performance.

This paper proceeds as follows. Section 2 discusses the theoretical motivation for our hypotheses. Section 3 describes the empirical setting, data and measures, and empirical models. Section 4 presents and discusses our results, and §5 concludes.

2. Theoretical Motivation

As mentioned above, the prior literature on the effects of turnover provides a mixed picture in terms of both theory and empirical results. Several studies suggest that turnover decreases operating performance. While recognizing the possibility of an optimal rate of turnover, Huselid (1995) assumes that low rates of turnover are preferable to high rates. Glebbeek and Bax (2004) refer to Huselid's claim as the "conventional assumption of turnover research" (p. 279).

Much of this negative effect stems from the direct costs of turnover, such as those involved with severance and the recruitment and training of new employees (Staw 1980, Darmon 1990, Hom and Griffeth 1995). In addition, turnover has been associated with several indirect costs. First, firms may experience operational disruption (Staw 1980, Mobley 1982) following the departure of key employees. This could be due to either the loss of the firm-specific human capital that resides in departing employees (Becker 1962) or the loss of the social capital embedded in workers' relationships to each

other and the organization (Leana and Van Buren 1999, Dess and Shaw 2001). A second source of indirect costs is the demoralization of employees who remain with a firm (Staw 1980, Steers and Mowday 1981, Mobley 1982). This demoralization may be due to the loss of a respected colleague or the fact that turnover may require additional work to be absorbed by remaining employees whose capacity is already stretched (Mowday et al. 1982).

Despite substantial evidence regarding turnover's negative consequences for firms, several studies—including many of those above—note offsetting positive effects. For example, the economic perspective on turnover suggests that turnover reflects the beneficial aspects of worker mobility, such as the improvement of matches between employees and firms over time (Jovanovic 1979). Organizational psychologists have also claimed that workers' efforts may be highest when they first join an organization and may decrease over time (Staw 1980). These conflicting views concerning the effects of turnover suggest that one must not view turnover as a monolithic concept, but rather as a contingent phenomenon. The relevant question thus becomes not whether turnover has positive or negative effects on performance, but rather under what conditions it is more harmful or beneficial to the firm (Osterman 1987). Numerous studies have examined the dimensions along which turnover's impact on performance may vary. These dimensions include the absolute level of turnover itself (Bluedorn 1982, Abelson and Baysinger 1984), the degree to which the departing employee is respected by his colleagues who remain with the firm (Mowday et al. 1982), the departing employee's tenure with the firm (Staw 1980), the degree to which turnover is voluntary for the worker (Bluedorn 1982), the degree to which turnover is predictable (Price 1977, Staw 1980), and the organizational structure of the firm in which turnover occurs (Carley 1992, Argote 1999, Rao and Argote 2006).

One of the most commonly noted moderators of turnover's effect on performance is the nature of the task being performed. Most studies considering the moderating role of task characteristics draw on some variant of the distinction that is clearly stated in March's (1991) comparison: "between the *exploration* of new possibilities and the *exploitation* of old certainties" (p. 71, emphasis added). March suggests that, in situations involving exploration, the addition of novice workers may actually increase knowledge levels within the firm—not because of the expertise of these new workers, but rather because of the increased variety of perspectives they introduce to the organization.

Several studies provide support for the benefits of turnover in settings requiring exploration or innovation. Dalton and Todor (1979) and Staw (1980) note that the worker mobility implied by turnover may serve as

a source of new knowledge for firms. Furthermore, an experimental study by Argote et al. (1995) finds that, although the average effect of turnover on work group performance is negative, this effect is less pronounced for complex tasks than for simple tasks. They attribute this difference in turnover's effect to the fact that the performance of complex tasks requires greater innovation (i.e., exploration) than simpler tasks requiring repetition (i.e., exploitation).

We maintain that performance in retail chain settings, such as the setting considered in this study, is more accurately characterized as requiring exploitation than exploration. We refer to March's choice of terms to describe *exploitation* (e.g., refinement, production, efficiency, implementation, execution) versus *exploration* (e.g., search, variation, risk taking, experimentation, discovery, innovation) (March 1991). As Winter and Szulanski (2001) also argue, companies that operate multiple units often evolve from a phase of exploration during which they experiment with different approaches, to a phase of exploitation during which they "freeze the design" and replicate the established approaches. As a result, the performance at mature retail chains is highly dependent on the successful execution of known activities such as processing of incoming inventory, shelving merchandise, responding to customer queries, and transacting sales on the cash registers.

In this environment, we expect employee turnover to have a negative effect on firm performance due to operational disruption from employee departures, additional work that must be absorbed by remaining employees, and the loss of tacit knowledge and accumulated experience held by departing employees. While activities such as shelving merchandise may benefit from increased effort of new employees, we expect this positive effect to be outweighed by the negative effects of turnover. Based on this characterization and the prior literature, we arrive at our first hypothesis:

HYPOTHESIS 1. *In settings requiring high levels of knowledge exploitation, turnover will, on average, have a negative effect on operating performance.*

To the extent that the hypothesized negative effect of turnover on operating performance in exploitation-based settings exists, we are interested in understanding the tools that managers might use to mitigate these effects. Below, we argue that one management lever in this regard is *process conformance*—the degree to which managers aim to reduce variation in operations in accordance with a set of prescribed standards for task performance. This concept is similar to notions of attention to detail and adherence to rules and procedures (Naveh and Erez 2004). Several researchers claim that a process conformance approach may be appropriate in settings that produce standardized products or services (Levitt 1972,

Bowen and Lawler 1992, Adler and Cole 1993, Sitkin et al. 1994, Bowen and Lawler 1995, Adler et al. 1999).

In support of the role of process conformance in mitigating turnover's effect on performance, Argote and Epple (1990) state that "turnover may matter more in organizations where jobs are not standardized and procedures do not exist for transmitting knowledge to new members" (p. 922). In motivating our second hypothesis, we note that this quote uses the word "may," suggesting that the role of such standardization in mitigating turnover's negative effects merits empirical examination. We also stress a point that is important to our analysis, though not addressed in the above quote—that standardization is a necessary but not sufficient condition for process conformance. In our setting, the level of standardization as designated by the corporate office is the same at all 268 stores, each of which is instructed to follow the policies and procedures described in the 334-page corporate manual. Because the chain uses centralized planning, compliance with standards is important from the perspective of the corporate office. The extent to which store managers enforce these standards, however, differs considerably across sites. While some store managers are quite disciplined in implementing these prescribed standards (high-process-conformance stores) others are more tolerant of deviations from these standards (low-process-conformance stores).

In our retail setting, to the extent that stores operate with a high degree of process conformance, we expect that knowledge concerning task performance will be transferred more easily to new employees (i.e., it will be less likely to be lost when employees depart). This expectation leads to our second hypothesis:

HYPOTHESIS 2. *In settings requiring high levels of knowledge exploitation, the level of process conformance will moderate the impact of turnover on operating performance. In particular, stores with lower levels of process conformance will be more negatively affected by turnover than stores with higher levels of process conformance.*

3. Research Design

3.1. Empirical Setting

We test our hypotheses using data from Borders Group (Borders), a Fortune 500 retailer of entertainment products such as books, CDs, and DVDs. At the end of 2003, Borders operated 445 superstores (under the name Borders) and about 720 mall-based stores (under the name Waldenbooks), and employed approximately 32,000 people. In this study, we focus solely on Borders superstores (hereafter called Borders stores). Like most retailers, Borders stores experience high levels of employee turnover. Between 1999 and 2002, the average annual full-time employee turnover across Borders stores ranged from 49% to 69%, and the average annual part-time employee turnover ranged from 94% to 114%.

Borders stores provide an ideal setting in which to examine whether the impact of turnover on performance can be moderated by process conformance. Because Borders uses centralized merchandise planning, it has developed standard operating procedures across all of its stores. This standardization supports customer service efforts at the store level. For example, computer terminals at Borders stores allow customers to check the availability and location of specific books. The success of this system depends on books being shelved in specific sections, as prescribed by the corporate standards.

The shelving standards, as well as other standard operating procedures, are described in a 334-page policy and process handbook. Although all stores are instructed to conform to these standards, we observed during our store visits that the extent of conformance varies across sites. While some store managers impose discipline in conforming to prescribed standards, others tolerate deviations. For example, at one store, in violation of shelving standards salespeople organized art books by artist rather than by author. The manager of that store noted

> we don't shelve art books like other Borders stores do. Our salespeople are extremely brainy. Other stores don't shelve by artist, they shelve by author. Like some of titles up there, I don't know which artists they are and look in the computer, and it's like a Degas book, and I wouldn't know that by looking at it, but the salespeople know. So they put titles with Degas that don't have the word "Degas" in the name. They do that with biographies as well. If a biography doesn't have a name of a person they will know that and say, "Hey, this is a biography about this person. I'm going to shelve it with this person's work."

At another store, salespeople placed overstocked books underneath display tables on the selling floor instead of placing them in appropriate storage areas. Similar to the above example, the store manager was well aware of this violation and even encouraged it, as she thought it saved her salespeople time in restocking shelves.

This approach, however, was not consistent across stores. In fact, we asked another store manager why he did not encourage his employees to deviate from shelving standards when they disagreed with them. He replied, "That's exactly how books get lost at a store." In a related vein, a five-year employee at another store told us that, while she often did not agree with the shelving standards, it was clear to her that she was expected to follow them. While picking up the new merchandise that arrived at the store, she pointed at two books that were related to the bestselling book *The Da Vinci Code*, and observed

> this one goes to "Christianity," but this one is in "metaphysical." See, that's another dumb thing. We don't keep them together in sections. This is not our thinking, but this is what we are asked to do. The label says Christianity, so I'll put it in Christianity.

3.2. Data and Measures

Our sample includes data from all 268 Borders stores that opened before August 1999. We obtained monthly turnover and performance data for each store from 1999 to 2002. Below, we describe our measures of store performance, employee turnover, and process conformance. We then describe our empirical analysis and the associated control variables. Summary statistics and simple correlations among all variables used in our analysis are provided in Tables 1 and 2, respectively. We note that Table 2 should be interpreted with caution, as it uses pooled observations from the 268 sites across 48 time periods.

3.2.1. Store Performance. We examine turnover's effect on two measures of store performance. The first, customer service score, is a subjective measure. Each store is shopped once a month by a mystery shopper. These shoppers fill out a form that includes approximately 50 questions about the store environment and customer service interactions.[2]

A store's overall customer service score is based on the mystery shopper's answers to these questions. Our second performance measure, profit margin (operating income divided by sales), is an objective measure of financial performance. We prefer this measure to other measures of financial performance, such as total sales or total profit, as these latter measures are affected by the absolute level of activity at the store. In many instances, the absolute level of activity depends on factors that are beyond the control of the store manager, such as weather conditions, corporate promotions, author signings, or idiosyncratic special events. Because it is difficult to account for the impact of all of these external factors, we use profit margin as a performance measure that controls for differences in the absolute level of activity across stores.

Table 1   Summary Statistics (Sample of 268 Stores Across 48 Months)

	N	Mean	Std. dev.	Min	Max
Customer service score	11,325	85.07	11.21	27.78	100
Profit margin	12,717	7.44%	9.91%	−93.65%	55.66%
RPL	10,343	87.70%	12.70%	4.30%	100.00%
Store conditions*	714	75.43	11.33	37.00	99.20
Full-time turnover	12,718	4.37%	5.37%	0.00%	50.00%
Part-time turnover	12,709	7.49%	10.50%	0.00%	250.00%
Total turnover	12,717	5.48%	5.32%	0.00%	85.19%
Turnover of managers	12,722	0.022	0.149	0	2
Total payroll ($)	12,711	63,759	21,437	10,416	273,653
Proportion full	12,717	0.62	0.13	0.18	1.00
Percent of unemployment	12,717	4.29	1.73	1.10	19.30
Number of competitors	12,715	0.99	0.97	0	6

*Store conditions is observed at a store-year level.

Table 2   Pearson Correlations (p-Values Reported Below Correlation Coefficients)

	Customer service	Profit margin	Full-time turnover	Part-time turnover	Total turnover	Turnover of managers	Total payroll	Proportion full	Unemployment	Competitors
Customer service score	1									
Profit margin	−0.022	1								
	0.022									
Full-time turnover	0.002	−0.048	1							
	0.871	<0.0001								
Part-time turnover	−0.011	−0.066	0.161	1						
	0.248	<0.0001	<0.0001							
Total turnover	0.007	−0.060	0.441	0.389	1					
	0.436	<0.0001	<0.0001	<0.0001						
Turnover of managers	−0.033	−0.004	0.048	0.028	0.0313	1				
	0.001	0.650	<0.0001	0.002	0.001					
Total payroll	0.059	0.287	−0.018	−0.020	−0.022	0.037	1			
	<0.001	<0.0001	0.038	0.024	0.013	<0.0001				
Proportion full	0.046	−0.110	−0.004	0.169	0.0421	0.004	0.0418	1		
	<0.0001	<0.0001	0.684	<0.0001	<0.0001	0.693	<0.0001			
Unemployment	−0.223	−0.072	−0.089	−0.031	−0.090	−0.005	−0.0408	0.0565	1	
	<0.0001	<0.0001	<0.0001	0.000	<0.0001	0.553	<0.0001	<0.0001		
Competitors	−0.024	0.006	−0.036	−0.043	−0.051	0.003	0.008	−0.0923	−0.072	1
	0.007	0.369	<0.0001	<0.0001	<0.0001	0.771	0.361	<0.0001	<0.0001	

3.2.2.   Employee Turnover. Employees voluntarily leave Borders stores for a variety of reasons including career changes, geographical moves, pursuit of educational opportunities, or retirement. As shown in Figure 1, across all Borders stores, employee turnover tends to be highest during the month of August due to employees' leaving Borders to return to school.

Given the nature of the performance measures we observe, we focus on turnover of employees who perform day-to-day operational activities at the stores and exclude employees who are engaged in office coordination or community relations activities. In addition, we focus solely on permanent employees. Like most retailers, Borders hires temporary employees during high-traffic periods (e.g., holiday shopping in December). These temporary employees are excluded in our measures.[3] In addition, Borders reports employees' departures only when they leave the company permanently. Consequently, our turnover measures do not track store transfers. Finally, we note that most turnover at Borders stores is voluntary. Though we would have liked to distinguish between voluntary and involuntary turnover, we were not able to obtain the data required to make such distinctions.

We calculate the turnover rate in a particular period as the number of employees who left a store during that period divided by the average number of employees working at the store during that period. While there are several other methods for calculating employee turnover (Mobley 1982, Price 1977), our measure is widely used and allows for comparability to earlier findings (Price

1977, Glebbeek and Bax 2004, Shaw et al. 2005). As shown in Table 1, average monthly full-time turnover in our sample is 4.4%, while average monthly part-time turnover is 7.5%.

3.2.3.   Process Conformance. To assess the level of process conformance at stores, we use two measures that are regularly tracked by Borders management. The first measure, internally called store conditions, is taken quarterly and measures conformance to a wide range of processes. The second measure, internally called returns pull list, or RPL, is taken monthly and measures conformance to a specific process. Below we describe each of the measures and explain how we use them to create a composite measure of process conformance.

3.2.4.   Store Conditions. Borders classifies its stores into different regions, each of which is led by a regional manager. Regional managers regularly make store visits to assess the performance of stores and to set goals for store managers. Once a quarter, each store's regional manager also performs a thorough inspection of its conformance to a wide range of processes. The inspection covers four categories: books, café, music and video, and store operations. Each category is divided into multiple sections. For example, the book category is divided into five sections: alphabetization, shelf organization, endcaps, overstock, and product flow. Each of these sections is further divided into different items. The alphabetization section, for example, includes overall alphabetization, category-critical alphabetization, biography alphabetization, and alphabetization when an author has multiple books.

Figure 1   Full-Time and Part-Time Employee Turnover at Borders, 1999–2002
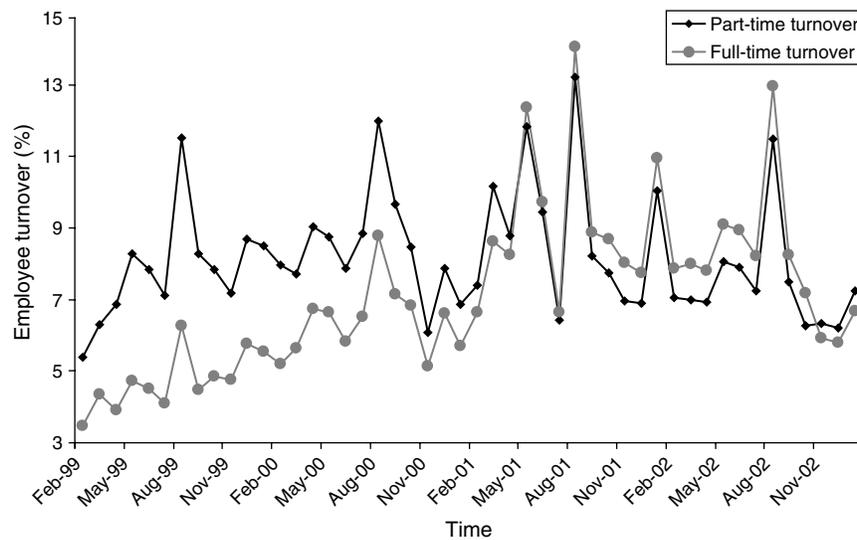
Stores receive a score for each of the items. The average of these scores determines the score for the specific section. Specific section scores are first multiplied by a weighting scale and then added up to create the total store conditions score.

3.2.5.   Returns Pull List. The second component of our composite measure of process conformance is a store's RPL score. In this setting, retailers are allowed to return unsold books to the publishers for a full refund minus the costs of shipping and handling. Processing returns is a major task at Borders stores: a typical store returns approximately 110,000 units, or 40% of its inventory, every year. At the beginning of each month, Borders's corporate office sends a returns list to each store. The standard operating procedures require stores to return all books on the list to the retailer's distribution centers by the end of the month. At the end of each returns period, the stores receive a returns conformance score (internally called an RPL score), based on the number of units returned divided by the total number of units that were supposed to be returned. The returns process, described in detail in the policy and process book, involves finding the books, packing them, and shipping them to the distribution centers.

RPL scores do not affect stores' short-term financial performance because inventory management is centralized at Borders. Because stores do not pay for the books they carry, they do not receive a payment when they return the books. In addition, RPL performance is not used by corporate management to evaluate store manager performance. Consequently, maximizing the RPL score is not necessarily a high priority for store managers. Precisely because RPL is not a high priority, it reflects the degree to which store managers place emphasis on process conformance. In this sense, RPL is similar to activities such as preventative machine maintenance

in manufacturing plants. Preventative maintenance often is neither tracked nor used to evaluate plant performance, nor used to compensate plant managers. It does, however, reflect managerial attention to process conformance; managers who place the greatest emphasis on process conformance are likely to ensure that preventative maintenance is performed as scheduled, while those who are less concerned with process conformance may sacrifice preventative maintenance for other pressing tasks at the plant. In addition, like preventative maintenance, although returning books does not have an immediate effect on performance, it may have a longer-term and indirect effect on store performance. Removing books that do not sell well from the selling floor allows stores to use the limited shelf space for books that sell better, presumably leading to higher sales.

3.2.6.   Composite Measure of Process Conformance. To develop our composite measure of process conformance, we use the average store conditions score and the average RPL score for each store for each year.[4] Using these scores, we calculate the mean and standard deviation of store conditions and RPL scores across all Borders stores for each year. For each store, we then standardize the yearly store conditions and RPL scores by subtracting the mean and dividing by the standard deviation. We combine these standardized scores to create the composite process conformance measure. Using this measure, we rank stores and divide them into high-process-conformance and low-process-conformance stores. We use these two categories—rather than using process conformance as a continuous variable—to account for the fact that process conformance is a proxy for high and low levels of process conformance rather than a precise measure of this underlying variable. As such, we are reluctant to suggest that

small variations in process conformance scores represent a meaningfully different level of process conformance. Furthermore, our simple categorization simplifies the interpretation of our empirical results.

3.3. Empirical Model

We estimate the following equation using ordinary least squares (OLS) to test for the effect of employee turnover on various dimensions of store performance:

$$Performance_{imy}$$
$$= \alpha_i + \lambda_y + \omega_m + \beta_1 \, Employee \, Turnover_{imy}$$
$$+ X_{imy}\beta_2 + \varepsilon_{imy}. \quad (1)$$

We estimate versions of (1) using several different measures of employee turnover. In our initial model, we use separate variables for part-time and full-time turnover. Given the similarity between the tasks performed by these two types of employees in this setting, we also estimate (1) using a single turnover measure for both types of workers, which we refer to as total turnover. Regardless of whether we split or combine full- and part-time turnover, we measure each value in two ways. First, we measure turnover over the one-month period ranging from the 15th day of the prior month to the 15th day of the current month. We use this time period due to the uncertainty surrounding the speed with which one would expect turnover to affect performance. Using turnover lagged by one month may be misleading if the effects of turnover occur immediately. Alternatively, using turnover in the current month would be problematic if performance effects occur with a lag. We use our measure as a compromise between these two extremes. To address concerns about the potential noise in monthly levels of turnover, we also estimate our models using a measure of turnover during the prior three months.

In addition to employee turnover, (1) includes a vector, X_{imy}, that contains several store-level variables that vary over time. These include an indicator for turnover by store managers during the current month (to control for management changes);[5] full-time employees as a percentage of total employees (to control for employee mix); total store payroll (to control for the total amount of labor used by the store); the number of competitors in the local market;[6] and the unemployment rate in the store's metropolitan statistical area (to control for labor supply).[7] We would have liked to control for average employee tenure at the store. We were not able, however, to obtain these data from the company.

This specification also includes fixed effects for each store (α_i), each year (λ_y) from 1999 to 2002, and each month (ω_m) of the calendar year. Store fixed effects control for time-invariant, unobserved heterogeneity across stores[8] (Hausman and Taylor 1981), which might otherwise affect both employee turnover and store performance, leading to biased estimates. The year effects

control for changes over time in factors such as economic conditions and corporate policies, while the calendar-month effects control for seasonality.

To make sure that turnover is not endogenous to performance, we asked store managers, store employees, and corporate managers what drives turnover at Borders stores. None of the managers we interviewed mentioned poor store performance as a driver of employee turnover. Furthermore, they noted that involuntary turnover due to the poor performance of individual employees is quite rare. Finally, several of our empirical models use lagged measures of turnover to reduce concerns of endogeneity. Nevertheless, to test whether employee turnover remains endogenous, we examine the effect of past store performance on employee turnover. We use one-month and two-month lags for both customer service and profit margin. The results, not reported in our paper, show no evidence of significant effect of either measure of store performance on employee turnover. The absence of significant effects in the reverse regressions is reassuring, and suggests that we need not be overly concerned about the exogeneity of our turnover measure.

Several have hypothesized that the relationship between employee turnover and performance is nonlinear (Price 1977, Bluedorn 1982). To determine whether the effect of turnover on performance depends on the level of turnover at the stores, we estimate models in which we interact monthly turnover with two categories for the average level of turnover—high and low—at the stores. This model appears below:

$$Performance_{imy}$$
$$= \alpha_i + \lambda_y + \omega_m + \beta_1 \, Employee \, Turnover_{imy}$$
$$+ \beta_2 \, Employee \, Turnover_{imy}$$
$$* High \, Turnover_{imy} X_{imy}\beta_4 + \varepsilon_{imy}. \quad (2)$$

The high- and low-turnover categories were assigned by ranking and dividing the stores into halves based on their turnover in each year. We also estimate versions of (2) where we divide stores into three categories based on their yearly turnover performance—high, medium, and low. The results (not reported in this paper) are very similar to those using two categories.

Finally, to determine whether process conformance moderates the relationship between turnover and performance, we estimate models in which the level of employee turnover is interacted with the two categories of process conformance—high and low. This model appears below:

$$Performance_{imy}$$
$$= \alpha_i + \lambda_y + \omega_m + \beta_1 \, Employee \, Turnover_{imy}$$
$$+ \beta_2 \, Employee \, Turnover_{imy}$$
$$* High \, Process \, Conformance_{iy} + X_{imy}\beta_4 + \varepsilon_{imy}. \quad (3)$$

As a test of robustness, we also estimate a version of (3) where we divide stores into three categories based on their yearly process conformance performance—high, medium, and low. In addition, we also estimate versions of (3) where we use yearly RPL scores, yearly store conditions scores, and variations in RPL as single measures of process conformance.[9]

4. Results and Discussion

4.1. Average Effect of Turnover on Performance

4.1.1. Customer Service. Table 3 presents the estimates for our basic model with customer service score as the dependent variable. Columns 1 and 2 suggest that, on average, monthly turnover has a negative, but insignificant, impact on customer service. When turnover is measured over the prior three months, however, the effects remain negative and are significant at conventional levels (Columns 3 and 4). In terms of magnitude, these effects are not large—an increase of one-standard deviation[10] in full-time turnover and part-time turnover at an average store lead to reductions of 0.33 and 0.20 points in customer service scores, respectively (0.4% and 0.2% relative to the average score of 85.1 points). Using total turnover, the impact of an increase of one standard deviation is a reduction of 0.39 points (0.5% relative to the average score).

4.1.2. Profit Margin. Table 4 provides analogous results for regressions in which profit margin is the dependent variable. Again, the results using one-month turnover rates suggest an insignificant relationship between turnover and performance (Columns 1 and 2). Using turnover rates for the prior three months, we again find negative and significant effects of turnover on performance. An increase of one standard deviation in full-time turnover at an average store leads to reductions of 0.2 percentage points in profit margin (2.72% relative to the average value of 7.44%). With respect to total turnover, the impact of an increase of one standard

Table 3 Regressions Testing the Average Effect of Employee Turnover on Customer Service Score (Standard Errors Shown in Parentheses)

Variable	Dependent variable: Customer service score			
	1	2	3	4
Percent of full-time turnover	0.281 (1.897)			
Percent of part-time turnover	−0.471 (0.780)			
Percent of total turnover		−1.775 (1.813)		
Percent of full-time turnover (3 months)			−3.569*** (1.033)	
Percent of part-time turnover (3 months)			−1.064** (0.510)	
Percent of total turnover (3 months)				−4.274*** (1.154)
Any manager turnover during period?	−0.614 (0.730)	−0.602 (0.730)	−0.369 (0.738)	−0.389 (0.739)
Percent of full-time employees	−1.708 (1.341)	−1.757 (1.332)	−1.677 (1.420)	−1.771 (1.400)
Total payroll (in ten thousands)	0.587*** −0.151	0.581*** −0.150	0.549*** −0.160	0.555*** −0.160
Number of local competitors	0.567* (0.311)	0.573* (0.311)	0.431 (0.358)	0.425 (0.358)
Percent of local unemployment	−0.026 (0.138)	−0.032 (0.137)	0.021 (0.145)	0.025 (0.146)
Store fixed effects?	Yes	Yes	Yes	Yes
Calendar month fixed effects?	Yes	Yes	Yes	Yes
Year fixed effects?	Yes	Yes	Yes	Yes
Observations	11,318	11,321	10,565	10,567
Adjusted R^2	0.3916	0.3919	0.3701	0.3700

Notes. *, **, *** denote statistical significance at the 10%, 5%, and 1% levels, respectively. Standard errors are heteroskedasticity robust and clustered by store. Regressions include a constant term not shown in the table.

Table 4 Regressions Testing the Average Effect of Employee Turnover on Profit Margin (Standard Errors In Parentheses)

Variable	Dependent variable: Profit margin			
	1	2	3	4
Percent of full-time turnover	−0.011 (0.011)			
Percent of part-time turnover	0.002 (0.005)			
Percent of total turnover		−0.023 (0.015)		
Percent of full-time turnover (3 months)			−0.022*** (0.006)	
Percent of part-time turnover (3 months)			−0.0002 (0.0033)	
Percent of total turnover (3 months)				−0.021*** (0.006)
Any manager turnover during period?	−0.004 (0.003)	−0.004 (0.003)	−0.005* (0.003)	−0.005* (0.003)
Percent of full-time employees	−0.005 (0.010)	−0.007 (0.011)	−0.002 (0.010)	0.000 (0.010)
Total payroll (in ten thousands)	−0.006*** (0.001)	−0.006*** (0.001)	−0.006*** (0.001)	−0.006*** (0.001)
Number of local competitors	−0.028*** (0.003)	−0.028*** (0.003)	−0.027*** (0.003)	−0.027*** (0.003)
Percent of local unemployment	−0.004*** (0.001)	−0.004*** (0.001)	−0.004*** (0.001)	−0.004*** (0.001)
Store fixed effects?	Yes	Yes	Yes	Yes
Calendar month fixed effects?	Yes	Yes	Yes	Yes
Year fixed effects?	Yes	Yes	Yes	Yes
Observations	12,702	12,709	11,926	11,928
Adjusted R^2	0.7908	0.7890	0.7949	0.7947

Notes. *, **, *** denote statistical significance at the 10%, 5%, and 1% levels, respectively. Standard errors are heteroskedasticity robust and clustered by store. Regressions include a constant term not shown in the table.

deviation is 2.41%, relative to the average profit margin, and amounts to $11,700 of lost profit per store per year. This seemingly modest negative effect on profit margin, however, is economically significant for the company. A loss of $11,700 profit per store amounts to a total loss of $3.1 million for 268 stores, or approximately 6% of the net income that came from Borders stores in 1999.[11]

Although our findings are sensitive to the length of time over which turnover is observed, the results from Tables 3 and 4 provide some support for Hypothesis 1. Using turnover rates for the prior three months, on average, turnover has a negative effect on both measures of store performance. We note that the results using separate measures of full- and part-time turnover and a single measure of total turnover are very similar. In subsequent sections, we discuss our results using the measure of total turnover only.

4.2. Nonlinear Effect of Employee Turnover
Columns 1 and 2 in Table 5 present estimates of (2) with customer service as the dependent variable, and Columns 3 and 4 provide similar estimates of models with profit margin as the dependent variable. For all

Table 5 Regressions Testing the Nonlinear Effect of Employee Turnover on Both Measures of Performance (Standard Errors in Parentheses)

Variable	Dependent variable: Customer service		Dependent variable: Profit margin	
	1	2	3	4
Percent of total turnover	−3.720*		−0.038**	
	(2.036)		(0.018)	
Percent of total turnover *High turnover	8.052***		0.062***	
	(3.292)		(0.021)	
Percent of total turnover (3 months)		−4.266***		−0.024***
		(1.224)		(0.01)
Percent of total turnover (3 months) *High turnover		−0.057		0.022**
		(1.774)		(0.010)
Any manager turnover during period?	−0.605	−0.390	−0.004	−0.005*
	(0.729)	(0.739)	(0.003)	(0.003)
Percent of full-time employees	−1.814	−1.769	−0.007	−0.001
	(1.334)	(1.401)	(0.011)	(0.010)
Total payroll (in ten thousands)	0.569***	0.555***	−0.006***	−0.006***
	(0.150)	(0.160)	(0.001)	(0.001)
Number of local competitors	0.589*	0.425	−0.028***	−0.027***
	(0.311)	(0.358)	(0.003)	(0.003)
Percent of local unemployment	−0.037	0.025	−0.004***	−0.004***
	(0.137)	(0.146)	(0.001)	(0.001)
Store fixed effects?	Yes	Yes	Yes	Yes
Calendar month fixed effects?	Yes	Yes	Yes	Yes
Year fixed effects?	Yes	Yes	Yes	Yes
Observations	11,321	10,567	12,709	11,928
Adjusted R^2	0.3922	0.3699	0.7893	0.7949

Notes. *, **, *** denote statistical significance at the 10%, 5%, and 1% levels, respectively. Standard errors are heteroskedasticity robust and clustered by store. Regressions include a constant term not shown in the table.

measures of turnover, we find that the impact of turnover on performance is negative at low-turnover stores for both customer service and profit margin. Using customer service as the dependent variable, high-turnover stores show an effect of turnover that is 8.1 points greater than the effect for low-turnover stores using monthly measures of turnover. The combined effect of turnover of 4.33 (=−3.72 + 8.05) for high-turnover stores is not significantly different from zero. Similarly, using profit margin as the dependent variable, high-turnover stores show effects of turnover that are 0.06 and 0.02 percentage points greater than the effect for low-turnover stores using monthly and three-month measures of turnover, respectively. Again, the combined effects of turnover for high-turnover stores are not significantly different from zero. Overall, our results show that the effect of turnover on performance is worse for low-turnover stores than for high-turnover stores. This is consistent with Price's (1977) prediction and a recent empirical study of turnover in the trucking and concrete pipe industries (Shaw et al. 2005).

4.3. Moderating Effect of Process Conformance
Table 6 presents estimates of (3) with customer service and profit margin as the dependent variable.[12] Regardless of whether we use customer service (Columns 1 and 2) or profit margin (Columns 3 and 4) as the performance variable, our results are similar. The effect of turnover for low-process conformance stores is negative and significant. This negative effect is offset as we move to stores with high levels of process conformance. Using both monthly and three-month measures of turnover, the effects for high-process conformance stores are significantly higher than those for low-process conformance stores. The combined effects for the high-conformance group are not significantly different from zero in any of the four columns. For example, when using monthly turnover, and examining the effect of turnover on customer service, the combined effect of turnover for high-process conformance stores of 4.431 (=−7.777 + 12.208) in Column 1 is not significantly different from zero. Note that we obtained very similar results when we divided stores into high-, medium-, and low-process conformance categories.

In Table 7, we report results in which we replace our composite measure of process conformance with three separate measures of process conformance—high yearly RPL scores, high yearly store conditions scores, and high variation in RPL. The first two measures were created by ranking stores with respect to their yearly RPL and yearly store condition scores and dividing them into high- and low-RPL and high- and low-store conditions categories, respectively. Regardless of whether we use high-RPL or high-store conditions, we obtain similar results. The effect of turnover on both customer service and profit margin for stores that are in low categories is

Table 6 Regressions Testing Process Conformance as a Moderator of Turnover's Effect on Customer Service Score and Profit Margin (Standard Errors in Parentheses)

Variable	Dependent variable: Customer service		Dependent variable: Profit margin	
	1	2	3	4
Percent of total turnover	−7.777** (3.257)		−0.031** (0.014)	
Percent of Total turnover ∗ High conformance	12.208*** (3.803)		0.056*** (0.021)	
Percent of total turnover (3 months)		−6.262*** (1.865)		−0.036*** (0.008)
Percent of total turnover (3 months) ∗ High conformance		5.088*** (1.993)		0.031*** (0.010)
Any manager turnover during period?	−0.404 (1.019)	−0.064 (1.033)	−0.003 (0.004)	−0.004 (0.003)
Percent of full-time employees	−4.076** (1.891)	−4.083** (2.031)	−0.009 (0.011)	−0.005 (0.011)
Total payroll (in ten thousands)	0.610*** (0.172)	0.587*** (0.179)	−0.009*** (0.001)	−0.009*** (0.001)
Number of local Percent of competitors	0.630* (0.381)	0.407 (0.458)	−0.030*** (0.003)	−0.029*** (0.003)
Percent of local unemployment	−0.199 (0.199)	0.123 (0.212)	−0.003*** (0.001)	−0.003*** (0.001)
Store fixed effects?	Yes	Yes	Yes	Yes
Calendar month fixed effects?	Yes	Yes	Yes	Yes
Year fixed effects?	Yes	Yes	Yes	Yes
Observations	7,452	6,709	8,508	7,750
Adjusted R^2	0.3771	0.3693	0.7936	0.7945

Notes. *, **, *** denote statistical significance at the 10%, 5%, and 1% levels, respectively. Standard errors are heteroskedasticity robust and clustered by store. Regressions include a constant term not shown in the table.

negative and significant. This negative effect is offset as we move to stores in the high categories. These similar results with models based on the individual components of our composite measure provide support for our main findings.

We add the third measure—high variation in RPL—under the assumption that stores with high levels of process conformance will be characterized not only by high RPL levels but also by low variation in RPL levels across time. We divide stores into high- and low-variation RPL categories using the standard deviation of their monthly RPL scores in a year. As reported in Columns 3 and 6 of Table 7, the effect of turnover for stores in the low-variation RPL category is negative and significant. This negative effect is even more pronounced for stores that are in the high-variation RPL category, supporting our hypothesis that the effect of turnover is worse for low-conformance stores.

5. Conclusion
The first objective of this study is to examine the effect of turnover on operating performance in settings that require high levels of knowledge exploitation (March

1991). Our longitudinal analysis of Borders stores shows that, on average, increased employee turnover is associated with decreased store performance, as measured by customer service score and profit margin. Consistent with Price (1977), we also find that turnover has a nonlinear effect on performance, with low-turnover stores being more affected by turnover than their high-turnover counterparts. At low-turnover stores, the average employee has a high level of accumulated experience. Consequently, an employee's departure would be expected to have a large effect on performance because the store loses an employee with substantial experience. At high-turnover stores, however, the average employee has a lower level of accumulated experience. As such, employee turnover would be expected to have a smaller effect on store performance because turnover simply replaces one inexperienced employee with another.

The second objective of our work is to contribute to the study of employee turnover as a contingent phenomenon. Our analysis shows that the effect of turnover on operating performance is mitigated by the nature of store management. Specifically, the negative effect of turnover on performance is more pronounced at stores where managers choose a low-process-conformance approach. For example, an increase of one standard deviation in total turnover at a low-process-conformance store leads to a 3.8% decrease in profit margin. However, at high-process-conformance stores, where employees consistently follow prescribed standard operating procedures, increasing turnover does not lead to a decrease in store performance.

We claim that, at high-process-conformance stores, there is a consistent approach to task performance and, as a result, knowledge resides in existing routines (Nelson and Winter 1982) at those sites. It is, therefore, easier to transfer knowledge to new employees, and the disruption of existing routines following an employee departure is small (Argote 1999). At low-process-conformance stores, however, there is greater variation across employees in how tasks are performed. As a result, knowledge resides in employees rather than in organizational routines. The knowledge of these workers is thus likely to be lost when they leave the firm.

Our study has implications for managing knowledge in organizations. Our findings suggest that storing knowledge in organizational routines rather than in employees represents one approach to mitigating the negative consequences of turnover on organizational performance. This approach may be particularly effective in exploitation-oriented settings that experience high levels of turnover.

Like most studies of this type, ours is not without its caveats. First, we examine a single firm in a single industry. As a result, our findings may not generalize to other settings, even those characterized by similar levels of knowledge exploitation. Nonetheless, our focus on a

Table 7   Regressions Testing Various Measures of Process Conformance as Moderators of Turnover's Effect on Customer Service Score and Profit Margin (Standard Errors in Parentheses)

Variable	Dependent variable: Customer service			Dependent variable: Profit margin		
	(1)	(2)	(3)	(4)	(5)	(6)
Percent of total turnover (3 months)	−5.754*** (1.677)	−5.223*** (1.235)	−2.4919* (1.363)	−0.033*** (0.008)	−0.028*** (0.00)	−0.01419** (0.006)
Percent of total turnover (3 months) ∗ High store conditions	3.679* (1.960)			0.024** (0.010)		
Percent of Total turnover (3 months) ∗ High RPL		3.771*** (1.542)			0.028*** (0.011)	
Percent of total turnover (3 months) ∗ High RPL variation			−2.891** (1.456)			−0.010* (0.005)
Any manager turnover during period?	−0.094 (1.033)	−0.319 (0.740)	−0.305 (0.729)	−0.005 (0.003)	−0.005 (0.003)	−0.005 (0.003)
Percent of full-time employees	−4.006** (2.036)	−1.899 (1.404)	−1.811 (1.376)	−0.004 (0.011)	−0.001 (0.010)	0.000 (0.005)
Total payroll (in ten thousands)	0.590*** (0.179)	0.541*** (0.159)	0.540*** (0.160)	−0.009*** (0.001)	−0.007*** (0.002)	−0.007*** (0.002)
Number of local competitors	0.460 (0.474)	0.435 (0.358)	0.407 (0.352)	−0.028*** (0.003)	−0.027*** (0.003)	−0.027*** (0.002)
Percent of local unemployment	0.107 (0.211)	0.029 (0.145)	0.014 (0.143)	−0.003*** (0.001)	−0.004*** (0.001)	−0.004*** (0.001)
Store fixed effects?	Yes	Yes	Yes	Yes	Yes	Yes
Calendar month fixed effects?	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects?	Yes	Yes	Yes	Yes	Yes	Yes
Observations	6,709	10,567	10,567	7,750	11,928	11,928
Adjusted R^2	0.3688	0.3705	0.3703	0.7942	0.7951	0.7948

Notes. *, **, *** denote statistical significance at the 10%, 5%, and 1% levels, respectively. Standard errors are heteroskedasticity robust and clustered by store. Regressions include a constant term not shown in the table.

single firm allows us to avoid having to control for heterogeneity across stores in ownership. We thus avoid having to control for unobservable firm-level factors that are correlated with both performance and turnover. Furthermore, our findings may be applied to other forms of retailing as well as to other settings—such as call centers, hospitals, and food services—that operate with high levels of employee turnover. According to the Bureau of Labor Statistics (2005a), employee turnover rates in the retail industry and in the accommodation and food services industries were 55.1% and 75.4%, respectively, in 2005.[13] These turnover rates include turnover of all employees (e.g., workers who perform daily operational activities as well as managers and assistant managers). Turnover rates for workers who perform operational activities are likely to be even higher. At many fast-food chains, for example, employee turnover rates of 200% a year for hourly workers are common (White 2005). Furthermore, workers performing daily operational activities in these industries represent a significant portion of the workforce in the United States.[14]

Second, we cannot distinguish between voluntary and involuntary turnover. Borders managers maintain that most turnover at their stores is voluntary and, as a result, they do not systematically track the causes of turnover for store employees. To the extent that involuntary turnover

and process conformance are correlated, the moderating effect of process conformance may be partly due to the involuntary nature of turnover at these stores. Although we do not have any reason to believe that there is more involuntary turnover at high-process-conformance stores, we are not able to test this relationship with our data.

Third, our data do not allow us to determine whether a store's level of process conformance is the result of managerial policy or employee will. For example, we are not able to observe whether a store has low process conformance because its manager decides not to enforce corporate standards or because its frontline employees decide not to act in accordance with mandates from the store manager. Regardless of the underlying cause of low conformance, our study highlights the impact of its occurrence on the effect that turnover has on performance.

Fourth, it is possible that there is an alternative explanation of our results. Specifically, employees at stores with low process conformance may be more skilled in selling books and interacting with customers than they are in following standardized processes. Because these employees directly affect customer service, and thus sales and profit, their departure may disproportionately hurt operational performance at stores with low process conformance. This explanation is unlikely in our setting. We find that stores with high process conformance have

higher average customer service scores than those with low process conformance (88.2 versus 86.6). This difference of 1.6 points is statistically significant at the 1% level.[15] As a result, our setting does not appear to be characterized by a trade-off between customer service and process conformance. Furthermore, we have no reason to believe that, at stores with low process conformance, employees who leave are more customer service and sales oriented than are those employees who stay. Although we are unable to observe individual employees' inclinations toward process conformance or customer service, we expect some degree of similarity across employees within a store, especially given that hiring at a store is generally done by a single manager.

Finally, it is not obvious that our findings translate to a more exploration-oriented setting in which there may exist a trade-off between process conformance and performance measures, such as customer service. In such settings, a push toward greater process conformance and standardization will likely limit process flexibility; the theoretical effects of this trade-off on overall store or firm performance are not clear. As such, our findings are most applicable to exploitation-oriented settings (i.e., those settings in which the returns to having consistent and replicable processes are greater than those to having a high level of flexibility).

Despite these caveats, our study has important managerial implications. To reduce the costs associated with employee turnover, most recommend that managers focus on reducing the level of turnover. Here we suggest that, in certain settings, managers may also be able to reduce the turnover's effect (regardless of its absolute level) by focusing on process management and the creation of standard operating procedures. Our findings suggest that the current managerial and financial resources dedicated to reducing the occurrence of turnover might be redirected, at least in part, to improving the firm's ability to manage turnover's impact.

Acknowledgments

Endnotes
[1]For example, see Sasha Corporation (2007) for a list of studies that estimate the cost of turnover.

[2]Examples of questions relating to the customer service environment:
  • Was area outside the door and around the display windows clean and neat?
  • Were facilities in the restroom in working order?
  • Were bookshelves fully stocked, without gaps or the back of shelves showing?
Examples of questions relating to customer service interactions:
  • Did any employee initiate verbal acknowledgment or greet you while you were in the store?
  • Was at least one employee visible and approachable at the information desk?
  • Did employees make additional item suggestions?

[3]We note that the distinction between permanent and temporary employees is not the same as that between full-time and part-time employees. *Permanent employees* are those who are employed for an unspecified duration; they are considered either full time or part time based on the number of hours they work each week. *Temporary employees* are hired for a specified period of time (e.g., one month). During that period, they may work in either a full- or part-time basis.

[4]We had access to monthly RPL scores. We were not able, however, to obtain quarterly store conditions scores. We were able to collect data only on average store conditions scores for each year.

[5]We also repeated our analysis using store manager turnover during the past three months. Although the magnitude of the store manager turnover coefficient as well as its significance changed slightly in different models, the direction remained the same. We do not report the results using this alternative measure of store manager turnover.

[6]Managers at Borders consider Barnes & Noble and other Borders stores in the area as the main competitors to a specific Borders store. Consequently, Borders tracks the opening and closing of Barnes & Noble and other Borders stores near each existing Borders store.

[7]Unemployment data were obtained from the Bureau of Labor Statistics.

[8]In this setting, these unobserved, time-invariant aspects of a store include factors such as physical size and layout.

[9]Variation in RPL scores was calculated using monthly RPL scores for each store.

[10]The standard deviation of three-month turnover using pooled observations from all cross sections and time periods is 0.109 for full-time employee turnover, 0.242 for part-time turnover, and 0.101 for total turnover. The standard deviation of three-month turnover within a store varies from 0.024 to 0.245 for full-time turnover, from 0.067 to 0.801 for part-time turnover, and from 0.033 to 0.27 for total employee turnover. In interpreting our results, we use the standard deviation of turnover within an average store.

[11]In 1999, Borders Group's net income was $90.3 million. Approximately 60% of the company's sales came from Borders stores. If we assume a similar share of the profits, Borders stores contributed to about $54 million in profit. We note that the 2.72% decrease in a store's profit margin leads to a larger decrease in corporate net income as the former does not include part of the selling, general, and administrative (SG&A) expenses (it includes store labor, which is reported under SG&A), it also does not include other investment expenses or taxes.

[12]Note that the number of observations dropped significantly, as we were able to obtain only three years of data for store conditions.

[13] The turnover rate is the number of total separations as a percent of total employment in these industries.

[14] According to the Bureau of Labor Statistics (2005b), retail salespeople, cashiers, food preparation and serving workers (including waiters and waitresses), and cooks in fast-food chains accounted for 13.9 million employees, or about 10.6% of total employment in 2005.

[15] We do not observe a difference in average profit margins between high-conformance and low-conformance stores.

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