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The Retail Value Chain: Linking Employee Perceptions to Employee Performance, Customer Evaluations, and Store Performance

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The authors test a value chain model entailing a progression of influence from retail employee job perceptions → retail employee job performances → customer evaluations → customer spending and comparable store sales growth. The authors test the model using three matched samples of 1,615 retail employees, 57,656 customers, and 306 stores of a single retail chain.

The authors find that three retail employee job perceptions (conscientiousness, perceived organizational justice, and organizational identification) have main and interactive effects on three dimensions of employee job performance (in-role performance, extra-role performance toward customers, and extra-role performance toward the organization). In turn, these performance dimensions exert influence on customer evaluations of the retailer (a satisfaction, purchase intent, loyalty, and word-of-mouth composite). The authors also show that employee perceptions exert a direct influence on customer evaluations, and that customer evaluations affect retail store performance (customer spending and comparable store sales growth).

Finally, the authors conduct some simple simulations that show: (1) how changes in employee perceptions may raise average employee performances; (2) how changes in employee performances enhance average customer evaluations; and (3) how changes in customer evaluations raise average customer spending and comparable store sales growth. The authors then show that employee job perceptions and performances “ripple thru the system” to affect customer spending and store sales growth. The authors offer implications for theory and practice.

Key words: retail value chain; customer service employees; customer satisfaction; customer spending; sales growth

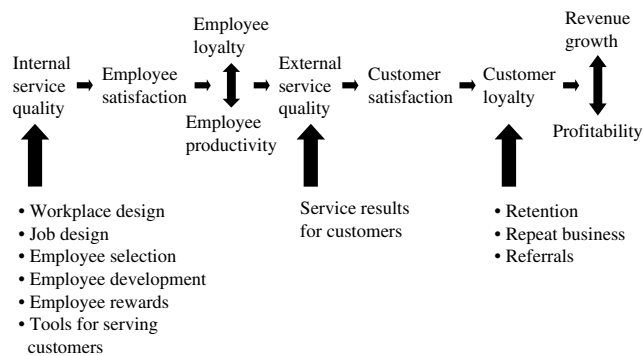
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Introduction

There has been much recent interest among managers and academics regarding factors affecting retail store performance (Marketing Science Institute 2004). The practitioner literature suggests a “value chain,” whereby perceptions and behaviors of front-line store employees shape customer satisfaction and intent, and ultimately, store performance (Heskett et al. 2003). The trade literature also suggests the importance of front-line store employees. An article in *The Grocer* argues that “it’s only when people begin to feel a close and meaningful involvement with their organization that they bring energy, enthusiasm, and passion to their work. When that happens, the end result is often greater drive, higher productivity, and better results” (Hayhurst 2004, p. 72). It seems important,

then, to improve our understanding of how employee perceptions and behaviors influence customer evaluations and store performance.

Whereas the academic literature suggests an expanded series of links within the value chain (Zeithaml 2000), empirical research has focused on isolated links within the chain, mostly in retail banking (Loveman 1998, Kamakura et al. 2002). Although this research has created great insight into factors affecting customer satisfaction, purchases, and firm performance, this narrower focus has also limited a more comprehensive test of the value chain. The purpose of the present study is to provide a more comprehensive test of the value chain using multisource data from employees, customers, managers, and stores of a single retail chain.

Figure 1 The Heskett and Colleagues Framework

Source. Reprinted by permission of *Harvard Business Review* (Figure 1), from "Putting the Service-Profit Chain to Work" by J. Heskett, T. O. Jones, G. W. Loveman, and W. E. Sasser, Volume 72, Issue 2, 1994. Copyright ©1994 by the Harvard Business School Publishing Corporation, all rights reserved.

Study Background

Overview

Our study draws heavily from the "service/value-profit" chain of Heskett and colleagues (Heskett et al. 1994, 2003). As shown in Figure 1, Heskett and colleagues propose that profit and revenue growth are a function of customer loyalty, which is affected by customer satisfaction. Both customer satisfaction and loyalty are considered "external outcomes" affected by the productivity of a firm's employees. Employee productivity is related to "internal service quality"—human resource factors affecting employee satisfaction and loyalty. There are other frameworks that share variables in common with Heskett et al., most notably the "human resource-firm performance" approach of Schneider and Bowen (1995), the "balanced scorecard" approach (Kaplan and Norton 1996), and the "return on quality" framework (Rust et al. 1995). Because the Heskett et al. framework most closely parallels the goals of our study, we use their value chain approach as our primary theoretical background.

The value chain framework has great appeal because it provides an integrative approach for firms to better understand how service and human resource inputs affect customer evaluations, customer behavior, and financial metrics (Kamakura et al. 2002, Zeithaml 2000). Still, the value chain framework and research assessing it are limited in several respects. For example, the value chain framework stops short of specifying key employee variables that ultimately affect customer evaluations and firm revenue. Although the value chain framework has employee productivity as an antecedent of customer satisfaction and behavior, it does not specify the different types of employee productivity or performance that may affect customer satisfaction and behavior, as well as some important potential antecedents of employee performances.

With regard to research assessing the value chain, there are four studies of note. First, the practitioner-based article by Rucci et al. (1998) found that employee attitudes about their jobs and their company (Sears) were related to employee behaviors. These employee behaviors were related to customer impressions, which in turn were related to revenue growth and return on assets. Rucci et al. estimated a series of main and linear effects, and combined 10 rather disparate perceptual statements to operationalized employee attitudes. A perusal of these 10 statements (p. 90) suggests that several rather different human resource-based perceptions were used to measure their attitudes construct. Thus, the effects of each employee perception on employee performances and customer impressions are not clear.

The three academically oriented tests of the value chain have all been in banking. Loveman (1998) examined linear and main effects (i.e., internal service quality → employee satisfaction → employee loyalty → external service quality → customer satisfaction → customer loyalty → revenue growth/profitability). He found support for many of these links, but did not assess key employee perceptions or performances. Soteriou and Zenios (1999) took an "operational efficiency approach" and found that bank branch inputs of employee hours worked, quality/quantity of computer equipment, and bank branch space were related to service quality and profitability. They did not assess key employee perceptions and behaviors, and they note that such perceptions and behaviors are needed for a complete test of the value chain (p. 1226).

Finally, Kamakura et al. (2002) undertook strategic and operational approaches to test their value chain models. With data aggregated at the customer level, their strategic structural equations model showed that bank equipment and the number of bank personnel per customer were linearly related to customer perceptions of bank equipment and personnel. These customer perceptions were related to customer intent. Customer intent drove actual customer patronage and customer patronage drove bank profits. For their operational approach, Kamakura et al. (2002) estimated branch-level efficiency models for branches and customers. These analyses had the managerial advantage of showing how efficiently one branch uses its labor and equipment relative to others in terms of maximizing customer patronage and profitability. In sum, Kamakura et al. (2002) assessed customer intent, patronage, and financial performance. They did not, however, assess how employee perceptions and performances affect the value chain.

Although the four studies reviewed above have enhanced our understanding of the value chain framework, they also reveal several underresearched

issues. First, the academic applications have been limited to retail banking; thus, little is known about whether the results generalize to other settings. Second, only a flow of main effects among constructs has been examined. That is, most of the effects specified test a direct flow from constructs $A \rightarrow B$ and from $B \rightarrow C$ (i.e., B potentially mediates the effect of A on C), without specifying a potential incremental direct $A \rightarrow C$ linkage. Third, with the exception of employee job satisfaction and commitment (Loveman 1988), value chain tests have largely ignored specific employee perceptions and performances that may drive customer evaluations and store performance. Finally, the effects posited in the value chain framework exclude interactions among employee perceptions. As noted by Lynch (1999), a framework that tests for an asserted pattern of interactions among constructs enhances external validity.

Our proposed approach, shown in Figure 2, addresses these issues by gathering multisource data from a retail firms' employees, managers, customers, and store records. We specify models at the individual employee, customer, and store levels, as well as an overall aggregated model that examines systems of relationships among: (1) three employee job perceptions, i.e., the personality trait of conscientiousness, employee-perceived organizational justice, and the employee's level of organizational identification; (2) three dimensions of employee performance—in-role performance, extra-role performance toward customers, and extra-role performance toward the

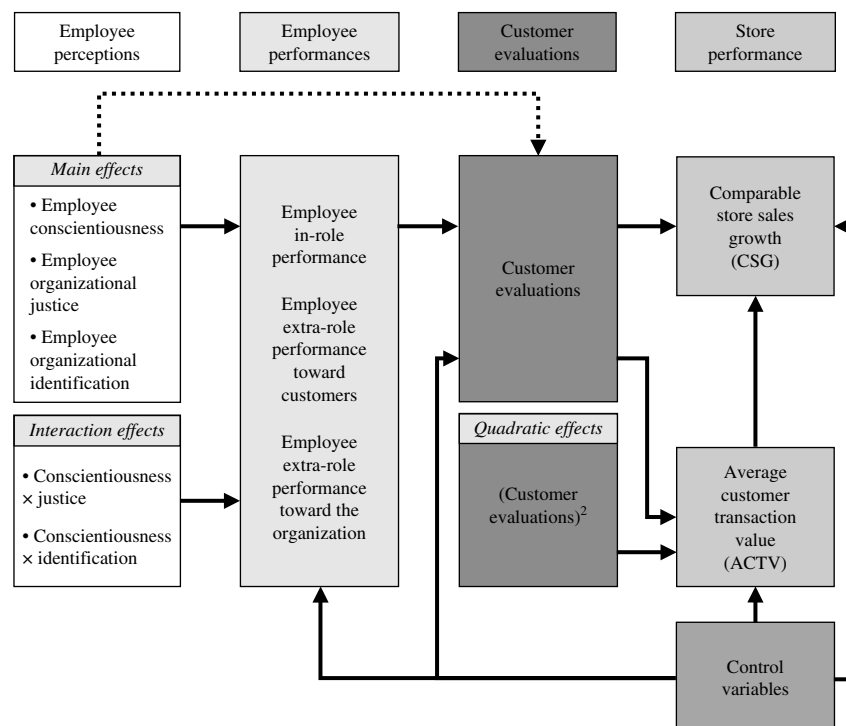
organization; (3) a customer evaluations variable (i.e., a satisfaction, purchase intent, loyalty, and word-of-mouth composite); and (4) two store performance variables—average customer transaction value per visit/per store and comparable store sales growth. Our models test interaction, relative, and indirect effects among these constructs; thus, we more fully examine the value chain framework.

Focal Constructs and Predictions

Employee Performances

Employee In-Role Performance (EIRP). Given the central role that employee performance plays in our models, we begin with a brief discussion of these constructs. Akin to the productivity perspective espoused in the value chain framework is the notion of employee in-role performance. EIRP is task performance that includes core job responsibilities encompassed in an employee's formal job description (Borman and Motowidlo 1993). We adopt a conceptualization of EIRP based on this perspective. The formal job description of the employees of our sample specified: (1) being knowledgeable about the firm, its products, competitors' products, and customers; (2) conducting proper product displays, store signage, and opening/closing procedures; and (3) performing in-role tasks specified in the job description, such as processing customer orders and conducting mandated checkout procedures.

Figure 2 Proposed Framework



Employee Extra-Role Performance Toward Customers (ERPC). Extra-role performances are discretionary behaviors employees engage in that benefit the firm in some way. One important extra-role performance to retail firms affecting the value chain is extra-role performance toward customers—ERPC. Borman and Motowidlo (1993) suggest that favorably representing the organization to customers is part of contextual performance (i.e., not required) that goes beyond the employee's formal job requirements. Bettencourt et al. (2001) suggest that ERPC reflects participation and service delivery. Participation reflects voluntary initiatives that improve service when communicating with customers, and service delivery reflects extra efforts to respond to customer queries. We define ERPC as the degree to which the store employee "goes the extra mile" during the employee-customer interface.

Employee Extra-Role Performance Toward the Organization (ERPO). Another potentially important extra-role performance is that directed toward the organization. Borman and Motowidlo (1993) suggest that such performance is done with the intention of promoting the welfare of the organization. Similarly, Bettencourt and Brown (2003) suggest that in the retail environment, taking individual initiative to improve service delivery encompasses an aspect of nonrequired "internal influence" or extra-role performance toward the firm. We adopt these two views in our study and define ERPO as the degree to which store employees voluntarily perform nonrequired work tasks to help the organization serve customers.

Relationships Among Employee Perceptions and Performances

Main Effects of Employee Conscientiousness. The ability of personality to predict performance has been a much-researched topic for decades. The "Big 5" trait most predictive of performance in the customer domain is conscientiousness (Hurtz and Donovan 2000). Conscientious individuals are dependable, organized, and orderly, and do what is required to accomplish task-oriented, in-role work. Links between conscientiousness and extra-role performances are also tenable. Meta-analyses show that conscientiousness consistently has strong correlations with the extra-role behaviors of altruism, compliance, and customer service (Hurtz and Donovan 2000). As such, and consistent with the value chain framework, selecting people with the right personality trait may lead them to go beyond the call of duty to help customers and the organization. We believe it is plausible to suggest that this "right" trait is conscientiousness, and we expect employee conscientiousness to be

related to all three performance dimensions, as shown in Figure 2.

Main Effects of Organizational Justice. Organizational justice represents the extent to which employees feel they have been treated fairly by their employer (Brockner et al. 1997). We measure three facets of organizational justice—distributive, procedural, and interactional justice.

With distributive justice, employees assess the fairness of an exchange by comparing inputs (e.g., workload) to outcomes (e.g., pay and promotions). An exchange is judged as fair when employee inputs are proportional to outcomes. We thus define distributive justice as the degree to which employees feel that they have been fairly rewarded for the performance, effort, experience, and stresses associated with their jobs. Procedural justice refers to the fairness of the policies and procedures used to arrive at employee decisions; thus, we define procedural justice as the perceived fairness of policies and procedures used in making decisions about employees. Finally, interactional justice is the extent to which employees feel they have been treated justly in their interactions with supervisors. This includes elements of courtesy, honesty, interest in fairness, and effort perceived by the employee.

Meta-analysis shows that all three justice facets are related to in-role and extra-role performances toward the organization (Cohen-Charash and Spector 2001), and individual studies show relations between justice and extra-role performance toward customers (Maxham and Netemeyer 2003). Thus, as shown in Figure 2, organizational justice should be related to EIRP, ERPC, and ERPO.

Main Effects of Employee Organizational Identification (OI). Organizational identification is defined as the degree of overlap in employee perceptions of self and perceptions of the organization (Dutton et al. 1994). Because of its explanatory ability to a range of organizational outcomes (e.g., employee compliance, loyalty, and attrition), OI has become the focus of an entire stream of research in organizational behavior (Whetten and Godfrey 1998). Recently, OI has become of interest to the marketing literature (e.g., Lichtenstein et al. 2004), and there appears to be the potential for rich insights by integrating it into the value chain research stream.

Theory underlying OI provides a basis for employees to engage in organization-supportive behavior. People identify with organizations with which they see, or with which they desire to see, themselves as sharing traits in common—traits that provide for a sense of self-enhancement (Elsbach 1998). Thus, to the extent the employee perceives the corporation to possess traits that resonate with their sense of self, actual

or ideal, they will behave in a manner that supports corporate goals (Lichtenstein et al. 2004). In-role performance, extra-role performance toward customers, and extra-role performance toward the organization are all congruent with such corporate goals. Further, a number of theorists suggest that potential outcomes of employee OI are enhanced productivity, increased cooperativeness, and altruistic behaviors toward the firm (Bergami and Bagozzi 2000). Thus, we expect OI to be related to EIRP, ERPC, and ERPO, as shown in Figure 2.

Interaction Effects of Conscientiousness, Justice, and OI on Employee Performance

Justice * Conscientiousness and OI * Conscientiousness Interactions. Although our main effect predictions with regard to conscientiousness, justice, and OI are of interest, how these constructs may interact to affect performances has greater potential for advancing value chain theory and for offering managerial implications. Further, researchers suggest that examining personality trait-job perception interactions represents an important step in advancing the personality-performance literature (Tett and Burnett 2003). We take this next step and predict that conscientiousness will interact with organizational justice and OI to affect EIRP, ERPC, and ERPO. Figure 2 depicts these relationships and our rationale is as follows.

Conscientiousness is a personality trait that is often used as a selection criterion for many organizations—firms select employees based on the belief that the employees are, or will be, conscientious. Although personality traits tend to be stable over time, as behavioral propensities, they are also activated by employee perceptions about their jobs (Hurtz and Donovan 2000). When job perceptions are strong, the behavioral outcome of the personality trait is likely to be strong as well (Tett and Burnett 2003). This trait-activation perspective implies that certain traits will interact with certain employee job perceptions to affect performance.

Organizational justice and OI are essentially employee perceptions. Both justice and OI are largely fostered by organizational socialization and the firm's human resource practices toward employees (Glynn 1998, Schneider and Bowen 1995). The trait activation perspective suggests that highly conscientious employees would perform better when they perceive high justice and are highly identified with the company. Thus, we predict that the effects of conscientiousness on performances will be more pronounced under higher levels of organizational justice and OI than under lower levels of these two constructs.

Effects of Employee Performance on Customer Evaluations

The value chain framework suggests that retail employee performances play a pivotal role in influencing customer evaluations. Recent evidence bears this out, because both employee in-role (EIRP) and extra-role performance toward customers (ERPC) are related to customer satisfaction, loyalty, and favorable word of mouth (WOM) (Schneider and Bowen 1999, Simons and Roberson 2003). It has also been suggested that organizations can better accomplish their customer satisfaction and loyalty goals when employees go beyond their basic job descriptions and take pride in helping the organization to improve—ERPO (Oliver 1997). We therefore expect that all three employee performance dimensions will be related to customer evaluations, as shown in Figure 2.

Relative Effects of Performance Dimensions on Customer Evaluations

Missing from value chain research are insights into the relative effects of employee performance. Do the effects of employee performances on customer evaluations differ by performance dimension? We believe so, and expect that extra-role performance toward the customer (ERPC) has a stronger effect on customer evaluations than do EIRP and ERPO.

First, because ERPC goes beyond the call of duty and is visible to customers, it will more likely resonate with them over time. This notion is consistent with the work of Bitner et al. (1990). In their analysis of critical customer service incidents, they report that “extraordinary” employee behaviors of courtesy and thoughtfulness translated into customers feeling highly satisfied, remembering the encounter, and weighing the encounter heavily in forming overall evaluations. Second, EIRP may be taken for granted by customers. Elements of EIRP (e.g., signage, product presentation, product knowledge, and checkout procedures) affect customer evaluations, but they are likely to be necessary, and not sufficient, conditions for maximizing customer evaluations. Similarly, extra-role performances toward the organization (ERPO) are mostly performed behind the scenes and involve discretionary behaviors of *internal influence* that improve the firm's service delivery (Bettencourt and Brown 2003). Thus, we expect that ERPC will be more strongly related to customer evaluations than will EIRP or ERPO.

Incremental Effects of Conscientiousness, Justice, and OI on Customer Evaluations

As the dotted arrow of our Figure 2 framework shows, we suggest that employee conscientiousness, organizational justice, and OI will have incremental effects on customer evaluations, beyond the effects of employee performances on customer evaluations.

First, customers are likely to sense subtle cues that employees are conscientious. Beyond performances, conscientious employees present themselves more pleasantly and skillfully, which can create positive affect with customers (Hurtz and Donovan 2000). Second, employees are more likely to treat customers well when employees feel they have been treated justly by their employer (Bowen et al. 1999). Theorists suggest that when customers perceive that the employees serving them have been fairly treated, there is a greater likelihood of favorable customer affect and intent toward the firm (Masterson 2001). Third, given that high levels of OI often trigger positive social emotional responses from employees (Elsbach 1998), it follows that customers may pick up on these manifestations in the form of employee politeness and cheerfulness. We thus predict that employee conscientiousness, justice, and OI will explain additional variance in customer evaluations beyond performances by tapping into other key inputs—employee self-presentation—that shape customer affect and intent.

Customer Evaluations, Customer Spending, and Comparable Store Sales Growth

We examine two store performance variables—customer spending and comparable store sales growth. Customer spending offers managers a quantitative metric to gauge the effectiveness of customer service and marketing efforts. We operationalize customer spending as average customer transaction value per store visit for a one-year period (ACTV). Comparable store sales growth (CSG) reflects same-store sales growth percentage from year to year. It is a common financial growth metric used by retail firms that reflects the overall financial health of the firm (Reichheld 2003). Three predictions with regard to ACTV and CSG are offered.

First, customers who are satisfied with a firm will increase their purchasing as a reflection of loyalty to the firm (Oliver 1997). Recent research also indicates that a customer evaluations variable (i.e., satisfaction) is related to customer purchasing (Kopalle and Lehmann 2006) and customer spending levels (Ho et al. 2006). Thus, the customer evaluations \rightarrow ACTV link is posited (Figure 2). Second, there is literature suggesting that the relationship between customer evaluations and purchases may not always be linear (Anderson and Mittal 2000, Mittal and Kamakura 2001), i.e., at the higher levels of satisfaction, the link to actual behavior may show increasing returns rather than a stable linear pattern. Would such an effect hold in the retail store environment of women's apparel? We think so. Consistent with the notion of customer "delight," in which the highest levels of customer affect/loyalty are likely, customers have little incentive to consider other stores. That is, when

buying (ACTV), the highly satisfied, loyal customer is less motivated to search for other alternatives and considers a much smaller set of brands or retailers (Anderson and Mittal 2000). In addition to its linear relation with ACTV, we expect customer evaluations to have a semi-"U"-shaped effect with ACTV—a positive quadratic effect, as depicted in Figure 2.

Third, we predict that customer evaluations will have an effect on comparable store sales growth (CSG) after accounting for the effect of ACTV. Store sales growth can be realized by: (1) higher transaction values (ACTV); and/or (2) more transaction occasions. This increased number of transactions can be due to satisfied, loyal customers engaging in more purchase transactions, and from the generation of new customers via favorable WOM. As noted by Reichheld (2003), highly satisfied, highly loyal customers become "apostles" of the firm. They increase sales growth through their reduced price sensitivity, which comes from being satisfied and loyal, and via favorable WOM to others (Rust et al. 2004). This leads customer evaluations to have an incremental effect on CSG, after accounting for the effect of ACTV.

Study Methods

Procedures and Measures of Focal Constructs

Overview. We gathered data from 306 retail store managers, 1,615 retail store service employees, and 57,656 customers from 306 stores of a 610-store multi-channel (i.e., online, catalog, and storefront) firm that sells women's clothing and accessories. We chose this setting because retail employees interact with customers, therefore shaping in-store atmosphere and customer experiences. This retailer also operates a wide variety of stores that vary in daily traffic, geographic location, and site location. Such variety allowed us to control for these variables although they are not the focus of our study. Data collection began by using stratified random sampling based on geographic region to select a sample of 306 stores.

Manager Data and Measures. We sent an online survey to the 306 lead managers (i.e., one per store) of the stores in our study. After one week, a reminder e-mail was sent to the managers that emphasized the importance of their responses. All 306 surveys were returned with complete responses across all study variables, yielding a 100% manager response rate. All managers were full time, with an average of 57 months in their current position ($\sigma = 29$ months); an average income of \$49,092 ($\sigma = \$7,157$); 73% were female; and 58% held college degrees.

Each store manager supervised an average of 5.7 employees (a range of 2 to 8) and rated each employee on three performance dimensions for the 2003–2004

period. In-role performance (EIRP) was measured with three items that assessed the tasks specified in the employee's formal job description ($\alpha = 0.97$); extra-role performance toward customers (ERPC) was measured with three items ($\alpha = 0.96$) adapted from Bettencourt et al. (2001); and extra-role performance toward the organization (ERPO) was also measured with three items ($\alpha = 0.96$) (Bettencourt and Brown 2003). All items were scored on seven-point scales and are provided in Appendix A. We used manager-rated measures of employee performances because potential antecedents of performances (conscientiousness, justice, and OI) were rated by employees, and potential outcomes (customer evaluations, ACTV, and CSG) were rated by customers or gathered electronically. Thus, by using manager ratings, the links between employee performances, their antecedents, and outcomes are free of same-source bias (Podsakoff et al. 2003).

Employee Data and Measures. We sent online surveys to the 1,956 employees of the 306 stores in our sample, with a cover letter expressing the value of employee responses. After one week, the employees were sent a reminder e-mail asking them to complete the survey. A total of 1,615 employees submitted completed surveys, yielding an 83% response rate. An average of five employees per store participated in the study, and the employee responses were matched to the manager and store data using the store number as a linking variable.

Employees rated themselves on an abbreviated measure of the Big 5 trait of conscientiousness (three items; $\alpha = 0.92$) (Goldberg 1992). Employee perceptions of distributive, procedural, and interactional justice were measured with four items each (Maxham and Netemeyer 2003). Because the correlations among all justice items ranged from 0.47 to 0.98 (average $r = 0.68$), we combined these items to form an overall global measure of justice ($\alpha = 0.96$). All conscientiousness and justice items were scored on seven-point scales. We assessed OI using a reduced form of the Sen and Bhattacharya (2001) measure. Although Sen and Bhattacharya use 40 scale items that assess self-perceptions and perceptions of the target company across 20 common traits, survey-length limitations precluded our use of the entire set of 40 scale items. We factor analyzed data on the full set of traits we collected in three separate pilot studies. Seven of the 20 traits consistently loaded on one factor that explained most of the variance in the data. Thus, we assessed perceptions of self and of the target company for the seven traits (14 scale items) and used the same Euclidean distance approach of Sen and Bhattacharya (2001) to create a single-item index of employee OI ($\alpha = 0.95$). Appendix A shows the employee measures.

Our employees had an average of 20 months' experience (tenure) ($\sigma = 10$ months); an average income of \$18,718 ($\sigma = \$5,303$); 56% were full time; 99% were female; and 38% held two- or four-year college degrees.

Customer Data and Measures. Our retail partner programmed its customer tracking system at the 306 stores to print a brief statement on randomly chosen customer receipts at the time of checkout. The statement invited customers to visit a research-specific website and complete a survey in exchange for a 20% discount on their next purchase. After submitting the survey online, the participating customers received a printable coupon with a bar code discount number. Customers could redeem the coupon by either presenting the printed coupon upon checkout or presenting the discount number to the checkout representative. Our sample design entailed stores with more store traffic being sent proportionally more invitations than stores with less traffic. We initially sent 61,200 customer invitations (an average of 200 per store), but then sequentially sent additional invitations each week, depending on response rates, in an attempt to yield a proportional sample. The checkout representatives were instructed to personally invite customers who received the receipt invitation when completing the transaction.

Overall, we sent 186,744 survey invitations and received 57,656 completed responses, yielding an average of 188 completed customer responses per store (sample sizes per store ranged from 88 to 231). The response rate across the 306 stores ranged from 21% to 63%, resulting in a 31% overall customer response rate. For the 2003–2004 period, we gathered two-item measures of customer satisfaction ($r = 0.98$ between items), intent to future purchase ($r = 0.96$ between items), loyalty ($r = 0.97$ between items), and intent to spread favorable WOM ($r = 0.96$ between items)—eight items total scored on seven-point scales. (See Appendix A.) From these eight items, we constructed one overall customer evaluations composite ($\alpha = 0.97$). We matched customer surveys to the employee, manager, and store data using the store number as a linking variable. That is, 57,656 customer surveys were fully matched specifically to the exact store where they made their purchases and received the survey invitation. The customers were an average of 48 years old ($\sigma = 15.66$ years); 78% were female; and 69% held college degrees.¹

¹ Three notes about our employee, manager, and customer measures are in order. We combined all justice items into one construct for several reasons. First, although some suggest that the justice dimensions are distinct (Cohen-Charash and Spector 2001), others show that the dimensions can be combined to form one overall justice construct (Brockner et al. 1997). Second, confirmatory

Table 1 Means (M), Standard Deviations (SD), and Correlations Among Focal Constructs

	M	SD	1	2	3	4	5	6	7	8	9
Employee-rated											
(1) Conscientiousness	4.02	1.51	1.00								
(2) Justice	4.24	1.70	0.76	1.00							
(3) Organizational identification	−3.97	2.23	0.69	0.71	1.00						
Manager-rated											
(4) Employee in-role performance	3.61	1.89	0.72	0.80	0.67	1.00					
(5) Employee extra-role org. performance	3.77	1.94	0.73	0.78	0.67	0.73	1.00				
(6) Employee extra-role customer performance	4.27	1.95	0.72	0.80	0.68	0.74	0.73	1.00			
Customer-rated											
(7) Customer evaluations	4.05	0.44	0.57	0.64	0.56	0.64	0.59	0.60	1.00		
Store records											
(8) Average customer transaction value	71.82	13.73	0.35	0.39	0.30	0.45	0.40	0.35	0.62	1.00	
(9) Comparable store sales growth	27.85	16.14	0.43	0.42	0.43	0.44	0.44	0.39	0.61	0.70	1.00

Notes. Correlations among the employee-rated and manager-rated variables are based on $n = 1,615$; all other correlations are based on $n = 306$. All correlations are significant at the 0.01 level. The mean for comparable store sales growth is the percentage change from 2003 to 2004.

Customer Spending and Comparable Store Sales Growth. We queried the retailer's database to extract store performance variables. To account for potential time lags that might be present in translating manager, employee, and customer perceptions into store performance, we identified two variables that offer different, yet related, perspectives of store performance. From each of the 306 participating stores we accessed: (1) average transaction value of customers per visit in 2003–2004 (ACTV); and (2) comparable store percentage sales growth from 2003–2004 (CSG).

factor analyses showed that the distributive, procedural, and interactional justice items fit a higher-order factor model well ($\chi^2 = 25.78$, $df = 24$, $CFI = 1.00$, $NNFI = 1.00$, $RMSEA = 0.01$) (Hu and Bentler 1995), and were strongly related to a higher-order justice construct (standardized loadings of 0.73, 0.78, and 0.95). Third, the correlations of the justice dimensions with outcomes (employee performances and customer evaluations) were identical across dimensions, and the combined justice items resulted in a highly reliable scale ($\alpha = 0.96$).

We treated our employee performance constructs as three separate dimensions because the literature strongly suggests a distinction between in-role and extra-role performances (e.g., Borman and Motowidlo 1993). We estimated a confirmatory factor model specifying EIRP, ERPC, and ERPO as three distinct, but correlated, constructs. This model fit well ($\chi^2 = 34.50$, $df = 24$, $CFI = 1.00$, $NNFI = 1.00$, $RMSEA = 0.02$) and showed strong evidence of discriminant validity among the three performance dimensions (Fornell and Larcker 1981).

Finally, we combined customer satisfaction, intent, loyalty, and WOM into one construct because: (1) internal consistency among satisfaction, intent, loyalty, and WOM items was high ($\alpha = 0.97$); (2) an exploratory factor analysis could extract only one factor for these items (eigenvalue = 6.96, explained variance = 0.87; loadings ranged from 0.92–0.95); and (3) the correlations of all other variables in our model with customer satisfaction, intent, loyalty, and WOM were identical.

Table 1 shows summary statistics and correlations for our focal study constructs in which items for multi-item measures were summed and then averaged to form seven-point composites.

Control Variable Measures. Although the focus of our study is on the system of relations among employee perceptions, employee performances, customer evaluations, and store performance, there are other variables that could impact the estimates among these constructs. Prior studies suggested several potential control variables (covariates) to include in our models (Loveman 1998, Mittal and Kamakura 2001, Seiders et al. 2005).

From store employees, we had them rate their job satisfaction (three items; $\alpha = 0.92$) and affective organizational commitment (three items; $\alpha = 0.92$) using seven-point scales. These two variables were used as control variables for the prediction of employee performances. We also included employee job tenure as a control variable for the prediction of performances because those who have been on the job longer may have learned to perform better. We obtained a seven-item measure of store manager performance at the store level ($n = 306$) that assessed the degree to which managers motivated, trained, inspired, and retained employees, and the degree to which store managers handled the day-to-day functioning of store merchandising, inventory management, and handled store risk management. All items were seven-point scales rated by the store manager's immediate superior, i.e., their district managers ($\alpha = 0.96$). This measure was used as a control variable in predicting employee performances.

From customers we gathered measures of gender, age, education, income, and length of time the customer had patronized the retailer. We used these variables as control variables for the prediction of customer evaluations, because they have been shown to be related to customer affect and intent (Bolton 1998, Mittal and Kamakura 2001, Reinartz and Kumar 2003). Given that store managers play a role in shaping how customers view the store, store manager performance was also used as a control variable for the prediction of customer evaluations. Finally, the retail chain provided us with the store characteristics of store site location (i.e., metropolitan streetfront, strip center, mall, stand-alone, and factory outlet), geographic location (northwest, northeast, midwest, mid-Atlantic, southwest, southeast), and average daily store traffic (i.e., average number of people going into each store per day). The store characteristics, the averaged customer demographic variables, and store manager performance were used as control variables in the prediction of ACTV and CSG.²

Analyses Overview

Given the goals of our study and the nature of our data, we used a two-technique approach to analyze our data. First, for relationships at the individual data levels—employee, customer, and store—we used hierarchical linear modeling (HLM) (Raudenbush and Bryk 2002). HLM considers data that are “nested” at different levels when deriving parameter estimates. Recall that employee perceptions and performances were gathered at the employee level ($n = 1,615$) and store manager performance was gathered at store level ($n = 306$). Thus, to allow store manager performance to be a control variable for predicting employee performances at the store level, HLM was needed. HLM allows store manager performance to vary (be a predictor) across stores, and its coefficient is reflected in the coefficients for the other predictors of employee performances. The same approach is used for customer evaluations at the customer level ($n = 57,656$). Here, the customer demographics are assessed at the customer level, and employee perceptions, employee performances (aggregated at the store level), and store manager performance are at the store level ($n = 306$). Thus, the coefficients of all predictors reflect the nested nature of the data for the prediction of customer evaluations at the customer level. Finally,

to examine the relations among ACTV, CSG, customer evaluations, and control variables, all data involved had to be aggregated at the store level. In this case, HLM holds little advantage over other correlational techniques. However, to maintain consistency with analyses at the other individual data levels, HLM is used for the relationships among customer evaluations, ACTV, CSG, and the control variables.³

The second technique we use to analyze our data focuses on the entire system of relationships in a “gestalt” fashion. We average and/or aggregate all study variables at the store level ($n = 306$) and estimate a structural equations path model (SEM) via LISREL8 (Joreskog and Sorbom 1996). Although this approach does not consider heterogeneity in the dependent variables (see Footnote 3), it does have the advantage of showing if and how much effects might “ripple through the system,” i.e., the indirect and total effects of employee perceptions, performances, and customer evaluations on store performance. Still, we checked to see if aggregation of the data was empirically justified. We used the procedures of James et al. (1984) and calculated $r_{wg(j)}$ coefficient for each multi-item employee-, manager-, and customer-rated measure (and for the manager performance measure rated by district managers). This coefficient ranges zero to one and is a measure of interrater reliability for each retail store. This coefficient compares the amount of variance in observed responses with that that would be obtained if responses were random. Higher values represent stronger agreement among stores—the higher the value, the more data aggregation is justified. The values for all multi-item measures ranged from 0.87 to 0.93—values that are typically above those reported in the literature to justify aggregation (James et al. 1984).

Predictive Equations and Results at the Individual Data Levels

Employee Performances as Outcomes

Consistent with our predictions and Figure 2, for each employee performance outcome, we estimated

² The store site and geographic location variables were coded as 0, 1 dummy variables for the prediction of ACTV and CSG. ANOVAs showed that ACTV and CSG mean levels did not vary by site ($p = 0.39$) or geographic location ($p = 0.89$), nor were these two variables significantly related to any other variable in any model we estimated. The dummy code for site location was: 0 = metropolitan streetfront and mall; and 1 = stand-alone and factory outlet for site location. The dummy code for geographic location was: 0 = northwest, northeast, and midwest; and 1 = mid-Atlantic, southwest, and southeast for geographic location.

³ A few notes about HLM are in order. First, nested data may produce similarity of responses within levels, but variation across levels. In such a case, the independence of observations assumption of regression models may be violated, which can produce underestimated standard errors. Second, HLM produces an intraclass correlation coefficient (ICC). ICC is a measure of heterogeneity assessing the amount of variation in an outcome variable due to the store as opposed to another data level. Across employee performances, ICC ranged from 0.11 to 0.13 ($p < 0.01$). For customer evaluations, the ICC was 0.05 ($p < 0.01$). Thus, small amounts of variance in employee performances and customer evaluations are due to between-store differences. Still, the coefficients we report in Tables 2–4 were highly similar to the coefficients of our aggregated SEM path model.

models that predicted main and interaction effects of employee conscientiousness, justice, and organizational identification (OI) via HLM6 (Raudenbush and Bryk 2002). These focal predictors, performance outcomes, and some of the control variables (employee tenure, job satisfaction, and organizational commitment) were assessed at the employee level ($n = 1,615$), and the store manager performance control variable was assessed at the store level ($n = 306$). Thus, the models we estimate are unconditional two-level models that account for the nested nature of employee ratings of performances by managers and store manager performance as a control variable at the store level. All focal predictor variables and control variables were mean centered. Mean-centered employee conscientiousness, justice, and OI were used to create mean-centered product terms for the hypothesized interaction effects (Snijders and Bosker 1999). For each employee performance variable outcome, the HLM equations are shown below.

The Level 1 models are:

$$\begin{aligned} \text{EIRP}_{ij} = & \beta_{0j} + \beta_{1j}(\text{Conscientiousness}) + \beta_{2j}(\text{Justice}) \\ & + \beta_{3j}(\text{OI}) + \beta_{4j}(\text{Justice} * \text{Conscientiousness}) \\ & + \beta_{5j}(\text{OI} * \text{Conscientiousness}) \\ & + \beta_{6j}(\text{Employee Tenure}) \\ & + \beta_{7j}(\text{Job Satisfaction}) \\ & + \beta_{8j}(\text{Organizational Commitment}) + \varepsilon_{ij}. \end{aligned}$$

$$\begin{aligned} \text{ERPC}_{ij} = & \beta_{0j} + \beta_{1j}(\text{Conscientiousness}) + \beta_{2j}(\text{Justice}) \\ & + \beta_{3j}(\text{OI}) + \beta_{4j}(\text{Justice} * \text{Conscientiousness}) \\ & + \beta_{5j}(\text{OI} * \text{Conscientiousness}) \\ & + \beta_{6j}(\text{Employee Tenure}) \\ & + \beta_{7j}(\text{Job Satisfaction}) \\ & + \beta_{8j}(\text{Organizational Commitment}) + \varepsilon_{ij}. \end{aligned}$$

$$\begin{aligned} \text{ERPO}_i = & \beta_{0j} + \beta_{1j}(\text{Conscientiousness}) + \beta_{2j}(\text{Justice}) \\ & + \beta_{3j}(\text{OI}) + \beta_{4j}(\text{Justice} * \text{Conscientiousness}) \\ & + \beta_{5j}(\text{OI} * \text{Conscientiousness}) \\ & + \beta_{6j}(\text{Employee Tenure}) \\ & + \beta_{7j}(\text{Job Satisfaction}) \\ & + \beta_{8j}(\text{Organizational Commitment}) + \varepsilon_{ij}. \end{aligned}$$

The Level 2 model, which is the same for EIRP, ERPC, and ERPO, is:

$$\beta_{0j} = \gamma_{00} + \gamma_{01}(\text{Store Manager Performance}) + \mu_{0j},$$

where EIRP is employee in-role performance, ERPC is employee extra-role performance toward the customer, and ERPO is employee extra-role performance

toward the organization; i and j subscripts are the employee and store levels, respectively, and β_{0j} (intercept) is the average employee performance adjusted for differences in Level 1 predictors. Given that all predictors are mean centered at "0," β_{0j} is equal to EIRP_{ij} , ERPC_{ij} , and ERPO_{ij} —the predicted average values for each performance variable. β_{1j} through β_{8j} are the effects of each predictor on employee performances adjusted for the Level 2 effects of mean-centered store manager performance on employee performance (γ_{01}).

The top portion of Table 2 shows the results for the prediction of employee in-role performance (EIRP). As expected, employee conscientiousness, justice, and OI were significantly related to EIRP. The justice * conscientiousness interaction was also significant, but the OI * conscientiousness interaction received only directional support ($p < 0.10$). Still, the hypothesized predictors and control variables explained about 71% of the variance in EIRP. The middle portion of Table 2 shows the results for extra-role performance toward customers (ERPC). Employee conscientiousness, justice, and OI were significantly related to ERPC, as was the justice * conscientiousness interaction. The OI * conscientiousness interaction was not significant. The entire set of predictors explained about 69% of the variance in ERPC. The bottom portion of Table 2 shows the results for ERPO. Again, employee conscientiousness, justice, and OI were related to extra-role performance toward the organization. Further, both predicted interactions with conscientiousness were supported. This model explained 69% of the variance in ERPO.

Customer Evaluations as an Outcome

For customer evaluations, we estimated a two-level model. Customer evaluations and the mean-centered customer demographic control variables were assessed at Level 1 and the mean-centered employee performance variables of EIRP, ERPC, and ERPO (focal predictors) at Level 2. Consistent with Figure 2, the HLM equations for customer evaluations are shown below.

The Level 1 model is:

$$\begin{aligned} \text{Customer Evaluations}_{ij} = & \beta_{0j} + \beta_{1j}(\text{Customer Age}) + \beta_{2j}(\text{Customer Education}) \\ & + \beta_{3j}(\text{Customer Gender}) + \beta_{4j}(\text{Customer Tenure}) \\ & + \beta_{5j}(\text{Customer Income}) + \varepsilon_{ij}. \end{aligned}$$

The Level 2 model is:

$$\begin{aligned} \beta_{0j} = & \gamma_{00} + \gamma_{01}(\text{EIRP}) + \gamma_{02}(\text{ERPC}) + \gamma_{03}(\text{ERPO}) \\ & + \gamma_{04}(\text{Employee Tenure}) \\ & + \gamma_{05}(\text{Store Manager Performance}) + \mu_{0j}, \end{aligned}$$

Table 2 Employee Performance Variables as Outcomes—Employee Level ($n = 1,615$)

	Unstandardized coeff.	t-ratio
Employee in-role performance (EIRP)		
Predictor		
Employee conscientiousness	0.20	7.25**
Employee justice	0.48	16.02**
Employee OI	0.14	6.98**
Justice * conscientiousness	0.06	3.99**
OI * conscientiousness	0.02	1.54
Control variables		
Employee tenure	0.00	0.25
Employee job satisfaction	0.11	5.96**
Employee organizational commitment	0.08	4.53**
Store manager performance	0.07	2.97**
Employee extra-role performance toward customers (ERPC)		
Predictor		
Employee conscientiousness	0.22	7.63**
Employee justice	0.52	15.55**
Employee OI	0.15	7.66**
Justice * conscientiousness	0.04	2.17*
OI * conscientiousness	0.01	1.18
Control variables		
Employee tenure	0.00	0.00
Employee job satisfaction	0.08	3.90**
Employee organizational commitment	0.08	3.83**
Store manager performance	0.00	0.02
Employee extra-role performance toward the organization (ERPO)		
Predictor		
Employee conscientiousness	0.26	8.35**
Employee justice	0.44	14.31**
Employee OI	0.15	6.59**
Justice * conscientiousness	0.06	3.53**
OI * conscientiousness	0.02	2.05*
Control variables		
Employee tenure	0.00	0.24
Employee job satisfaction	0.10	5.27**
Employee organizational commitment	0.09	4.83**
Store manager performance	0.05	2.24*

*Significant at $p < 0.05$; **significant at $p < 0.01$.

where the i and j subscripts are the customer and store levels, respectively, and β_{0j} (intercept) is average customer evaluations adjusted for differences in Level 1 predictors. Given that all predictors are mean centered at 0, β_{0j} is equal to *Customer Evaluations_{ij}*—the predicted average value for customer evaluations. β_{1j} through β_{5j} are the effects of each customer demographic on customer evaluation adjusted for the Level 2 effects of EIRP, ERPC, and ERPO, employee tenure, and store manager performance on customer evaluations ($\gamma_{01} - \gamma_{05}$).

As shown in the top portion of Table 3, EIRP and ERPC were significant predictors of customer evaluations, but ERPO was not. In conjunction with the control variables, EIRP and ERPC explained about 53% of the variance in customer evaluations.

We predicted that employee perceptions would have incremental effects on customer evaluations

Table 3 Customer Evaluations and Average Customer Transaction Value (ACTV) as Outcomes

	Unstandardized coeff.	t-ratio
Customer evaluations model - Customer level ($n = 57,656$)		
Predictor		
Employee in-role performance (EIRP)	0.10	3.13**
Employee extra-role performance – Cust. (ERPC)	0.08	2.68**
Employee extra-role performance – Org. (ERPO)	0.04	1.20
Control variables		
Employee tenure	0.01	1.98*
Store manager performance	0.13	7.58**
Customer gender	0.02	0.96
Customer age	0.00	1.32
Customer education	0.02	1.25
Customer income	–0.01	0.31
Customer tenure	0.00	0.96
Average customer transaction value (ACTV) model – Store level ($n = 306$)		
Predictor		
Customer evaluations	12.79	6.59**
Customer evaluations ²	22.82	8.41**
Control variables		
Store manager performance	3.99	6.37**
Customer gender	12.51	0.66
Customer age	0.57	1.10
Customer education	0.19	0.01
Customer income	–5.11	0.71
Customer tenure	–0.17	1.01
Store site location	0.91	0.73
Store geographic region	1.41	1.15
Store day traffic	0.16	5.18**

*Significant at $p < 0.05$; **significant at $p < 0.01$.

beyond the effects of the employee performance variables. This prediction implies that the effects of employee perceptions are not fully mediated by employee performances. We examined this mediating prediction. We first estimated a model in which mean-centered employee conscientiousness, justice, and OI were predictors of customer evaluations with the control variables, but without employee performances as predictors. Their coefficients (t -ratios) were 0.00 (0.09, ns), 0.20 (5.78, $p < 0.01$), and 0.03 (1.03 ns), respectively. Thus, only justice was directly related to customer evaluations—a necessary condition for evidence of mediation (Shrout and Bolger 2002). We then estimated a model that added mean-centered employee conscientiousness, justice, and OI as predictors of customer evaluations with the control variables and with employee performances as predictors. Justice again was the only employee perception that was related to customer evaluations ($\beta = 0.12$, $t = 2.66$, $p < 0.05$) after accounting for the effects of the performance variables. Neither employee conscientiousness nor OI were related to customer evaluations in this model ($\beta = -0.03$ and $\beta = 0.02$, $p > 0.10$). In sum, the effect of justice on customer evaluations was partially mediated by employee performances

($p < 0.05$), and our prediction that the employee perceptions would have incremental effects on customer evaluations was only partially supported, i.e., only justice showed the predicted effect.

To test our prediction that ERPC would have a stronger effect on customer evaluations than would EIRP or ERPO, we estimated a series of constrained and unconstrained HLM models. An unconstrained model freely estimates the effects of each predictor on the outcome variable. The constrained model constrains the effects of two predictors on the outcome variable to be equal. The χ^2 difference between the unconstrained and constrained models tests the difference in relative strength between two predictors (Snijders and Bosker 1999). The model results shown in the top portion of Table 3 represent the unconstrained model ($\chi^2 = 1,510.81$), and it produced coefficients of 0.10, 0.08, and 0.04 for EIRP, ERPC, and ERPO, respectively. For comparing the effect of ERPC to EIRP, the constrained models' χ^2 (1,511.89) was not significantly different from the unconstrained model's χ^2 (χ^2 difference = 1.08, $p > 0.10$). For comparing the effect of ERPC to ERPO, the constrained model χ^2 was 1,518.66 and the difference in χ^2 between the unconstrained and constrained models was significant (χ^2 difference = 7.85, $p < 0.01$). Thus, the effect of ERPC on customer evaluations was greater than the effect of ERPO, but ERPC and EIRP had equal effects on customer evaluations.

ACTV and CSG as Outcomes

Average customer transaction value (ACTV) and comparable store sales growth (CSG) were gathered at the store level only ($n = 306$), as were the control variables of store site location, geographic location, day traffic, and store manager performance. Customer evaluations and the customer demographic control variables, however, were gathered at the customer level ($n = 57,656$). To estimate HLM models for the prediction of ACTV and CSG, average scores on all customer variables had to be created at the store level and then matched to ACTV and CSG. Thus, our HLM models are unconditional Level 1 models with aggregated ACTV, CSG, customer evaluations, and all control variables at the store level.

For the prediction of ACTV, customer evaluations and all control variables were mean centered. Mean-centered customer evaluations was used to create the mean-centered customer evaluations quadratic (product) term. For the prediction of CSG, we mean centered ACTV as well. The relationships among customer evaluations, the customer evaluations quadratic term, ACTV, and CSG (and control variables) are depicted in Figure 2. The HLM predictive equations for ACTV and CSG are shown below.

The Level 1 model for ACTV is:

$$\begin{aligned} \text{ACTV}_{ij} &= \beta_{0j} + \beta_{1j}(\text{Customer Evaluations}) \\ &\quad + \beta_{2j}(\text{Customer Evaluations}^2) \\ &\quad + \beta_{3j}(\text{Store Manager Performance}) \\ &\quad + \beta_{4j}(\text{Customer Gender}) + \beta_{5j}(\text{Customer Age}) \\ &\quad + \beta_{6j}(\text{Customer Income}) + \beta_{7j}(\text{Customer Tenure}) \\ &\quad + \beta_{8j}(\text{Store Site Location}) \\ &\quad + \beta_{9j}(\text{Store Geographic Location}) \\ &\quad + \beta_{10j}(\text{Store Day Traffic}) + \varepsilon_{ij}, \end{aligned}$$

where ACTV is average customer transaction value; the i and j subscripts are both at the store level; and β_{0j} (intercept) is the average ACTV adjusted for Level 1 predictors. Given that all predictors are mean centered at 0, β_{0j} is equal to ACTV_{ij} —the predicted average value for ACTV. β_{1j} through β_{10j} are the effects of each predictor on ACTV.

The Level 1 model for CSG is:

$$\begin{aligned} \text{CSG}_{ij} &= \beta_{0j} + \beta_{1j}(\text{ACTV}) + \beta_{2j}(\text{Customer Evaluations}) \\ &\quad + \beta_{3j}(\text{Store Manager Performance}) \\ &\quad + \beta_{4j}(\text{Customer Gender}) + \beta_{5j}(\text{Customer Age}) \\ &\quad + \beta_{6j}(\text{Customer Income}) + \beta_{7j}(\text{Customer Tenure}) \\ &\quad + \beta_{8j}(\text{Store Site Location}) \\ &\quad + \beta_{9j}(\text{Store Geographic Location}) \\ &\quad + \beta_{10j}(\text{Store Day Traffic}) + \varepsilon_{ij}, \end{aligned}$$

where CSG is comparable store sales growth; the i and j subscripts are both at the store level; and β_{0j} (intercept) is the average CSG adjusted for Level 1 predictors. Given that all predictors are mean centered at 0, β_{0j} is equal to CSG_{ij} —the predicted average value for CSG. β_{1j} through β_{10j} are the effects of each predictor on CSG.

As the bottom portion of Table 3 shows, both customer evaluations and its quadratic effect (Customer Evaluations²) were positively related to ACTV. A plot of the quadratic effect showed, as expected, a semi-U shape in which increasing returns on ACTV were apparent when customer evaluations were greater than or equal to five on its seven-point scale. With the control variables included as predictors, about 56% of the variance in ACTV was explained.

For the prediction of CSG, we expected that customer evaluations would explain incremental variance in CSG while controlling for the variance accounted

Table 4 Comparable Store Sales Growth (CSG) as the Outcome Store Level ($n = 306$)

	Unstandardized coeff.	t-ratio
Comparable store sales growth (CSG): Model 1		
Predictor		
Average customer transaction value	0.34	9.01**
Control variables		
Store manager performance	3.40	6.95**
Customer gender	20.31	1.09
Customer age	−0.18	0.43
Customer education	12.08	0.97
Customer income	0.57	0.10
Customer tenure	−0.05	0.36
Store site location	−0.50	0.46
Store geographic region	0.35	0.36
Store day traffic	0.15	5.21**
Comparable store sales growth (CSG): Model 2		
Predictor		
Average customer transaction value	0.28	7.11**
Customer evaluations	5.37	3.04**
Control variables		
Store manager performance	2.75	5.14**
Customer gender	20.31	1.09
Customer age	−0.20	0.47
Customer education	13.44	1.09
Customer income	1.29	0.24
Customer tenure	−0.05	0.38
Store site location	−0.78	0.73
Store geographic region	0.43	0.44
Store day traffic	0.13	4.92**

*Significant at $p < 0.05$; **significant at $p < 0.01$.

for by ACTV. We first estimated a model where ACTV was the sole focal predictor of CSG—Comparable Store Sales Growth (CSG): Model 1. As the top portion of Table 4 shows, ACTV was related to CSG, explaining about 59% of the variance in CSG. We then estimated a second model, Comparable Store Sales Growth (CSG): Model 2, that added customer evaluations as a predictor of CSG. The bottom portion of Table 4 shows that customer evaluations was significant, and explained an additional 2% of the variance CSG.⁴

Simulations at the Individual Level of Data

Although the results presented in Tables 2–4 support the theoretically based relations among key antecedents and outcomes at the individual data level, from a managerial perspective, getting an idea of how

to best maximize a desirable outcome is of interest. For example, managers may have to make trade-offs concerning which employee perception to maximize to enhance employee performances, and which employee performance dimension to stress to enhance customer evaluations and store financial outcomes (e.g., Reinartz et al. 2005). As noted by Rust et al. (2004), connecting “drivers” such as employee perceptions and performances to customer evaluations and financial performance is essential to quantify their effects for managerial actions.

Similar to the work of Coughlan (1985) and Reinartz et al. (2005), we conducted some simple simulations for the main effects of employee perceptions on employee performances, for the main effects of employee performances on customer evaluations, and for the main effects of customer evaluations on ACTV and CSG. HLM unstandardized coefficients are interpreted in the same manner as unstandardized regression coefficients—the change in the dependent variable associated with a unit change in an independent variable, holding the effects of the other independent variables constant at their mean levels. Thus, we used the HLM equations previously presented and the predictive coefficients of Tables 2–4 to assess which of the focal predictor variables would have the strongest impact on mean levels of the outcome variables.

For in-role employee performance (EIRP), raising justice perceptions by a value of one on its seven-point scale (holding all other predictors constant at their mean levels) increases average EIRP from 3.61 to 4.09. Corresponding increases associated with conscientiousness and OI were from 3.61 to 3.81 and 3.61 to 3.75. For extra-role performance toward customers (ERPC), raising justice perceptions by a value of one (holding all other predictors at their means) increases average ERPC from 4.27 to 4.79. Corresponding increases associated with conscientiousness and OI were from 4.27 to 4.49 and 4.27 to 4.42. For extra-role performance toward the organization (ERPO), raising justice perceptions by a value of one (holding all other predictors at their means) increases average ERPC from 3.77 to 4.21. Corresponding increases associated with conscientiousness and OI were from 3.77 to 4.03 and 3.77 to 3.92. These effects clearly indicate the value to managers of raising perceptions of organizational justice vis-à-vis hiring conscientious employees or those who identify with the firm.

To maximize customer evaluations based on employee performances, our data suggests that it is equally effective to raise either EIRP or ERPC. Raising EIRP by a value of one on its seven-point scale (holding all other predictors constant at their means)

⁴ We also examined the potential for direct effects (not mediated by customer evaluations) of averaged and/or aggregated employee performances on ACTV. None were significant with customer evaluations (β s range from −1.18 to 1.61, t -values range from 0.11 to 1.60 ($p > 0.10$) or without customer evaluations as a predictor of ACTV (β s range from −2.18 to 1.91, t -values range from 0.19 to 1.64 ($p > 0.09$)). Similar nonsignificant results for the direct effects of employee performances on CSG (with or without customer evaluations and ACTV as predictors) were found. Thus, there were no direct effects of employee performances on ACTV or CSG to mediate.

is associated with an average predicted value for customer evaluations of 4.15 (up from its mean of 4.05). Raising ERPC by a value of one (holding all other predictors constant at their means) is associated with an average predicted value of 4.13 (up from its mean of 4.05).

Finally, and most managerially interesting, are the results pertaining to store performance. A one-point increase on the customer evaluations seven-point scale (raising it from 4.05 to 5.05) is associated with a \$12.79 increase in ACTV, holding all other predictors constant at their mean levels. This represents a 15% increase in customer spending per visit. Further, this same one-point increase in customer evaluations is associated with a 5.37% increase in CSG, holding all other predictors (including ACTV) constant at their mean levels. This effectively represents a 16% increase in store sales growth (27.85% to 34.22%) in one year's time, highlighting the importance of maximizing customer affect and intentions.

Results of the Aggregated Data Path Model

Although the individual data-level analyses reveal the strength of important direct relationships in the value chain, how effects might “ripple through the system”—indirect and total effects—are of interest. Indirect effects represent the effects of variables at or near the beginning of the system (employee perceptions and performances) on variables at the end of the system (ACTV and CSG) that may be fully or partially mediated by variables in the middle of the system (customer evaluations) (Bollen 1989). For example, although the direct effects (paths) of employee performances on ACTV and CSG were non-significant (Footnote 4), their indirect paths (employee performances → customer evaluations → ACTV) may be significant. Likewise, total effects represent the cumulative effect (the sum of the direct and indirect effects) of a variable at or near the beginning of the chain on a variable at the end of the chain (Bollen 1989).

Thus, to estimate the entire system of relationships and examine indirect and total effects, we averaged or aggregated data at the employee and customer levels to the store level ($n = 306$) and estimated a structural equations (SEM) path model via LISREL8 (Joreskog and Sorbom 1996). For all multi-item variables, summed and averaged single-item composites were used and all composites were mean centered. (We also mean centered all control variables.) Mean-centered employee conscientiousness, justice, and OI were used to create product terms for their interaction effects, and mean-centered customer evaluations was squared to create a customer evaluations

Table 5 Aggregated Data Path Model Estimates at the Store Level ($n = 306$)

Predicted paths	Path estimates Unstandardized/ standardized	t-ratio
Employee performances as outcomes:		
Employee conscientiousness → EIRP	0.17/0.14	2.56**
Employee justice → EIRP	0.54/0.48	8.07**
Employee OI → EIRP	0.07/0.09	1.71*
Justice * conscientiousness → EIRP	0.02/0.01	0.28
OI * conscientiousness → EIRP	0.04/0.06	1.01
Employee conscientiousness → ERPC	0.22/0.18	3.14**
Employee justice → ERPC	0.48/0.43	6.19**
Employee OI → ERPC	0.17/0.21	3.76**
Justice * conscientiousness → ERPC	0.07/0.07	1.19
OI * conscientiousness → ERPC	0.02/0.02	0.39
Employee conscientiousness → ERPO	0.27/0.21	3.74**
Employee justice → ERPO	0.45/0.40	6.19**
Employee OI → ERPO	0.08/0.10	1.79*
Justice * conscientiousness → ERPO	0.00/0.00	0.02
OI * conscientiousness → ERPO	0.01/0.01	0.23
Customer evaluations as the outcome:		
EIRP → customer evaluations	0.10/0.24	3.07**
ERPC → customer evaluations	0.08/0.19	2.69**
ERPO → customer evaluations	0.04/0.10	1.30
Average customer transaction value (ACTV) as the outcome:		
Customer evaluations → ACTV	12.79/0.35	7.41**
Customer evaluations ² → ACTV	22.82/0.28	7.35**
Comparable store sales growth (CSG) as the outcome:		
ACTV → CSG	0.28/0.33	6.39**
Customer evaluations → CSG	5.37/0.17	3.54**
R ² - EIRP	0.79	
R ² - ERPC	0.75	
R ² - ERPO	0.76	
R ² - Customer evaluations	0.55	
R ² - Average customer transaction value (ACTV)	0.59	
R ² - Comparable store sales growth (CSG)	0.62	

*Significant at $p < 0.05$; **significant at $p < 0.01$.

quadratic term. We then estimated all relationships—main, interaction, quadratic, and control variables—simultaneously. Table 5 shows the results for the predicted paths and Appendix B shows the control variable paths.⁵

⁵ LISREL has the advantage of assessing the potential biasing impact of construct measurement error on path estimates. We estimated such a model via the procedures developed by Joreskog and Sorbom (1982), in which the measurement loading for each composite variable is set to the square root of its internal consistency estimate (coefficient α), and its measurement error term is set to $(1 - \alpha) * (\text{construct variance})$. To incorporate the potential impact of measurement error into the interaction and quadratic terms, Ping's (1995) procedure for single-item composites was used. The estimates for this model were highly similar (almost identical) to those shown in Table 5. The only difference was that the employee OI → EIRP path was not significant in the model incorporating measurement error ($\beta = 0.05$, $t = 1.41$). Given this high similarity

This model fit the data well ($\chi^2 = 186.57$, $df = 77$, $CFI = 0.97$, $NNFI = 0.91$, $RMSEA = 0.06$), and the main effects of employee conscientiousness, justice, and OI on all performance variables were significant. All interaction effects, however, were nonsignificant (to be discussed later). As with the HLM models, with the exception of the ERPO \rightarrow customer evaluations path, the employee performance variables were related to customer evaluations. Finally, the system of relationships among employee performances, customer evaluations, and store performance variables was supported. In essence, the main effects of the aggregated model mirror those found at the individual data levels in terms of significance and path strength.⁶

What is more important, however, are the indirect and total effects that the estimation of the aggregated model reveals. Table 6 shows these results. As can be seen, all employee perceptions—conscientiousness, justice, and OI—had significant indirect effects on customer evaluations, ACTV, and CSG. What are particularly striking are the indirect effects of justice on ACTV and CSG. A one-point increase in employee justice is associated with an indirect increase in customer spending of \$1.43 per store visit and a comparable store sales growth increase of 1.00%. Employee in-role performance (EIRP) and extra-role performance toward customers (ERPC) had significant indirect effects on ACTV and CSG. A one-point increase in EIRP is associated with an increase of \$1.28 in customer spending and an increase in comparable store sales growth of nine-tenths of a percent. Similarly, a one-point increase in ERPC is associated with

Table 6 Indirect and Total Effects of Aggregated Data Path Model at the Store Level ($n = 306$)

	Path estimates Unstandardized/ standardized	t-ratio
Indirect effects of employee perceptions:		
Employee conscientiousness \rightarrow customer evaluations	0.05/0.09	3.90**
Employee conscientiousness \rightarrow ACTV	0.59/0.03	3.45**
Employee conscientiousness \rightarrow CSG	0.41/0.03	3.28**
Employee justice \rightarrow customer evaluations	0.11/0.24	7.45**
Employee justice \rightarrow ACTV	1.43/ 0.08	5.24**
Employee justice \rightarrow CSG	1.00/0.07	4.69**
Employee OI \rightarrow customer evaluations	0.02/0.07	3.20**
Employee OI \rightarrow ACTV	0.32/0.02	2.93**
Employee OI \rightarrow CSG	0.22/0.02	2.82**
Indirect effects of employee performances:		
Employee EIRP \rightarrow ACTV	1.28/0.08	2.83**
Employee EIRP \rightarrow CSG	0.90/0.07	2.74**
Employee ERPC \rightarrow ACTV	1.05/0.07	2.53*
Employee ERPC \rightarrow CSG	0.73/0.06	2.46*
Employee ERPO \rightarrow ACTV	0.52/0.03	1.28
Employee ERPO \rightarrow CSG	0.36/0.03	1.27
Indirect effect of customer evaluations:		
Customer evaluations \rightarrow CSG	3.58/0.12	4.83**
Total effect of customer evaluations:		
Customer evaluations \rightarrow CSG	8.95/0.29	6.03**

*Significant at $p < 0.05$; **significant at $p < 0.01$.

an increase of \$1.05 in customer spending and an increase in comparable store sales growth of 0.73%.

Finally, in addition to its direct effect on CSG, customer evaluations had a significant indirect effect (customer evaluations \rightarrow ACTV \rightarrow CSG) on CSG. A one-point increase in customer evaluations is associated with a 3.58% increase in comparable store sales growth. There is also one total effect of note—the total effect of customer evaluations on CSG was 8.95. Therefore, the totality of a one-point increase in customer evaluations is an 8.95% increase in comparable store sales growth. In sum, these indirect and total effects show rather convincingly the importance of variables at the beginning of the value chain (employee perceptions and performances) to those at or toward the end of the value chain (customer evaluations and store performance).

Discussion

Summary of Findings

Based on the value chain framework (Heskett et al. 1994), we conducted a field study that examined a system of effects from employee job perceptions \rightarrow employee job performances \rightarrow customer evaluations \rightarrow store performance. Our study offers insights into the retail value chain and sets forth some managerially relevant strategies for improving store

between approaches and the desire to maintain parity with the HLM approach (no measurement error), we report the aggregated SEM model without measurement error incorporated.

⁶ As with our HLM analyses, we estimated SEM path models using χ^2 difference tests to examine mediated or partially mediated effects (Shrout and Bolger 2002). Using employee conscientiousness, justice, and OI as predictors of customer evaluations (with the control variables, but without employee performances as predictors), only justice ($\beta = 0.19$, $t = 5.34$) was a significant predictor. Thus, only the effect of justice could be mediated. When direct justice, conscientiousness, and OI paths to customer evaluations were added to the model with all employee performance variables as predictors of customer evaluations, this model ($\chi^2 = 176.68$, $df = 74$, $CFI = 0.97$, $NNFI = 0.92$, $RMSEA = 0.05$) was better fitted than the model without these direct paths (χ^2 diff = 9.89, $df = 3$, $p < 0.05$). However, this improvement in fit was due to the justice \rightarrow customer evaluations path as it remained significant ($\beta = 0.12$, $t = 2.67$), although its effect was significantly reduced ($p < 0.05$). Similar models were estimated for mediated relations of employee performances on ACTV and CSG. No direct employee performance effects were found with or without customer evaluations as a predictor of ACTV. Similar nonsignificant direct effects of employee performances on CSG (with or without customer evaluations and ACTV as predictors) were found. In sum, these SEM mediation results mirror the HLM mediation results.

performance. We briefly note some key findings below and discuss implications for leveraging these findings to improve business, as well as offering implications for academic researchers.

Effects of Employee Conscientiousness, Justice, and Organizational Identification. At the individual and aggregated data levels, employee conscientiousness, justice, and organizational identification were positively related to employee in-role performance, extra-role performance toward customers, and extra-role performance toward the organization. The significant interactions at the employee level also showed that employees with higher levels of conscientiousness and justice showed higher levels on all performance dimensions, and employees with higher levels of conscientiousness and organizational identification showed higher levels on extra-role performance toward the organization. Further, the effects of conscientiousness, justice, and organizational identification rippled through the system to be related to customer evaluations, average customer transaction value, and comparable store sales growth.

Effects of Employee Performances. Employee in-role performance and extra-role performance toward customers were equally related to customer evaluations. Contrary to our prediction, extra-role performance toward the organization was not related to customer evaluations. Although the effects of all employee performances on average customer transaction value and comparable store sales growth were mediated by customer evaluations, their indirect effects on average customer transaction value and comparable sales growth were significant.

Effects of Customer Evaluations. The customer evaluations variable was related to average customer transaction value and comparable store sales growth. Further, at its highest level, customer evaluations showed increasing returns (a positive and quite pronounced quadratic effect) on average customer transaction value.

Implications

Employee Conscientiousness, Justice, and Identification. Regarding employee perceptions, our study offers key implications for retail managers and academics. From the management side, hiring conscientious employees is a must. Although this recommendation seems obvious, achieving it is not so straightforward. Conscientious job candidates are likely to have many options, making it more challenging to attract them to retail positions where pay, benefits, and job prestige may be relatively meager and the work schedule often inconvenient (e.g., holidays and weekends). Thus, it is one thing to say you want to hire conscientious employees and quite another to do

it. However, because our findings indicate that conscientious employees partially set the stage for improved store performance (indirect effects), retailers may find it to their advantage to do what is necessary to hire them, e.g., provide higher pay. That is, a fuller appreciation of the marginal benefits these employees provide may justify the higher marginal costs.

Treating employees justly has far-reaching consequences. Not only do our results show that justly treated employees perform better, their perception of organizational justice spills over to customer evaluations as well (Bowen et al. 1999). Of even greater relevance are our justice * conscientiousness interaction effects on all three dimensions of performance, and the indirect effects of justice on customer evaluations and store performance. These interactions suggest a simple and intuitive, but very important, implication for retail managers—hire conscientious people *and* treat them well. As per the indirect effects, a one-point increase on the seven-point measure of justice was associated with customers spending \$1.43 more per visit, and an increase in comparable store sales growth of 1%. Thus, fair treatment of employees *is* related to the bottom line. This notion of fair treatment is one that can be most readily affected by management, and as such, should be gauged periodically (Simons and Roberson 2003).

Finally, our study shows the importance of assessing organizational identification, because it was directly related to employee performances, and showed indirect effects on customer evaluations and store performance. Given that employees may self-select into an organization based on identification, projecting an appealing image to the public (customers and non-customers) may help attract suitable employees. For example, and as noted by Glynn (1998, p. 242), “firms listed as ‘Most Admired’ for-profit corporations that support social causes (e.g., Ben & Jerry’s, The Body Shop, Tom’s of Maine) or ideologically-based non-profits (e.g., Habitat for Humanity, Peace Corps) might elicit affiliations from individuals who feel a need to align with these kinds of firms.” Thus, by what firms project about themselves via their corporate communications, they may be able to hire employees that have a high degree of organizational identification on the date of hire. Once hired, managers can enhance identification through socialization and training, because employees may further modify their identity to match the firm’s identity. Our organizational identification * conscientiousness interaction is consistent with this premise and suggests that hiring employees who score high on organizational identification and conscientiousness will result in stronger extra-role performance toward the organization.

From the academic side, we feel that introducing organizational identification into the value chain is of

note, because to our knowledge theoretical models of the value chain and/or store performance have not specified organizational identification as an important explanatory construct. Our study shows that it is related to all aspects of employee performance, which in turn is related to customer evaluations. Future academic studies may want to assess organizational identification's potential with respect to the following questions. First, what interpersonal influence is there with respect to one employee's organizational identification on that of his or her peers? For example, Bohlman et al. (2006) found that customers revised their satisfaction judgments upwards when they discovered that consumers with whom they identified were also satisfied. Would organizational identification have similar effects among employees? Is it "contagious/infectious" among employees? If employees find out that other employees in their firm share the same level of organizational identification would this also increase their performance? ...satisfaction? Second, how enduring is organizational identification over time? Would it increase with high firm performance? ...decrease with poor firm performance? Answering such questions could enhance the organizational identification literature and the value chain framework.

Other findings of note to academics are the organizational justice * conscientiousness and organizational identification * conscientiousness interactions. First, testing theory-relevant interactions has the propensity to enhance external validity (Lynch 1999). From this viewpoint, our study enhances the external validity of the value chain framework. Second, our study has implications for the personality-performance literature. Based on trait activation theory (Tett and Burnett 2003), we predicted that high levels of employee justice and high levels of organizational identification coupled with high levels of conscientiousness would be related to employee performances. At the employee level of data, the former effect was fully supported, but the latter was supported only for extra-role performance toward the organization. Why? We can offer only a speculative answer. Organizational identification is essentially a perception of overlap between employee self-perception and that of the *firm*. Thus, where it has its greatest moderating impact with traits may be with extra-role performance toward the *firm*, and less so with the firms' day-to-day in-role operations or its customers. Future academic research may want to theoretically posit and examine what types of employee perceptions are more likely to interact with personality traits than others (Tett and Burnett 2003).

Employee Performances. Managerially, our study provides evidence that retailers should concentrate on employee in-role performance and encouraging

employees to go the extra mile when interacting with customers. In-role performance and extra-role performance toward customers had equal effects on customer evaluations, but extra-role performance toward the organization was not related to customer evaluations. Although these findings run counter to our predictions, they still have managerial implications. All three performances were assessed on seven-point scales. Their absolute mean levels (Table 1) are marginal (3.61, 4.27, and 3.77, respectively) and suggest quite a bit of room for improvement. Because managers sometimes have to make trade-offs in what to improve to maximize a favorable outcome, it seems that just having employees do their jobs (i.e., the in-role tasks specified in their job descriptions) and treat customers with a little extra care could have pronounced effects on customer evaluations that ripple through the system. Recall that one-point increases in in-role performance and extra-role performance toward customers are indirectly associated with customers spending \$1.28 and \$1.05 more per visit, and are indirectly associated with comparable store sales growth of 0.90% and 0.73% per year. Thus, stressing in-role performance and extra-role performance toward customers at the expense of extra-role performance toward the organization seems a reasonable trade-off to make.

Customer Evaluations. In recent years, there has been increased interest in studies that examine the relationships between what customers say or feel (customer evaluations), what they do (average customer transaction value), and the firm's bottom line (comparable store sales growth) (Marketing Science Institute 2004). By showing the customer evaluations → average customer transaction value → comparable store sales growth links, our study shows responsiveness to this interest. Not only are customer evaluations predictive of average customer transaction value and comparable store sales growth, for average customer transaction value, the effect of customer evaluations has increasing returns. At the higher levels of customer evaluations (about five and above from a plot of the data), we found a semi-"U" shape—a quadratic effect that was quite pronounced ($\beta = 22.82$). In fact, this quadratic effect was the strongest predictor of average customer transaction value.

Of further interest are the direct, indirect, and total effects of customer evaluations. The direct effect of a one-point increase in customer evaluations is associated with customers spending \$12.79 more per store visit (a 15% increase), and a 5.37% increase in comparable store sales growth (a 16% increase). We feel that these direct effects are particularly notable. The one study that we are aware of that tested a value-chain model in a retail setting other than banking was the "Employee-Customer Profit Chain at Sears"

study by Rucci et al. (1998). Although their study is difficult to compare to our study due to pronounced differences in measures, it is still of interest to note the effect of their “customer impressions” variable versus our “customer evaluations” variable on financial performance. Rucci et al. found that raising customer impressions by a value of 1.3 led to a 0.5% increase in profit growth. As just noted, our customer evaluations construct was associated with much higher percentage increases for our store performance variables. Regardless if measurement or setting differences (a mass merchandiser like Sears versus a specialty retailer) contribute to the difference in effect sizes, the difference is still quite remarkable, and we feel it speaks to the notion of using our value chain approach and measures relative to other operationalizations of the value chain framework.

Indirectly, customer evaluations are associated with a 3.58% increase in comparable store sales growth, and the total effect of customer evaluations was an 8.95% increase in comparable store sales growth. Thus, consistent with Anderson and Mittal (2000) and Rust et al. (2004), it seems reasonable to suggest that superior customer satisfaction, loyalty, and intent are commensurate with higher profitability, and our findings collectively show that such higher profitability starts with human resource and managerial practices (i.e., hiring highly identified and conscientious employees, and then treating them fairly) that affect retail service employee performances.

Limitations and Potential Inconsistencies

Our study is not without limitations or inconsistencies. First, as with almost all studies based on survey data, the ability to infer causality is severely compromised. Thus, support for the value chain framework system of relationships we examined is purely correlational. Still, the sheer number of covariates/control variables we used in testing our models (i.e., employee tenure, employee job satisfaction, employee commitment, store manager performance, five customer demographic variables, and three store variables—12 control variables in total) hopefully lends credence to the robustness of our results.

Second, we did not find support for our extra-role performance toward the organization → customer evaluations path. We can only offer a speculative reason, because this link was found in prior research. Although managers have a good vantage point from which to evaluate employee in-role performances and employee extra-role performances toward customers, they may not be as adept at evaluating the extra things employees do for the organization. Perhaps there is more noise in manager ratings of extra-role performance toward the organization because retail managers may not see all the “back-room”/internal

influence behaviors that store employees perform. As such, it seems plausible that their ratings of extra-role performance toward the organization involve more guesswork than their other performance ratings.

Third, at the individual employee level of data ($n = 1,615$), using HLM we found most of our employee conscientiousness * justice and conscientiousness * organizational identification interactions significant in affecting employee performances. This was not the case with our aggregated SEM path model ($n = 306$). We believe this inconsistency is most likely due to the reduced statistical power often associated with aggregation (Harter et al. 2002) combined with the inability of smaller sample sizes to detect interactions (Jaccard 2003). We do not believe that this inconsistency is due to using HLM versus SEM, because using both techniques at the individual employee level of data without the manager performance covariate showed nearly identical results. We also do not believe that measurement error contributed to this inconsistency, because we estimated aggregated path models that incorporated measurement error that showed highly similar results to those reported in Tables 5 and 6 (see Footnote 5).

Finally, although we assessed a number of relevant control variables, we were not able to obtain a measure of competitive intensity—e.g., competitor prices, promotions, clothing assortment (Seiders et al. 2005)—because our retail partner gathered no formal measures of this construct. We also did not control for customer perceptions of our retailer’s product assortment, although our retailer’s upper-level management strongly felt that they carried an assortment level commensurate with their competitors. These variables incorporated into our models would have resulted in a stronger test of the retail value chain.

Appendix A. Measures

Manager-Rated Measures

Employee In-Role Performance:

- (1) How do you rate this employee in terms of performance with regard to knowledge of your products, company, and competitors?
- (2) How do you rate this employee in terms of performance with regard to store merchandising, proper product display techniques, store signage, and opening and closing procedures?
- (3) How do you rate this employee in terms of performance of all required tasks specified in his or her job description?

Employee Extra-Role Performance Toward Customers:

- (1) How often did this employee go above and beyond “the call of duty” when serving customers?
- (2) How often did this employee willingly go out of his/her way to make a customer satisfied?
- (3) How often did this employee voluntarily assist customers even if it meant going beyond job requirements?

Employee Extra-Role Performance Toward the Organization:

- (1) How often did this employee perform tasks that were not required, but that helped ____?
- (2) How often did this employee look for additional tasks despite the fact that it increased his/her workload to help ____?
- (3) How often did this employee voluntarily do extra or nonrequired work in order to help ____?

Employee-Rated Measures

Conscientiousness:

- (1) Organized
- (2) Orderly
- (3) Precise

Distributive Justice:

- (1) To what extent are you fairly rewarded for the amount of experience you have?
- (2) To what extent are you fairly rewarded for the stresses and strains of your job?
- (3) To what extent are you fairly rewarded for the amount of effort you put forth?
- (4) To what extent are you fairly rewarded for the work you have performed well?

Procedural Justice:

- (1) When decisions about employees are made at ____, complete information is collected for making those decisions.
- (2) When decisions about employees are made at ____, all sides affected by the decisions are represented.
- (3) When decisions about employees are made at ____, the decisions are made in a timely fashion.
- (4) When decisions about employees are made at ____, useful feedback about the decisions and their implementation are provided.

Interactional Justice:

- (1) When decisions are made about me at ____, my supervisors/managers deal with me in a truthful and ethical manner.
- (2) When decisions are made about me at ____, my supervisors/managers treat me with respect and dignity.
- (3) When decisions are made about me at ____, my supervisor/managers work very hard to be fair.
- (4) When decisions are made about me at ____, my supervisor/managers show concern for my rights as an employee.

Organizational Identification:

Employees responded to seven matched self-corporate attribute pairs along dimensions of leader, progressive, compassionate, fair, sincere, cooperative, and sensitive, each assessed along seven-point “Strongly Disagree – Strongly Agree” statements.

For example, regarding the first attribute, each employee responded to the following item:

1. “A leader” accurately describes me: (seven-point “Strongly Disagree – Strongly Agree” scale).

After responding to the seven self-perception measures, each employee responded to the same seven attributes regarding perceptions of the company, e.g.:

1. “A leader” accurately describes ____ (seven-point “Strongly Disagree–Strongly Agree” scale).

Customer-Rated Measures

Satisfaction:

- (1) All in all, I am satisfied with ____ stores.
- (2) Overall, I am satisfied with my shopping experiences at ____.

Purchase Intent:

- (1) Intend to continue shopping at ____ stores.
- (2) I plan to shop at ____ in the near future.

Loyalty

- (1) I feel a sense of loyalty to ____ stores.
- (2) I am a committed ____ shopper.

WOM

- (1) If asked, I would tell my friends to shop at ____ stores.
- (2) I would recommend ____ stores to my friends.

Notes. All customer measurement items and the procedural and interactional justice items were rated on seven-point “strongly disagree–strongly agree” scales; the conscientiousness items were rated on seven-point “does not describe me at all–describes me very well” scales; the in-role employee performance items were rated on seven-point “poor–excellent” scales; and the employee extra-role performance items were rated on seven-point “never–as often as possible” scales.

Appendix B. Aggregated Data Control Path Estimates at the Store Level

Control variable paths	Path estimates Unstandardized/ standardized	t-ratio
Employee performances as outcomes		
Employee tenure → EIRP	0.00/0.02	0.62
Employee job satisfaction → EIRP	0.13/0.13	3.14**
Employee org. commitment → EIRP	0.12/0.11	2.87**
Store manager performance → EIRP	0.07/0.08	2.67**
Employee tenure → ERPC	0.01/0.04	1.22
Employee job satisfaction → ERPC	0.06/0.06	1.34
Employee org. commitment → ERPC	0.09/0.09	2.10*
Store manager performance → ERPC	0.00/0.00	0.13
Employee tenure → ERPO	0.00/0.01	0.18
Employee job satisfaction → ERPO	0.19/0.20	4.52**
Employee org. commitment → ERPO	0.03/0.03	0.62
Store manager performance → ERPO	0.04/0.05	1.41
Customer evaluations as the outcome:		
Employee tenure → customer evaluations	0.01/0.08	2.09*
Store manager performance → customer evals.	0.13/0.35	7.78**
Customer gender → customer evaluations	0.53/0.04	0.89
Customer age → customer evaluations	0.00/0.01	0.16
Customer education → customer evaluations	−0.35/−0.03	0.69
Customer income → customer evaluations	−0.28/−0.05	1.34
Customer tenure → customer evaluations	0.00/0.00	0.10

Appendix B. (Cont'd.)

Control variable paths	Path estimates Unstandardized/ standardized	t-ratio
Average customer transaction value (ACTV) as the outcome:		
Store manager performance → ACTV	3.99/0.30	6.12**
Customer gender → ACTV	12.50/0.02	0.89
Customer age → ACTV	0.57/0.04	1.03
Customer education → ACTV	0.18/0.00	0.01
Customer income → ACTV	−5.12/−0.05	0.71
Customer tenure → ACTV	−0.17/−0.03	0.99
Store site location → ACTV	0.91/0.03	0.68
Store geographic region → ACTV	1.41/0.04	1.14
Store day traffic → ACTV	0.16/0.23	5.53**
Comparable store sales growth (CSG) as the outcome:		
Store manager performance → CSG	2.75/0.25	4.94**
Customer gender → CSG	17.27/0.04	1.03 ns
Customer age → CSG	−0.20/−0.02	0.45 ns
Customer education → CSG	13.43/0.03	0.93 ns
Customer income → CSG	1.29/0.01	0.22 ns
Customer tenure → CSG	−0.05/−0.01	0.37 ns
Store site location → CSG	−0.78/−0.03	0.72 ns
Store geographic region → CSG	0.43/0.02	0.43 ns
Store day traffic → CSG	0.13/0.23	5.49**

*Significant at $p < 0.05$; **significant at $p < 0.01$.

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