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Do Suppliers Benefit from Collaborative Relationships with Large Retailers? An Empirical Investigation of Efficient Consumer Response Adoption

Collaborative manufacturer–retailer relationships based on efficient consumer response (ECR) have become ubiquitous over the past decade. Yet academic studies of ECR adoption and its impact on marketing relationships are relatively scarce. Inspired by the relational view of competitive advantage, the authors empirically investigate whether the extent to which suppliers of a major retailer adopt ECR has a beneficial impact on their outcomes. The results demonstrate that whereas ECR adoption has a positive impact on supplier economic performance and capability development, it also generates greater perceptions of negative inequity on the part of the supplier. However, retailer capabilities and supplier trust moderate some of these main effects. The overall results are robust with respect to differences in supplier size as well as between branded and private-label suppliers.

Over the past two decades, marketing theory and practice has embraced the idea of relationship marketing (e.g., Dwyer, Schurr, and Oh 1987; Morgan and Hunt 1994). In contrast to the traditional transaction-based focus of market governance, the literature now exhorts firms to develop collaborative partnerships and relational governance (e.g., Anderson and Weitz 1992; Ganesan 1994). Compared with the typical adversarial transactions that involve bidding procedures in which multiple suppliers compete against one another in an effort to drive down prices, collaborative relationships adopt a long-term perspective and include an ongoing process to lower acquisition and operating costs (Cannon and Homburg 2001; Kalwani and Narayandas 1995). Although collaborative relationships through joint efforts of the partners create unique value that neither partner can create independently, there is tension between maximizing such value and distributing it between the partners (Zajac and Olsen 1993). This makes collaborative relationships challenging to implement in practice, particularly with powerful parties.

The challenge of developing collaborative marketing relationships is perhaps most apparent in the fast-moving

consumer goods industry. Although there are differences of opinion in the academic literature as to whether power has shifted from manufacturers to retailers (Ailawadi 2001), there is little doubt about the consolidation in the retail sector. For example, in the United States, the ten largest retailers now account for 80% of the average manufacturer's business compared with approximately 30% a decade ago (Boyle 2003). Besides the resultant price pressure from large retailers, suppliers are finding it increasingly difficult to develop their marketing strategy in isolation of the particular retailer's strategy. This has encouraged suppliers to develop closer relationships with major retailers in an attempt to change the latter's focus from purely price to reducing the total cost in the marketing channel and increasing value; this is a fundamental change in marketing strategy (Kumar 1996). The major industry initiative to help achieve this is called "efficient consumer response" (ECR).

ECR

The U.S. grocery retailers and branded manufacturers in the fast-moving consumer goods industry launched the ECR initiative in 1992. A study by Kurt Salmon Associates (1993), a retail management consultancy firm, estimated that streamlining the supply chain through the adoption of ECR would lead to a total savings of 10.8% of retail price, or \$30 billion. It was anticipated that manufacturers would receive 54% of these savings, and distributors and retailers would receive the remaining 46% (ECR Europe 1997).

Over time, ECR has become a comprehensive initiative comprising a dozen different ECR practices that are organized within three major areas of manufacturer–retailer collaboration: (1) demand side management, or collaborative

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practices to stimulate consumer demand by promoting joint marketing and sales activities; (2) supply side management, or collaborative practices to optimize supply, with a focus on joint logistics and supply chain activities; and (3) enablers and integrators, or collaborative information technology and process improvement tools to support joint relational activities. Although collaboration in each of these areas could be pursued independently, in practice a comprehensive approach is promoted. Thus, we define ECR as a cooperative value-creation strategy whereby retailers and suppliers jointly implement collaborative business practices with the ultimate objective of fulfilling consumer wishes together, better, faster, and at less cost.

Despite the initial enthusiasm, a decade later, signs of skepticism seem to be gathering steam. In particular, suppliers believe that retailers have been the prime beneficiaries of ECR. There is a widespread belief among suppliers that ECR is just a convenient label for large and powerful retailers to continue doing what they have always been perceived as doing, namely, finding ways to pass costs back to the suppliers. To investigate this issue rigorously, we empirically assess whether and under what conditions suppliers benefit from collaborative ECR relationships with major retailers.

A review of the literature indicates surprisingly few empirical investigations of ECR adoption on performance. Related empirical studies of manufacturer–retailer relationships tend to fall into two categories. First, several investigations assess the impact of tighter manufacturer–retailer relationships on performance, as reflected in relational constructs such as interfirm coordination, trust, or mutual dependence (e.g., Heide and John 1992; Lusch and Brown 1996). Although greater trust, mutual interdependence, or interfirm coordination may be associated with ECR, these constructs are conceptually distinct from ECR, which promotes the joint implementation of collaborative processes and routines. Furthermore, these studies have typically examined supplier relationships with relatively small retailers (e.g., automobile, tire dealers) rather than with the large retailers that populate and often dominate suppliers in the packaged goods industry.

Second, three studies (Dhar, Hoch, and Kumar 2001; Gruen and Shah 2000; Stank, Crum, and Arango 1999) have examined the effects of the adoption of specific aspects of ECR, such as category management, on performance within the grocery industry. However, these studies do not assess the specific benefits for suppliers from ECR participation. In the face of large retailers that have the potential ability to dominate suppliers and thus appropriate any gains, whether ECR provides any benefits to suppliers remains an open question.

There are three objectives to this study. First, we propose a comprehensive scale to measure collaborative ECR relationships between suppliers and retailers. Second, we examine the effects of ECR adoption on supplier outcomes and the conditions under which such relationships with large retailers are likely to be beneficial to suppliers. Third, we attempt to determine whether the effects of collaborative ECR relationships are similar for large versus small manufacturers and branded versus private-label suppliers. Cur-

rently, we do not know what collaborative ECR relationships are, who they benefit, and under which conditions.

Theory and Research Hypotheses

Recently, Dyer and Singh (1998) proposed a “relational view of competitive advantage” based on the observation that a firm’s critical resources may span firm boundaries. Dyer and Singh argue that such a relational view differs fundamentally from the two prominent perspectives that currently explain the sources of competitive advantage—industry structure (Porter 1980) and the resource-based view of the firm (Barney 1991)—and they propose four key sources of relational rents. According to Dyer and Singh, relational rents flow when alliance partners (1) invest in relation-specific assets, (2) develop interfirm knowledge-sharing routines, (3) use effective governance mechanisms, and (4) exploit complementary capabilities. Our conceptual model of the antecedents and consequences of suppliers’ ECR adoption (see Figure 1) is inspired by this framework. In developing the model, we selected constructs that were both relevant to the practice of ECR and of theoretical interest to the relationship marketing literature, while ensuring coverage of all four sources of relational advantage.

Relation-specific assets help lower total value chain costs, enhance product differentiation, reduce operational problems, and accelerate product development cycles. Transaction-specific investments (e.g., Anderson and Weitz 1992; Heide and John 1988), cross-functional teams, and tailored incentive systems (e.g., Procter & Gamble’s customer development team for Wal-Mart based in Bentonville) are most frequently mentioned as critical antecedents of supplier ECR adoption, and therefore we included these in our framework.

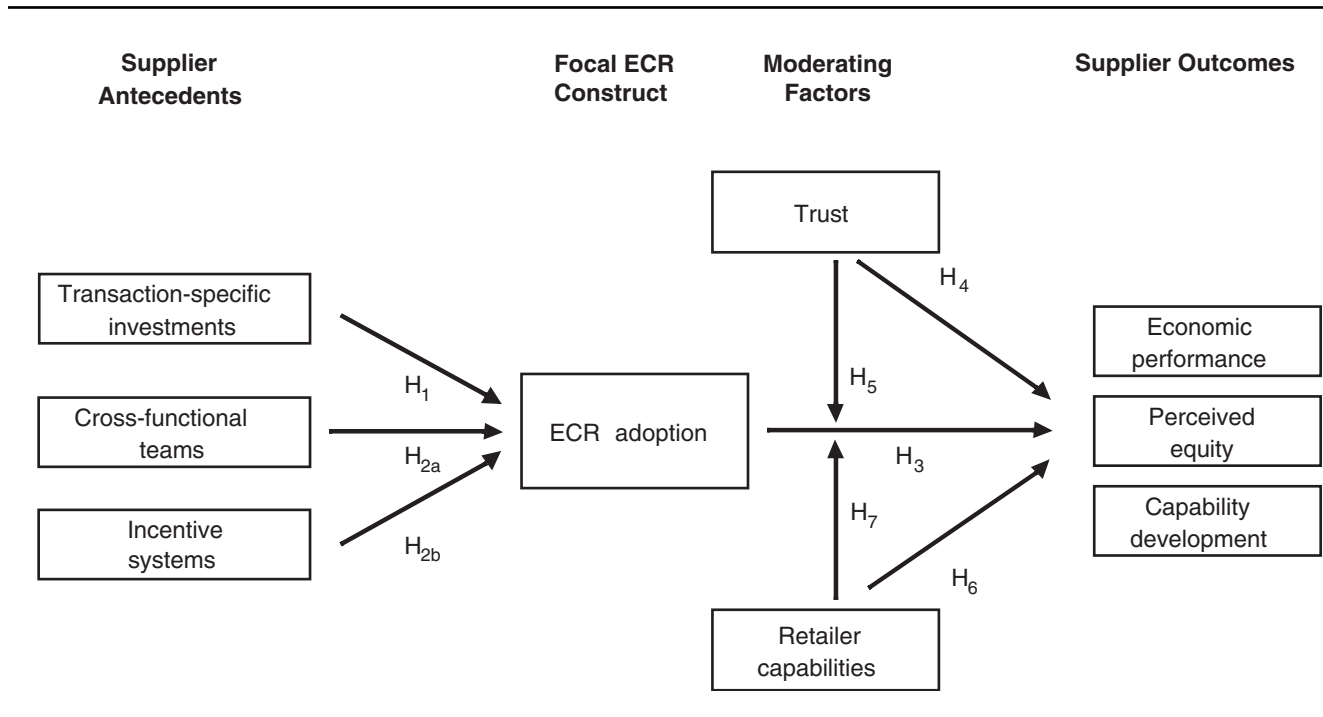
Interfirm knowledge-sharing routines facilitate information sharing and help alliance partners increase their partner-specific absorptive capacity (Cohen and Levinthal 1990; Lane and Lubatkin 1998). In its essence, ECR adoption is about sharing information and designing interfirm routines that facilitate interorganizational learning to enhance customer value.

Effective governance influences the willingness of alliance partners to engage in value-creation initiatives (Zajac and Olsen 1993). Self-enforcing safeguards (e.g., trust, economic hostages) are preferable to third-party safeguards (e.g., legal contracts) because they lower transaction costs and create incentives for value-creation initiatives (Telser 1980).

Complementary capabilities are the justification for interorganizational marketing relationships because they help partners create value that they cannot generate independently (Zajac and Olsen 1993). Thus, we included retailer capabilities in our framework as a moderator because ECR relationships with smarter retailers should result in more beneficial outcomes for suppliers.

In summary, given our focus on investigating supplier outcomes from ECR adoption, our model comprises four sets of factors: (1) the antecedent supplier factors that foster or discourage ECR adoption, (2) the focal ECR adoption construct, (3) the outcomes for the supplier from ECR adoption,

FIGURE 1
Model of ECR Adoption



and (4) the moderating factors of trust and retailer capabilities that either strengthen or weaken the relationships between ECR adoption and performance. However, we note that to some extent, the relationships in Figure 1 between the antecedent constructs (i.e., transaction-specific assets, cross-functional teams, and incentive systems) and ECR are reciprocal. The logic for ordering the antecedents of ECR was based on three factors. First, we conceptualize ECR as a process that gains over time, whereas incentive systems, investments, and cross-functional teams have more of an “on/off” character to them. Second, our framework follows the structure–conduct–performance approach (Bain 1956) in which, as a process for managing the relationship, ECR is viewed as “conduct,” whereas the antecedent variables are viewed more as “structure.” Third, interviews with managers indicated that they believed that unless the three antecedents were in place, any ECR initiative was bound to fail.

Antecedents of ECR Adoption

Transaction-specific investments are investments in a relationship that are of lower value when used in an alternative relationship (Heide and John 1988). Close relationships often emerge as a response to safeguard transaction-specific investments (Williamson 1985). Historically, and before the advent of ECR, suppliers of large and powerful retailers in particular have been forced to commit to physical, process, and human assets for dedicated production capacity, logistics capabilities, and market research to adapt to a retailer’s assortment and replenishment concepts (Bloom and Perry 2001; Johnson 1999). Suppliers that have made investments in relation-specific structures with a retailer increase their collaborative conduct in relation to that of their partner to safeguard their previously unprotected dedicated assets (Bain 1956).

Effective ECR adoption requires that suppliers implement supportive organizational systems, such as cross-functional teams and ECR friendly incentive systems, before ECR adoption. Because ECR requires tight coordination between supply side and demand side practices between partners, manufacturers such as Unilever assign multilevel, multifunctional, customer business development teams to their major retail accounts. Such teams replace the traditional supplier–retailer interfaces, which were characterized by lower-level sales representatives who called on buyers and emphasized prices, quantities, and deals. In addition, companies such as Procter & Gamble have adapted their incentive systems to support ECR adoption. An interview partner mentioned that “if internal performance measurement and reward systems do not capture true costs and profits, then the ECR effort will not result in significant and lasting progress.” Thus:

H₁: The greater the transaction-specific investments by the supplier, the higher is the level of ECR adoption.

H₂: The greater the implementation of (a) cross-functional teams and (b) a supportive incentive system in the supplier’s organization, the higher is the level of ECR adoption.

Effects of ECR Adoption on Supplier Outcomes

Given our objective to assess whether suppliers benefit from adopting ECR, we pursue a comprehensive assessment of supplier performance from three different perspectives: economic, relational, and strategic.

Economic performance. Growth, profits, and sales are the most frequently used measures of economic performance (Kumar, Stern, and Achrol 1992; Venkatraman and Ramanujam 1986). To be close to the concept of relational

rents, we define supplier economic performance as the sales, profits, and growth that a supplier generates in the product category with the focal retailer compared with its performance at other retailers and other categories.

Suppliers that adopt ECR incur lower transaction costs because, contrary to traditional adversarial relationships, trading partners that adopt ECR do not need to specify every detail of the agreement in a contract. Monitoring costs are also lowered as self-enforcement replaces the more expensive external or third-party monitoring. Suppliers proactively engage in value-creation initiatives, such as sharing valuable knowledge (e.g., consumer and shopper knowledge) or combining complementary resources (e.g., to develop categories or new solutions for consumers), if they are credibly assured that this knowledge will not be readily shared with competitors (Dyer and Singh 1998). Parties in ECR relationships are more likely to engage in such value-creating activities because the joint processes serve as economic hostages, and there are credible assurances that they will be rewarded for their efforts.

Perceived equity. Relational performance can be examined through supplier perceptions of equity in the relationship with the retailer. Equity is related to the division of benefits and burdens. A supplier experiences equity when it perceives that the outcomes it and the retailer receive are proportional to their respective inputs to the relationship (Scheer, Kumar, and Steenkamp 2003).

Jap (2001, p. 88) notes that “how the sharing process affects the relationship also carries long-term ramifications. In many industries, organizations need to work with each other on a repeated basis. If organizations act opportunistically in the short run, they may develop a negative reputation that will inhibit other organizations from working with them in the future.” Because ECR relationships are long-term relationships with significant specific investments, partners are more likely to monitor and address any temporary inequities over time to prevent dissolution resulting from inequity.

Capability development. Finally, we conceptualized supplier strategic performance using the dynamic capability lens that emphasizes the importance of capability development through organizational learning (Teece, Pisano, and Shuen 1997). Empirical attempts to measure capability improvements are scarce. Herein, we conceptualized a supplier’s capability development as improvements in ECR-related processes resulting from collaboration with the focal retailer.

Interorganizational learning is critical to competitive success because organizations often learn by collaborating with other organizations (e.g., Inkpen 1996). It is through collaborative experiences that both explicit and tacit knowledge are shared and new knowledge is created (Inkpen 1996). Efficient consumer response helps create interfirm knowledge-sharing routines that permit the transfer, recombination, or creation of specialized knowledge. Furthermore, the ability to exploit outside sources of knowledge is largely a function of prior related knowledge or the “absorptive capacity” of the recipient (Cohen and Levinthal 1990). Efficient consumer response is likely to help the supplier develop partner-specific absorptive capacity to assimilate

valuable knowledge from a particular retailer (Lane and Lubatkin 1998).

H₃: The higher the level of ECR adoption, the greater is the supplier’s (a) economic performance, (b) perceived equity, and (c) capability development.

Main Effects of Trust on Supplier Outcomes

In adversarial relationships, suppliers devote significant resources to detect, estimate, and counteract retailer opportunism (e.g., diverting, forward buying), thus increasing transaction costs and lowering economic performance. Trust results in greater openness between suppliers and retailers and thus greater knowledge and appreciation for each other’s contribution to the relationship. Consistent with this reasoning, several studies find positive associations between trust and economic performance (e.g., Geyskens, Steenkamp, and Kumar 1998; Zaheer, McEvily, and Perrone 1998) as well as between trust and distributive justice (e.g., Kumar, Scheer, and Steenkamp 1995).

Although it is widely acknowledged that openness and transparency have a positive effect on learning (Doz 1996; Hamel 1991; Nonaka and Takeuchi 1995), few studies discuss the effects of trust on capability development. From a transaction-cost perspective, self-enforcing safeguards such as trust contribute to a freer and greater exchange of information between committed exchange partners because decision makers do not believe that it is necessary to protect themselves from the other’s opportunistic behavior.

More important than the quantity of information exchanged is the ability to absorb tacit and “sticky” know-how. Unlike information, knowledge is about beliefs, commitment, action, and meaning. Thus, it is often defined as “justified true belief” (Nonaka and Takeuchi 1995). Information and know-how are also context specific and relational (i.e., they depend on the situation and are created dynamically in social interaction among people). Information in adversarial relationships may be suspected of being false, misleading, or manipulative and therefore may not be internalized. Trust increases the perceived truthfulness of knowledge, enhances the absorption of tacit and sticky know-how from an exchange partner, and thus improves the capability development of the supplier.

H₄: The higher the level of trust, the greater is the supplier’s (a) economic performance, (b) perceived equity, and (c) capability development.

Moderating Effects of Trust on Supplier Outcomes

Although suppliers may be forced to adopt collaborative ECR practices by dominant retailers, in the absence of trust, it is unlikely that suppliers will proactively initiate many of the value-creating initiatives that would benefit both parties. There is always the fear in nonexclusive relationships that the other party may share the acquired knowledge with others. In the presence of trust, ECR adoption leads to an even freer and greater exchange of information and know-how between retailers and suppliers because of the reduced fear of opportunistic behavior. Specifically, ECR provides the ability to work with the partner using more effective and efficient routines, but trust motivates parties to exploit its potential benefits fully. Furthermore, in addition to obtain-

ing greater benefits, companies that have ECR relationships with high levels of trust are likely to invest more in the relationship. The ensuing positive spiral of investments and benefits for each party should make it more difficult to keep track of strict proportionality, thus leading to greater feelings of equity.

H₅: The higher the level of trust, the greater are the effects of ECR adoption on the supplier's (a) economic performance, (b) perceived equity, and (c) capability development.

Main Effects of Retailer Capabilities on Supplier Outcomes

Although congruent competencies help a company understand the limitations, processes, and nature of the other party's competencies, they impede the ability to create returns beyond that which is individually obtainable to each firm. In contrast, complementary retailer resources supply critical capabilities and generate greater performance benefits for the supplier. For example, in an ECR relationship, suppliers may contribute to category management with a distinct know-how of managing products and understanding consumers, whereas retailers may supply their knowledge about categories and the shoppers. For efficient replenishment processes, manufacturers possess unique know-how about competitive downstream promotions, and retailers possess unique knowledge about proprietary downstream sales patterns. The synergistic potential of such complementary assets may vary and create differential potentials for interpartner learning and thus for increasing relational rents (Dyer and Singh 1998). In addition, the greater the retailer capability, the more valued are the inputs of the retailer, thus leading to more favorable perceptions of equity.

H₆: The higher the level of retailer capabilities, the greater is the supplier's (a) economic performance, (b) perceived equity, and (c) capability development.

Moderating Effects of Retailer Capabilities on Supplier Outcomes

Although in principle the retailer's capabilities are equally available for all of its suppliers, not all suppliers are equally capable of exploiting them (Lane and Lubatkin 1998). Recent research indicates that the ability of alliance partners to realize the benefits from a partner's strategic resources is conditioned on compatibility in decision processes, information and control systems, and culture (Doz 1996). By default, ECR adoption leads to greater compatibility of organizational systems because the creation of joint processes and the sharing of data and know-how increases interoperability of processes and systems, which in turn reduces transaction cost and increases economic and operational performance.

Firms vary in their ability to identify potential partners and to value their resources as a result of differences in both prior collaborative experiences and internal search and evaluation capabilities (Dyer and Singh 1998). We argue that suppliers that engage in close and transparent ECR relationships have a superior judgment of the retailer's capabilities, which favorably influences their perceptions of equity.

The effect of ECR adoption on capability development is enhanced in the presence of superior retailer capabilities because such capabilities create additional synergistic resources that can be leveraged more effectively by the supplier in intense collaborations. In ECR relationships, partner-specific absorptive capacities enable better sharing, absorption, and transformation of sticky and tacit knowledge. Superior retailer capabilities reflect a larger reservoir of knowledge that is available for absorption by the supplier.

H₇: The higher the level of retailer capabilities, the greater is the effect of ECR adoption on the supplier's (a) economic performance, (b) perceived equity, and (c) capability development.

Methodology

Research Setting and Data Collection Procedure

A supermarket chain that is among the world's top 40 retailers was the empirical setting. The retailer had asked all suppliers to adopt ECR, but the response was mixed. Thus, it volunteered to support our study. Selecting the suppliers of a single retailer allowed the degree of control necessary to enable us to tie any performance benefits for suppliers to the effects of the constructs of interest (e.g., ECR adoption) rather than to extraneous factors (e.g., differences between retailer strategies or competitive environment) (cf. Hibbard, Kumar, and Stern 2001). We collected data from two sources: (1) survey data from suppliers of the retailer on the extent of ECR adoption, perceived outcomes, antecedents, and moderating constructs and (2) archival data from the retailer's records on supplier economic performance.

For the survey data collection, the retailer provided e-mail addresses of active suppliers and the name of the main supplier contact (typically the key account manager) for the relationship. In total, 996 questionnaires, which promised confidentiality of responses, were sent by e-mail. We asked suppliers to select one of the three largest categories that they supplied to the focal retailer and to answer all questions with respect to this category. A total of 216 e-mails failed because of invalid e-mail addresses, four suppliers were listed twice, and four suppliers had merged with other suppliers on the list; this resulted in 772 questionnaires that effectively reached their destination. Nonrespondents were sent reminders by e-mail and were later telephoned. We received 266 completed questionnaires, for an effective response rate of 34.5%.

We evaluated nonresponse bias using Armstrong and Overton's (1977) procedure. Using two-tailed t-tests, we compared early with late respondents on four important demographic variables—supplier size, category share of supplier's sales, retailer's share of supplier category sales, and supplier's share of category in the overall grocery industry—and seven outcome measures—perceived economic performance, archival sales value, archival sales volume, archival supplier service, archival invoice accuracy, perceived equity, and capability development. Because we observed no significant differences ($p < .05$), nonresponse bias did not appear to be a problem, though a more stringent

test would have been to compare respondents with nonrespondents (Mentzer, Flint, and Hult 2001).

Measure Validation for ECR Adoption

Adapting Anderson and Gerbing's (1988) two-step approach, we developed separate measurement models before conducting tests of the hypothesized relationships between constructs. There is no ECR adoption scale in the academic literature. Exploratory field research indicated that the Global ECR Scorecard, developed by a team of practitioners, consultants, and academics, provides a comprehensive framework for structuring ECR activities between retailers and suppliers. The Global ECR Scorecard, which is conceptualized as an index, is widely used and is linked to a Web site on which online comparisons with "best practices" are possible (www.globalscorecard.net). The Global ECR Scorecard comprises 37 questions, each related to a specific ECR practice, spanning the three ECR dimensions: (1) demand side, which covers demand strategy and capabilities, consumer value creation, and optimizing assortments, promotions, and new product introductions; (2) supply side, which covers supply strategy and capabilities, responsive replenishment, integrated demand-driven supply, and operational excellence; and (3) enablers and integrators, which covers common data and communication standards, cost/profit and value measurement, collaborative planning, forecasting and replenishment, and e-business.

The Global ECR Scorecard has not been submitted to any psychometric validation, and it has not been used in academic studies. Many of the items are complex and difficult to understand. In addition, the practice of ECR has evolved since 1998 when several national ECR scorecards were consolidated into the Global ECR Scorecard questionnaire. To ensure that we covered the entire scope of ECR as currently practiced, we reformulated the original items into simpler questions. Then, using managers of the retailer's supplier relations department and several suppliers, we reworded the questions so that their intended meaning would be accessible without additional explanation. This entailed splitting items into distinct questions, adding questions to convey the nuances of the concepts, or dropping redundant items and those practices not currently used under the scope of ECR. Consistent with the Global ECR Scorecard, we used a five-point scale, anchored by "nothing planned" and "fully implemented." As a stem we formulated, "For the product range you have chosen, to what extent have the retailer and your company jointly implemented a process to," followed by the specific item.

Because ECR is conceptualized as a formative construct, it is assumed that the items cause the latent variable rather than the construct being reflected in its items (Jarvis, Mackenzie, and Podsakoff 2003). Because formative constructs require a census of all concepts that form the construct, we presented the resulting items to panels of retailers and suppliers with extensive ECR experience to ensure that they covered the entire domain of the concept (Jarvis, Mackenzie, and Podsakoff 2003). We modified problematic items for greater clarity. We then submitted all items to a panel of three academics to assess face validity. On the basis of this, 33 items constituted the ECR index; they

reflect three facets: (1) the demand side items, which encompass four factors (each with three items) that we labeled collaborative category development, collaborative new product introduction, collaborative consumer value creation, and collaborative channels development; (2) the supply side items, which encompass two factors that we labeled collaborative planning, forecasting, and replenishment (which consists of five items) and collaborative transport optimization (which consists of two items); and (3) the enablers and integrators, which encompass three factors that we labeled common data standards, collaborative operational problem solving, and collaborative process improvement tools.

Because ECR is an index, we did not estimate a confirmatory measurement model (Jarvis, Mackenzie, and Podsakoff 2003). To form the index, we averaged the items to obtain a score for each subfactor. Then, we averaged these subfactor scores to obtain the scores for each of the three facets, which we combined to obtain the ECR score for each relationship. The Appendix contains the items, means, and standard deviations.

Measure Validation for Other Constructs

We conceptualized transaction-specific investments in line with Williamson's (1985) distinction among physical, process, human, and site-specific assets. However, because our interviews indicated that site-specific investments were a minor issue, we concentrated on the first three categories of specific investments. We tailored items that Anderson and Weitz (1992) and Heide and John (1988) use to the specific situation in the fast-moving consumer goods industry on the basis of supplier interviews. We estimated a measurement model that specified transaction-specific investments as a second-order factor and physical, process, and human assets as first-order factors. As Table 1 indicates, although the chi-square (125.593; degrees of freedom [d.f.] = 52) was significant ($p < .001$), the comparative fit index (CFI) (.960) and the Tucker-Lewis index (TLI) (.950) were above the benchmark of .90. For the three first-order factors, both composite reliabilities were between .84 and .89, and the overall reliability for the second-order factor was estimated at .78.

We developed new scales for cross-functional teams and incentive systems. On the basis of supplier interviews, it appeared that the three key supplier areas to help implement ECR across retailers were category management, key account management, and supply chain management. Therefore, three items assessed whether cross-functional teams and supportive incentive systems were implemented in relation to category management, key account management, and supply chain management across retailers. We estimated a measurement model that specified cross-functional teams and incentive systems as two first-order factors. The chi-square (53.031; d.f. = 8) was significant ($p < .001$), but the overall fit was acceptable because the CFI (.956) and the TLI (.918) were above the recommended level of .90. The composite reliabilities were acceptable at .87 for cross-functional teams and at .91 for incentive systems.

We measured the two moderators of trust and retailer capabilities using five and seven items, respectively. We

TABLE 1
Measurement Models for Antecedents, Moderators, and Outcomes of ECR Adoption

Antecedents	Items	Composite Reliabilities	Fit Measures
Measurement Model 1			
<i>Transaction-Specific Investments</i>			
Physical assets	3	.84	$\chi^2_{(52)} = 125.593$
Process assets	5	.89	CFI = .960
Human assets	4	.88	TLI = .950
	12	.78	RMSEA = .073
Measurement Model 2			
<i>Organizational Enablers</i>			
Cross-functional teams	3	.87	$\chi^2_{(8)} = 53.031$
Incentive systems	3	.91	CFI = .956
			TLI = .918
			RMSEA = .146
Measurement Model 3			
<i>Moderators</i>			
Trust	5	.83	$\chi^2_{(53)} = 214.238$
Retailer capabilities	7	.92	CFI = .912
			TLI = .891
			RMSEA = .107
Measurement Model 4			
<i>Supplier Outcomes</i>			
Perceived economic performance	6	.81	$\chi^2_{(64)} = 421.510$
Capability development	7	.93	CFI = .833
			TLI = .796
			RMSEA = .145

Notes: RMSEA = root mean square error of approximation.

used Kumar, Scheer, and Steenkamp's (1995) five items of trust, which assess the extent to which the retailer is honest and benevolent. There was no existing scale to measure retailer capabilities. On the basis of supplier interviews, we identified seven key retailer capabilities with respect to ECR, and the scale assessed the relative capabilities of the focal retailer compared with other retailers. We estimated a measurement model that specified the 12 items loading on to the two constructs of trust and retailer capabilities. Although the chi-square (214.238; d.f. = 53) was significant ($p < .001$), the overall fit was reasonable because the CFI (.912) and the TLI (.891) were close to or above the recommended level of .90. The composite reliabilities were .83 and .92 for trust and retailer capabilities, respectively.

We assessed economic performance in three ways. We measured (1) the supplier's perception of its economic performance, which encompasses turnover, profitability, and growth, compared with other product categories and other retailers. From the retailer's archival records, for 206 of the 266 suppliers and for a period of 63 weeks (roughly 30 weeks before and 33 weeks after the initial mailing of the questionnaire), we obtained data on each supplier's (2) weekly sales performance (i.e., sales value, or retail sales value to the retailer per week) and sales volume (i.e., the number of cases sold per week) and (3) weekly service performance (i.e., supplier service, or percentage of cases supplied against what the retailer ordered) and invoice accuracy (i.e., the percentage of supplier invoices that match the goods received in depot). Because data for each measure

were highly correlated, for each supplier, we averaged the archival performance data across the 63 weeks and then reduced the results to single standardized scores, one for archival sales performance and one for archival service performance. After a logarithmic transformation of each measure, we performed a principal components analysis for each pair of two measures to extract two single-factor scores for the subsequent analyses.

We used Scheer, Kumar, and Steenkamp's (2003) adaptation of Walster, Walster and Berscheid's (1978) global equity measure in which equity is calculated as the quotient of the perceived outputs and inputs of the supplier less the quotient of the perceived outputs and inputs of the retailer. Equity values less than zero indicate that the supplier perceives negative inequity, whereas an equity index greater than zero indicates that the supplier perceives positive inequity. Because this is an index, we did not estimate a confirmatory measurement model for equity.

Kale, Singh, and Perlmutter's (2000) work inspired our notion of capability development, which assessed whether the supplier had significantly improved seven ECR-related capabilities through working with the retailer. The measurement model for perceived economic performance and capability development showed a significant chi-square (421.51; d.f. = 64, $p < .001$), but the overall fit was marginal because the CFI (.833) and the TLI (.796) were close to or above the marginal threshold of .80. The composite reliabilities were .81 for economic performance and .93 for supplier capability development, and both exceeded the preferred level of .70.

For all the confirmatory measurement models, we assessed discriminant validity between pairs of constructs using Anderson and Gerbing's (1988) procedure as well as Fornell and Larcker's (1981) more stringent procedure, which requires that the average variance extracted for any two constructs is greater than their shared variance. All constructs demonstrated discriminant validity. For example, the shared variance between cross-functional teams and incentive systems was .245, whereas the average variance extracted for the two constructs was .553 and .625, respectively. In addition, we compared the average within-construct item correlation with the average between-constructs item correlation for the eight multi-item constructs. Of the 21 such comparisons, all demonstrated lower between-construct correlations. The previously discussed measure validation procedures demonstrate that all the measures possess adequate unidimensionality, reliability, and convergent and discriminant validity.

Results

To test our main and moderating effects hypotheses, we used generalized least squares (GLS) analysis, which is preferred to ordinary least squares (OLS) regressions when the residuals of the regression equations are correlated and the system is recursive, because it fully accounts for correlation of the diagonal sigma matrix and leads to estimates that are unbiased and consistent (Greene 2003). In the face of a triangular beta matrix of endogenous variables, seemingly unrelated regression is equivalent to GLS (Lahiri and Schmidt 1978); thus, we estimated our equations using seemingly unrelated regression in SAS; however, for our archival-based dependent variables, we used OLS because their residuals were not correlated with ECR adoption as a result of different measurement approaches. For all scales, with the exception of the ECR adoption index, we used factor scores to combine the items into a construct score (Lis-tovicka and Thamodaran 1991). The construct level correlation matrix appears in Table 2.

Table 3 provides an overview of the results. Consistent with H_1 and H_2 , transaction-specific investments (.416, $p < .001$), cross-functional teams (.128, $p < .001$), and incentive systems (.075, $p < .05$) have a positive impact on ECR adoption. Consistent with H_{3a} and H_{3c} , ECR adoption has a positive effect on the supplier's perceptual economic performance (.343, $p < .001$), archival sales (.391, $p < .001$), and capability development (.845, $p < .001$). However, contrary to H_{3b} , ECR adoption has a significant, negative effect on perceived equity (−.305, $p < .001$). We did not observe a significant effect on archival service.

Consistent with H_4 , trust has a positive effect on the supplier's archival sales performance (.462, $p < .05$) and perceived equity (.689, $p < .001$) but not on perceptual economic performance, archival service performance, or capability development. Consistent with H_{5a} , trust enhances the relationship between ECR adoption and perceived economic performance (.221, $p < .05$), but it has no significant moderating effects on the two archival measures and capability development. Thus, H_{5a} is partially supported, but H_{5c} is not. Contrary to H_{5b} , trust negatively influences the rela-

tionship between ECR adoption and perceived equity (−.158, $p < .05$).

Retailer capabilities have a positive effect on supplier perceptual economic performance (.711, $p < .01$), archival service performance (.586, $p < .05$), and capability development (.455, $p < .01$). Thus, H_{6c} is fully supported, but H_{6a} is only partially supported because the effects on archival sales performance are not significant. Contrary to what we expected, the effects of retailer capabilities on perceived equity (H_{6b}) are negative (−.446, $p < .05$).

The moderating effects of retailer capabilities are complex. Contrary to H_{7a} , retailer capabilities have a significant, negative moderating effect on the relationship between ECR adoption and supplier perceptual economic performance (−.229, $p < .05$). The effects on archival sales and service performance are not significant. However, consistent with H_{7b} , retailer capabilities have a positive moderating effect on the relationship between ECR adoption and perceived equity (.283, $p < .001$). We did not observe moderating effects of retailer capabilities on capability development; thus, H_{7c} is not supported.

Effects of Supplier Size and Brand Type

Practitioners often have diverse opinions on what type of suppliers—large versus small and private label versus branded—benefit more from ECR. Lacking any theoretical reasons for such differences, we decided not to develop hypotheses but rather to explore this issue *post hoc*. We conducted two sets of analyses. First, to assess the robustness of the results with respect to supplier size, we divided the overall sample into large versus small suppliers. Second, to assess the robustness of the results with respect to branded versus private-label suppliers, we divided the sample into those primarily supplying supplier brands and those primarily supplying private-label products. We initially conducted paired differences tests to examine whether the split samples differed significantly on the key antecedents and outcome constructs. Because we did not observe significant differences in the case of either split, we concluded that the subsamples were representative of the overall sample. We then tested the effects of supplier size and brand type by including corresponding dummy variables into each of the five regression equations that we estimated previously. All ten coefficients related to the dummies were insignificant, indicating that neither supplier size nor supplier brand type had any significant effects ($p < .10$) on our results. Therefore, our findings are robust with respect to differences between supplier size and brand type.

In addition, we explored whether certain types of suppliers were more likely to adopt ECR. Regression results with ECR adoption as the dependent variable indicate that the supplier's total company sales (.166, $p < .05$), the product range's share of the supplier's total sales (.213, $p < .01$), and the retailer's share of the supplier's total sales in this product group (.224, $p < .01$) had significant, positive effects on ECR adoption. In contrast, the proportion of the supplier's turnover with the retailer in the product range that is private label (.061, $p > .10$) and the share of this product range in the total grocery market (.031, $p > .10$) did not have significant effects. In summary, the larger the supplier

TABLE 2
Factor Correlation Matrix

	1	2	3	4	5	6	7	8	9	10	11
Mean	2.29	3.85	3.27	2.22	4.11	3.82	4.02	a	a	-.44	3.66
Standard deviation	.69	1.22	1.29	1.33	1.2	1.34	1.03	a	a	.84	1.47
1. ECR adoption	1										
2. Transaction-specific investments	.592***	1									
3. Cross-functional teams	.326***	.178**	1								
4. Incentive systems	.372***	.374***	.328***	1							
5. Trust	.482***	.334***	.088	.181**	1						
6. Retailer capabilities	.546***	.424***	.131*	.273***	.545***	1					
7. Perceived economic performance	.387***	.309***	.082	.212***	.399***	.416***	1				
8. Archival sales performance	.275***	.402***	.153*	.126	.224**	.223**	.245***	1			
9. Archival service performance	.071	.260***	.069	-.005	.031	.183**	.088	.273***	1		
10. Perceived equity	.149*	-.027	-.025	.024	.415***	.347***	.269***	-.002	-.028	1	
11. Capability development	.663***	.686***	.236***	.37***	.52***	.613***	.418***	.420***	.225**	.151*	1

* $p < .05$.

** $p < .01$.

*** $p < .001$.

^aDenotes confidential data. We have standardized these measures at the request of the focal retailer.

TABLE 3
Results of GLS Analysis

Independent Variables	ECR Adoption	Economic Performance			Perceived Equity	Capability Development
		Perceived Economic Performance	Archival Sales Performance ^a	Archival Service Performance ^a		
Constant	2.29*** (.032)	-.784*** (.217)	-.845*** (.226)	-.076 (.235)	.209 (.193)	-1.929*** (.172)
Transaction-specific investments	.416*** (.034)					
Cross-functional teams	.128*** (.033)					
Incentive systems	.075* (.035)					
ECR adoption		.343*** (.094)	.391*** (.098)	.030 (.102)	-.305*** (.083)	.845*** (.074)
Trust		-.333 (.219)	.462* (.228)	-.457 (.237)	.689*** (.194)	-.041 (.171)
Retailer capabilities		.711** (.217)	.129 (.225)	.586* (.234)	-.446* (.192)	.455** (.170)
ECR × trust		.221* (.089)	-.156 (.092)	.150 (.096)	-.158* (.079)	.051 (.069)
ECR × retailer capabilities		-.229* (.092)	-.054 (.095)	-.152 (.099)	.283*** (.081)	-.084 (.072)
R ²	.431	.281	.149	.061	.233	.532

* $p < .05$.

** $p < .01$.

*** $p < .001$.

^aOLS estimation.

Notes: Approximate standard error is in parentheses.

is and the more important the category and the retailer are to the supplier, the more likely it is that the supplier adopts ECR.¹ Conversely, the proportion of branded versus private-label supplies or the size of the category does not seem to make a difference.

General Discussion

Although “win-win” partnerships, such as that between Wal-Mart and Procter & Gamble, are frequently documented in the popular press, academic studies of collaborative ECR relationships are scarce, probably because of the sensitivity of the parties involved in providing the necessary data. Compared with small dealers that frequently constitute the sample of relationship marketing research, it is more difficult to persuade large retailers to cooperate with academic studies. We created the conditions for supplier cooperation with this study by obtaining a retailer’s cooperation and by promising an independent, confidential investigation. This is unique because, in general, suppliers are unwilling to disclose particulars of their relationships with dominant retailers. In addition, archival performance data from the focal retailer complemented the performance perceptions of the suppliers, thus providing a comprehensive view of the effects of ECR adoption.

To the question, “Do collaborative relationships with large retailers benefit suppliers?” the answer is a qualified yes, because suppliers perceived significant economic and learning payoffs. However, contrary to our expectation, ECR adoption led to greater feelings of inequity in the relationship on the part of suppliers. Perhaps this explains why many suppliers complain that they do not observe any benefits from the adoption of ECR (Corsten and Kumar 2003). Although suppliers gain from ECR adoption in absolute terms, as demonstrated by the positive effects on perceived economic performance, archival sales, and capability development, their perception of the inequitable sharing of the benefits and burdens of ECR adoption leads them to believe that they are relatively deprived. In other words, although suppliers gain more in ECR relationships than in other relationships, they still believe that they receive less than they deserve. In addition, the negative interaction between ECR adoption and trust on equity indicates that as suppliers’ trust in the retailer increases, greater ECR adoption makes suppliers believe that they are even more inequitably treated.

The negative impact of ECR adoption on equity, even in the presence of high trust, raises the question whether the suppliers’ feelings of greater inequity in ECR relationships are accurate and justified or merely a perceptual problem. Perhaps, and anecdotal evidence suggests this, smart retailers use their power advantage to extract proportionately greater benefits from ECR adoption while cajoling suppliers into making the necessary investments for ECR. Indeed, our findings suggest that suppliers believe that they are par-

ticularly exploited by retailers that they consider to possess superior know-how in the market. That large and powerful retailers such as Metro, Tesco, and Wal-Mart are demanding that their suppliers adopt ECR may be considered further evidence in support of this point of view. Given retailer power, suppliers have little choice but to comply with retailer demands and learn to live with inequitable returns from ECR adoption.

The alternative view is that suppliers’ perceptions of greater inequity in ECR relationships are inaccurate and that suppliers receive equitable benefits from ECR. Ailawadi’s (2001) findings that, despite 20 years of increasing retail power, supplier rents have actually risen compared with retailer rents may be cited as evidence in support of this view. However, it is possible that suppliers are simply “paranoid” when they claim that retailers always receive the lion’s share (Farris and Ailawadi 1992).

Unfortunately, we cannot make definitive judgments about the accuracy of suppliers’ perceptions of inequity associated with ECR adoption or the process underlying any misperceptions with our data. We must leave the ultimate resolution to further research. Furthermore, from an economic welfare perspective, it would be interesting to understand whether ECR benefits are indeed competed away at the retail level, resulting in tangible benefits for the consumer, such as lower prices, more choice, and more service, or whether it simply leads to greater economic performance for suppliers and retailers.

That trust increases archival sales and that retailer capabilities enhance perceived economic and archival service performance partially support our reasoning. It pays to develop trust in relationships and to work with smarter retailers. In addition, ECR relationships with trusted retailers enhance some of the economic benefits for the supplier. The moderating effects of retailer capabilities are more complex. Unexpectedly, retailer capabilities have a negative interaction with ECR adoption on supplier economic performance. This finding seems somewhat at odds with the observed and expected positive interaction between retailer capabilities and ECR adoption on perceived equity. It implies that smart retailers take a bite out of the supplier’s economic performance, yet suppliers are happier with what is left.

We speculate that gradually, suppliers become dependent on the capabilities of smarter retailers. After all, ECR is a knowledge- and data-intensive process, and as suppliers become increasingly locked in on consumer data and knowledge of smarter retailers, such retailers may be able to extract some of the additional rents generated through ECR adoption and appropriate them for themselves. Still, why do suppliers perceive greater equity in ECR relationships with smarter retailers, especially in light of the lowered supplier economic benefits that they receive from ECR adoption with these capable retailers?

Bargaining and negotiation theory predicts that asymmetric capabilities lead to a perception of relative inferiority, which in turn leads to the passive acceptance of lower performance outcomes. Dwyer and Walker (1981) examine bargaining between pairs of negotiators when there are power imbalances. They show that weaker parties appear to

¹Note that size of the supplier is a different construct from the archival sales measure that we use as one of our dependent variables. Size of the supplier reflects sales to all retailers across all categories, whereas our archival sales measure reflects sales to this retailer in the focal category. The correlation between the two indicators is .133.

expect and to receive a smaller share of the benefits to divide between them, whereas the stronger parties enjoy the reverse situation. In addition, suppliers may be more willing to make concessions to powerful and smarter retailers in the hope that such relationships may help expand market share. Bloom and Perry (2001) find that suppliers of Wal-Mart, certainly a powerful and smart retailer, with a large market share perform better than do large-share suppliers that report retailers other than Wal-Mart as their primary customers. Finally, suppliers learn from smart retailers, which may explain why they believe that it is fair that such retailers take a bigger bite out of the ECR returns. However, these are conjectures that require more rigorous research to resolve.

Limitations

We must note some limitations of this study. First, we conducted our research in a particular setting—that is, with the suppliers of a single retailer—which raises questions of generalizability with respect to both other retailers and other countries. Second, although we obtained archival data on the performance of the suppliers, it would have been useful to examine the retailer's perceptions of ECR adoption and the outcomes from ECR. Adding category or brand development indexes as performance measures to better understand the competitive effects of ECR adoption would also be valuable. The archival service performance measure would benefit from further investigation to better understand what other variables explain the remaining variance. Third, a more stringent test of respondents versus nonrespondents should have been conducted. Fourth, for the first time in the literature, we propose a scale to assess ECR adoption. This scale requires subsequent replication and refinement. Finally, the role of antecedents, focal construct,

and moderating variables (trust and retailer capabilities) and their impact on outcomes would benefit from more stringent longitudinal studies.

Conclusions

Notwithstanding the new relationship paradigm, there is considerable cynicism among suppliers about deeper collaborative relationships with large and powerful retailers. This has led some observers to note that in practice, “the days of power play between retailers and manufacturers are far from over” (Kuipers 2001, p. 25). Despite this, our study demonstrates that suppliers achieve greater economic performance and develop their capabilities in collaborative ECR relationships. These findings apply regardless of whether a supplier is small or large or whether it supplies private-label or branded goods. However, considering the high cost of ECR adoption, suppliers should be prudent and safeguard their investments. If a supplier has a choice, our study provides some guidelines as to which type of retailers it should favor in establishing ECR relationships. As a supplier, it is preferable to partner with trusted and smart retailers.

Our findings on perceived equity indicate that suppliers should be realistic about the sharing of benefits from ECR adoption if they want to avoid negative feelings associated with inequity. Negative inequity can lead to frustration and hostility, and eventually, this can threaten a relationship. It may be wise for suppliers to “manage” equity by adapting their perceptions of contributions and benefits and by accepting some inequity as the “cost of doing business,” particularly when, as we demonstrate herein, there are substantial economic and learning benefits from ECR relationships.

APPENDIX ECR Adoption Measures

Demand Side Collaboration	(1.98, .04) ^g	Collaborative Consumer Value Creation^a	(2.38, .06) ^g
<i>Collaborative Category Development^a</i>	(1.98, .06) ^g	To what extent have the retailer and your company jointly implemented a process to	
For the product range that you have chosen, to what extent have the retailer and your company jointly implemented a process to		<ul style="list-style-type: none"> •display products in combination with complementary products or services; •implement innovative point-of-sales displays, shelves, or services; and •derived all plans and strategies from the principles of creating value for the consumer? 	
<ul style="list-style-type: none"> •share and discuss consumer and shopper wants and needs; •share and discuss shopping, buying, and consumption patterns (e.g., loyalty cards); and •evaluate promotions jointly against a common set of objectives? 		<i>Collaborative Channel Development^a</i>	(1.35, .04) ^g
<i>Collaborative New Product Introduction^a</i>	(2.27, .06) ^g	To what extent have the retailer and your company jointly implemented a process to	
For the product range that you have chosen, to what extent have the retailer and your company jointly implemented a process to		<ul style="list-style-type: none"> •sell products over the internet; •deliver products directly to customers' homes; and •establish other alternative, nontraditional channels to consumers? 	
<ul style="list-style-type: none"> •discuss new product ideas and prototypes; •jointly test prototypes (trial launches), formulas, and recipes; and •evaluate new product introductions jointly against a common set of objectives? 			

APPENDIX Continued

Supply Side Collaboration	(2.55, .06) ^g
<i>Collaborative Planning, Forecasting, and Replenishment^a</i>	(2.38, .06) ^g
For the product range that you have chosen, to what extent have the retailer and your company jointly implemented a process to	
<ul style="list-style-type: none"> •share and discuss planning information, •share and discuss forecasting information, •plan production and replenishment along the whole supply chain, •plan and schedule production processes based on the retailer's sales data, and •optimize product flow while balancing service level and costs along the whole supply chain? 	
<i>Collaborative Transport Optimization^a</i>	(2.74, .08) ^g
For the product range that you have chosen, to what extent have the retailer and your company jointly implemented a process to	
<ul style="list-style-type: none"> •optimize transport utilization without compromising the required service level and •integrate hauliers, logistics, and/or information service providers into operational processes? 	
Enablers and Integrators	(2.28, .05) ^g
<i>Common Data Standards^a</i>	(2.68, .08) ^g
To what extent do the retailer and your company use international standards	
<ul style="list-style-type: none"> •to track and trace products, shipping containers, pallets, and/or locations (e.g., European article numbering); •to exchange master data (e.g., European article numbering); •to share information by the Internet (e.g., global messaging protocols); •for electronic data interchange (e.g., EDIFACT); and •for barcode scanning? 	
<i>Collaborative Operational Problem Solving^a</i>	(2.34, .07) ^g
To what extent have the retailer and your company jointly implemented a process to solve problems concerning	
<ul style="list-style-type: none"> •product availability at point of sales; •delivery accuracy; •production effectiveness; and •upstream supply of ingredients, raw material, and packaging? 	
<i>Collaborative Process Improvement Tools^a</i>	(1.81, .05) ^g
For the product range that you have chosen, to what extent have the retailer and your company jointly implemented a process to	
<ul style="list-style-type: none"> •regularly map and analyze joint processes and •continuously improve processes into more integrated joint processes? 	
To what extent do the retailer and your company use	
<ul style="list-style-type: none"> •profit/cost modeling (e.g., activity based costing) to analyze the supply chain cost and identify joint savings; •scorecards and templates to analyze, assess, and monitor each other's relational capabilities; and •checklists, templates, or guidelines to assist decision making? 	

Transaction-Specific Investments

Physical Assets^b

Our company has made significant investments dedicated to the retailer that cannot be deployed elsewhere in

- production systems (e.g., dedicated lines),
- logistics and distribution systems, and
- information systems.

Process Assets^b

To meet the requirements of dealing with the retailer, our company has specifically tailored the

- category management process,
- product development process,
- promotion process,
- replenishment process, and
- product launch process.

Human Assets^b

Substantial time and effort is spent meeting face-to-face with the retailer's representatives by our

- customer business or key account managers,
- supply chain managers, and
- product development managers.

Cross-Functional Teams^c

To what extent has your company implemented cross-functional teams for

- category management,
- key account management, and
- supply chain management?

Incentive Systems^c

To what extent has your company implemented incentive systems and remuneration policies to support

- category management,
- key account management, and
- supply chain management?

Trust^b

- The retailer usually keeps the promises it makes to our company.
- The retailer gives sound advice on our business, and our company knows it is sharing its best judgment.
- The retailer is concerned about our company's welfare, particularly when making major decisions.
- The retailer responds with understanding when we inform it of problems.
- Our company can depend on the retailer's support in matters of importance to us.

Retailer Capabilities^d

Compared with other retailers that you work with, to what extent has the retailer superior know-how with respect to

- category management,
- supply chain management,
- consumer/customer understanding,
- pricing management,
- promotion management,
- new product launch, and
- new product development?

APPENDIX Continued

Perceived Economic Performance^a

For this product range, and compared with others, how high is your

- profitability,
- turnover, and
- growth?

At the retailer, and compared with other retailers that you work with, for the chosen product range, how high is your

- profitability,
- growth, and
- turnover?

Perceived Equity^f

All things considered, evaluate your company's and the retailer's relative participation in this relationship

- your company's contributions to the relationship,
- the retailer's contributions to the relationship,
- the outcomes your company receives from the relationship, and
- the outcomes the retailer receives from the relationship.

Capability Development^g

Through working with the retailer, to what extent has your company improved capabilities in

- category management,
- supply chain management,
- consumer understanding,
- pricing management,
- promotions management,
- new product launch, and
- new product development?

^aThis is measured on a five-point scale with "nothing planned" and "fully implemented" as the anchors.

^bThis is measured on a seven-point scale with "strongly disagree" and "strongly agree" as the anchors.

^cThis is measured on a five-point scale with "minimal use" and "standard practice" as the anchors.

^dThis is measured on a seven-point scale with "very small extent" and "very large extent" as the anchors.

^eThis is measured on a seven-point scale with "significantly below average" and "significantly above average" as the anchors.

^fThis is measured on a six-point scale with "extremely low" and "extremely high" as the anchors.

^gThe mean and standard deviation for ECR adoption subdimensions are in parentheses.

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