BUYER–SUPPLIER RELATIONSHIPS: DERIVED VALUE OVER TWO DECADES

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This paper reviews studies of buyer–supplier relationships published in four prominent U.S.-based academic journals between 1986 and 2005. Our review revealed that the focus of academic researchers on types of value being extracted from buyer–supplier relationships changed between 1986 and 2005, as did their interest in the buyer mechanisms implemented to create value in these relationships. Although emphasis has changed over time, we found that scholars have primarily investigated four types of value derived from buyer–suppler relationships: operational performance improvements, integration-based improvements, supplier capability-based improvements and financial performance outcomes. The review also noted that researchers considered more buyer–supplier mutual efforts since 1996 than the earlier decade, but the number of studies investigating buyer practices has declined as a percentage of total publications. We conclude with a discussion of the review's implications for future research and practice.

***Keywords:** buyer–supplier relationships; performance; supplier development*

INTRODUCTION

Over the past two decades we have witnessed a surge in the number of academic publications investigating the buyer–supplier relationship, as well as the bifurcation of purchasing and supply chain management as independent streams of research. This increased interest in buyer–supplier relationships is not only apparent in the volume of publications but also in the scope of interest, with scholars in disparate academic fields studying various aspects of the buyer–supplier relationship. In response to the perceived need for a careful consideration of the changes that have taken place, we reviewed this body of literature and analyzed its evolution over the last 20 years. We addressed this need by seeking answers to the following research questions: How have academic studies of buying firms' efforts to maximize the value they derive from their relationships with suppliers changed over the last 20 years? What mechanisms and/or investments were commonly investigated as sources or causes of this extracted value?

In order to answer these research questions, we reviewed the publications in four prominent U.S.-based academic journals that published articles on buyer–supplier relationships between 1986 and 2005. First, we selected the articles published that considered empirical studies of buyer[1]–supplier relationships. Thus, our unit of analysis is the buyer–supplier relationship, and more

[1]The terms buyer and buying firm are used synonymously throughout this paper to describe an industrial buying firm.

precisely, we focus on relationships between industrial firms and their suppliers. Next we created a brief description of each article, noted "patterns" revealed in the summaries, and conduced content analysis on the variables investigated in each study. Then we depicted the number of publications that considered the value extraction categories revealed by the coding in a histogram to determine logical time periods. Using these time periods we constructed a table of the variables studied, including the types of values extracted and the buyer practices or buyer–supplier mutual efforts, grouping them under more general categories. Finally, we illustrated these findings by time period, creating figures that are theoretically causally consistent with extent theory.

Three important underlying assumptions are made in this paper. First, that the variables studied by researchers reflect the interests of those researchers and, second, that the date of publication can be used as a proxy for research interest at various points in time. Finally, that buying firms purchase inputs from suppliers because they perceive value in doing so, and generally seek to maximize the value that they derive or extract from these supplier relationships. Thus, we assume that the methods of value extraction studied by researchers are likely to reflect the mechanisms being used by buying firms in practice and that recording the independent and dependent variables studied by researchers from 1986 to 2005 is a reasonable means by which to evaluate the evolution of researchers' interests and firms' practices over that period of time.

We found an impressive increase in the number of publications focused on buyer–supplier relationships over the past two decades. Furthermore, our review revealed that the types of value being extracted from buyer–supplier relationships, as reflected in research, changed between 1986 and 2005, as did the mechanisms implemented to create value in these relationships. A histogram of the four major value extraction types researched during four time periods revealed that in the late 1980s' research was almost entirely focused on operational performance, integration-based research began in the early 1990s, capability-based research emerged during the late 1990s and financial performance did not become a major focus until the early 2000s. Count data of the variables included in the studies reviewed, coded using content analysis, reported a relatively consistent number of studies considering buyer practices over these time periods but an exponentially increased number of studies conducted that investigate the effects of buyer–supplier mutual effects. Moreover, this data revealed an increased number of mechanisms investigated within these two categories. The actual number of studies considering performance-based studies has not grown, while the number considering the other types of value extraction continue to grow. Figures of four time periods illustrate these findings.

In the following section, we briefly describe our methodology, data collection and analysis. Next, we present our findings and the framework that emerged from the review which categorized the value sought, as well as the buyer mechanisms used, to derive value in studies of buyer–supplier relationships across four time periods. We conclude by discussing the reviews implications research and practice.

METHODOLOGY

In order to answer our research questions, we reviewed a small number of prominent U.S.-based academic journals that met two criteria: (1) publish predominantly empirical papers and (2) include buyer–supplier relationships as an area of interest. We subsequently focused exclusively on journals whose primary domain included purchasing, operations management and management. The purchasing link was an obvious choice; the operations management journals were likely candidates because manufacturing operations, especially, use inputs purchased from suppliers. The management journals were included because of their growing focus on cooperative strategies and strategic alliances. Thus, we chose the *Journal of Supply Chain Management* (JSCM), previously known as the *International Journal of Purchasing and Materials Management*, because it had focused primarily on the purchasing function and suppliers since its inception in 1964. We also chose the *Journal of Operations Management* (JOM), the *Academy of Management Journal* (AMJ) and *Strategic Management Journal* (SMJ), because they are considered high-quality academic publications and contain a growing number of publications focused on buyer–supplier relationships.

We did not conduct a meta-analysis for two reasons. First, our research questions focused on what scholars have studied over the past two decades regarding buyer–supplier relationships and related value extraction, not on what they found. We want to evaluate the presence or absence of something, in contrast to measuring the degree to which something is present or related to something else. Thus, a qualitative approach is more appropriate (Kirk and Miller 1986). Our goal is not to confirm relationships between predetermined constructs or to quantify effect sizes between these constructs. Second, we want to be comprehensive in our review of the articles included in these four journals regardless of the sample size and problems with missing data. In contrast, meta-analyses are often noncomprehensive because many references must be dropped due to small sample sizes and missing data. Missing data are typically the result of the sparse reporting of statistics (missing effect sizes), and missing data related to study characteristics that result from incomplete detailed descriptions (Hedges 1986). Moreover, in meta-analyses, the missing data are often nonrandom because researchers have a tendency to report mostly significant relationships, thus introducing biases (Hedges 1986).

We conducted an exploratory study using a qualitative approach based on an iterative evaluation of the publications under review (Miles and Huberman 1984). A six-step review process was used. First, the authors determined the selection criteria for inclusion in the study: To be included an article had (1) to appear in an issue of these four journals between 1986 and 2005, (2) be an empirical study and (3) to investigate the relationship between industrial buying firms and their suppliers. Three authors reviewed the four journals using these criteria and selected those considered appropriate. If the decision was not straightforward, they sought advice from other authors as to whether it should be included. Only if the authors could agree was the article included. This standardized method of selection allowed us to assure the quality of the studies included (i.e., high-quality journals), be inclusive in our selection (i.e., all empirical publications), yet consistent in our choices, strengthening objectivity and face validity. Our final sample consisted of 85 articles from JSCM, 30 from JOM, seven from AMJ and 29 from SMJ, for a total of 151 articles.

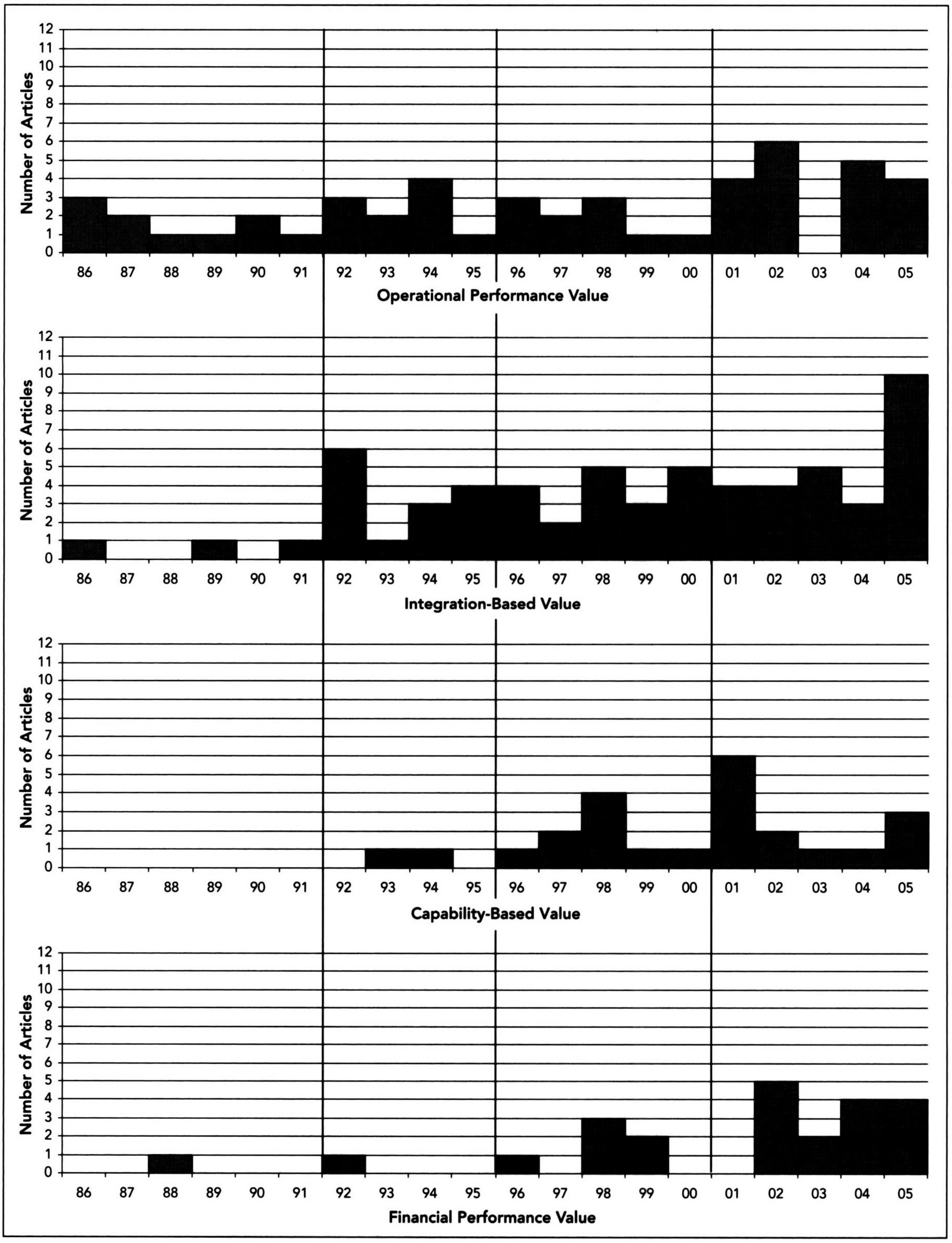
The second step of the review process involved reviewing each article and creating a summary report where a description of each study and the independent and dependent variables under investigation were recorded. The exercise was relatively straightforward as empirical studies typically must very clearly name and define the variables they test, strengthening the validity of the summary data. Three authors wrote the summaries for the journals they had reviewed and if there was any question as to the variables being recorded, we discussed it with another of the authors. Then the first author compiled the summary data. This step resulted in a table that exceeded 17 pages, which was used for further analysis and later simplified for reporting purposes in Appendix A.

Miles and Huberman (1984) suggest that qualitative researchers conduct analysis during data collection and cycle back and forth between thinking about the existing data and generating strategies for collecting new data. They argue that the ideal model for data collection and analysis is one that interweaves the two processes from the beginning. Thus, in the third step, we reviewed the summary data, discussed the changes we saw in the "patterns" of variables included in the publications over the study period and came to a consensus of what we thought we saw. We saw a change over time in what appeared to be four types of value extraction present in a majority of the studies reviewed: operational performance improvements, integration-based improvements, supplier capability-based improvements and financial performance outcomes. We also observed changes in at least two types of buyer mechanisms commonly used: buyer practices and buyer–supplier mutual efforts. Using these six categories or "meta codes" (Miles and Huberman 1984) and their related study variables, we constructed a preliminary framework that illustrated the theoretical relationship of these meta constructs, which were modified and enhanced after further data collection.

In the fourth step, the variables considered in the various articles underwent content analysis (Weber 1985). The first author reviewed each article summary for the sake of consistency, recorded the variable names investigated and evaluated each for similarities or differences from other variable names previously recorded from prior articles reviewed. If there were questions as to whether this was a new variable or simply a different name for a variable already noted, he looked at how it was defined and measured in the articles and discussed any ambiguities with a coauthor known to have expertise in this research area before completing the content analysis. Once the coding definitions were finalized using this method, he reviewed each article again for each unique variable to see how many times each variable was studied and also recorded how many articles included one or more variables (first-level codes) classified within each category revealed in step two above (meta codes) in each year across the four journals. Although the coding done in this step was not double coded, weakening the reliability of the coding, we argue that the data have been consistently coded and, given the involvement and participation of coauthors in this and previous steps, there is strong face and construct validity (Weber 1985).

The fifth step of the review process was to take the data collected thus far and graphically present it to determine logical time periods over the past 20 years. The time periods revealed were used to aggregate the data into meaningful descriptive statistics. In order to identify trends in the longitudinal evolution of the way researchers have studied how buying firms derived value from supplier relationships, we plotted the number of studies that had investigated each of the four types of value extraction into a histogram. The use of a histogram as a visual tool allowed us to identify four main time periods associated with buyer–supplier research in the last 20 years (Figure 1). In qualitative research, techniques for drawing conclusions include counting, noting patterns and clustering, among others (Miles and Huberman 1984). The histogram combines each of these tactics for generating meaning. Using the time periods suggested by the histogram, we were able to aggregate the data coded in step four into Table I to present more meaningful descriptive statistics. While the use of histograms and tables of aggregated data can be perceived as subjective, they are common in qualitative research. Moreover, the small sample sizes in each time period and lack of independence between the variables made statistical testing challenging, even with nonparametric methods.

FIGURE 1
Histograms of Buyer–Supplier Relationships Articles 1986–2005



The sixth and final step of the review process was to note the trends in the variables content coded in each period in Table I and create figures using the framework developed in step three to capture the variables of interest for each of the four time periods identified in step five. In order to structure the discussion of our findings, we decided to follow the four time periods sequentially: 1986–91, 1992–95, 1996–2000 and 2001–05. The following

TABLE I

Buyer–Supplier Publication Statistics

	1986–91		1992–95		1996–2000		2001–05	
	17 articles		28 articles		39 articles		67 articles	
	Count	%	Count	%	Count	%	Count	%
Buyer's practices	12	71	12	43	15	38	14	21
JIT Implementation	5	29	4	14	1	3	2	3
Power/dependence	4	24	3	11	3	8	3	4
Contractual clauses	2	12	—	—	2	5	2	3
Supplier evaluation	1	6	1	4	5	13	3	4
Supplier selection	1	6	2	7	1	3	3	4
Supply base reduction	1	6	3	11	—	—	1	1
Supplier development	1	6	1	4	3	8	1	1
Supplier certification	—	—	—	—	2	5	—	—
Supplier training	—	—	—	—	2	5	—	—
Visits to suppliers	—	—	—	—	2	5	—	—
Supplier incentives	—	—	—	—	—	—	1	1
Buyer–supplier mutual efforts	8	47	9	32	28	72	32	48
Communication	6	35	3	11	9	23	9	13
Information sharing	2	12	6	21	6	15	9	13
Specific investments	1	6	—	—	3	8	5	7
EDI adoption	—	—	2	7	2	5	1	1
Trust	—	—	1	4	9	23	8	12
Knowledge sharing	—	—	—	—	4	10	4	6
Integrated NPD	—	—	—	—	5	13	3	4
Operational performance value	10	59	10	36	10	26	19	28
Quality	6	35	10	36	4	10	12	18
Cost	5	29	3	11	1	3	11	16
Delivery	5	29	1	4	3	8	8	12
Inventory	4	24	—	—	—	—	2	3
Speed / lead-time	1	6	4	14	2	5	2	3
Flexibility	—	—	—	—	2	5	2	3
Agility	—	—	—	—	1	3	2	3
Integration-based value	3	18	14	50	19	49	26	39
Improved cooperation/collaboration/partnership	3	18	11	39	14	36	22	33
Reduction of risk/opportunism/conflict	1	6	2	7	2	5	2	3
Coordination of activities	—	—	2	7	1	3	1	1
Knowledge acquisition/transfer	—	—	—	—	3	8	3	4
Capability-based value	0	0	2	7	9	23	13	19
Global/international capability	—	—	1	4	1	3	1	1
Continuous quality/process improvement	—	—	1	4	3	8	5	7
Technology acquisition	—	—	—	—	2	5	5	7
Improved NPD	—	—	—	—	1	3	4	6
Environmental capabilities	—	—	—	—	1	3	—	—
Financial performance value	1	6	1	4	6	15	15	22
Profit/profit margin/profitability	1	6	1	4	4	10	6	9
ROS	1	6	—	—	1	3	2	3
ROA	—	—	—	—	2	5	6	9
ROI	—	—	—	—	2	5	5	7

TABLE I Continued

	1986–91		1992–95		1996–2000		2001–05	
	17 articles		28 articles		39 articles		67 articles	
	Count	%	Count	%	Count	%	Count	%
Market share	—	—	—	—	1	3	6	9
NPV	—	—	—	—	1	3	1	1
NIBT	—	—	—	—	1	3	1	1
Sales or sales growth	—	—	—	—	—	—	6	9
ROE	—	—	—	—	—	—	1	1
Total return to shareholders	—	—	—	—	—	—	1	1
Moderating variables	1	6	9	32	4	10	5	7
Market characteristics	1	6	5	18	3	8	3	4
Buying's firm characteristics	—	—	4	14	1	3	3	4
Product characteristics	—	—	3	11	1	3	1	1

four sections delve more deeply into the literature and illustrate the changes that have taken place in buyer–supplier relationship research over the past 20 years. Although the following discussion reports the articles and variables found in our review of the selected journals, we also cite other literature as appropriate in our discussion to provide further support for our findings. The reader should also note that due to the time lag inherent in the research process of data gathering, article writing and the publishing cycle, academic reporting often lags practice by at least 2 years. Thus, some buying firms can be expected to have moved more quickly than our report on research publications might suggest. In each time period we report the review results related to our two research questions. How have academic studies of buying firms' efforts to maximize the value they derive from their relationships with suppliers changed over the last 20 years? What mechanisms and/or investments were commonly investigated as sources or causes of this extracted value?

BUYER–SUPPLIER RELATIONSHIPS CIRCA 1986–91

A review of the 17 articles published in these four journals between 1986 and 1991 revealed the primary variables of interest to researchers during this time. In Figure 2, we depict the status of the buyer–supplier relationships circa 1986–91 and the variables of interest in the research reported.

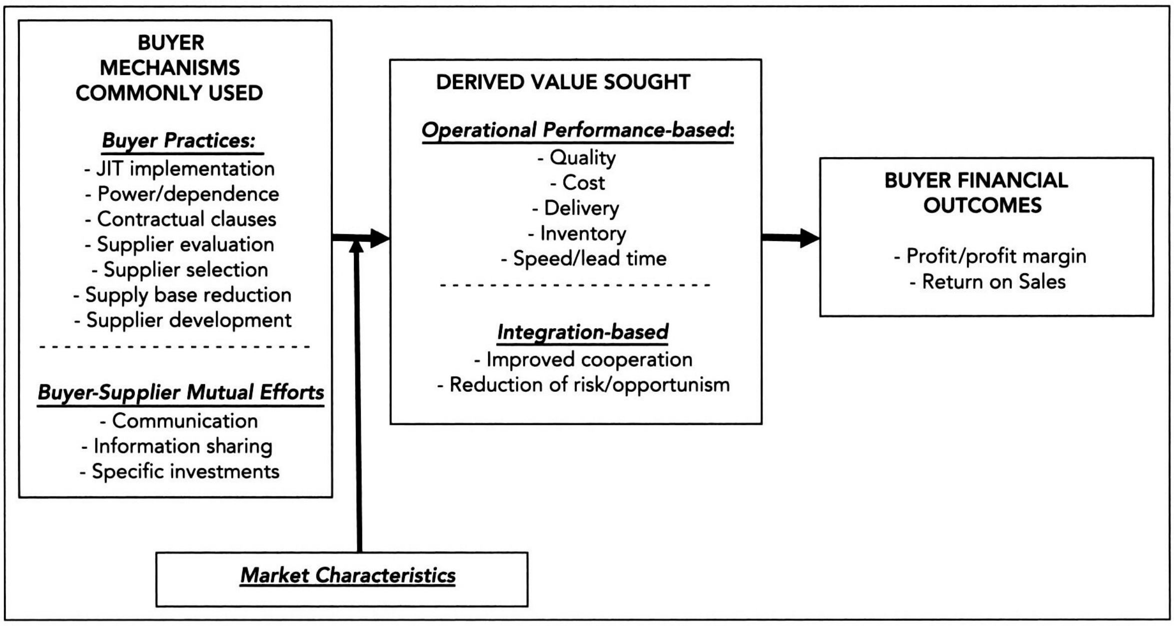
Derived Value Sought

Profitability outcomes, such as return on sales or stock price, were investigated in only one study (Cowley 1988), allowing us to conclude that studies on buyer financial performance were not very representative of this time period. In contrast, 10 studies focused on operational performance-based value extracted from the buyer–supplier relationships, such as quality, cost, delivery, inventor and/or speed. More precisely, quality and cost were considered in six and five studies, respectively, delivery in five studies, inventory costs or inventory levels in four studies and variables associated with speed/lead-time in one study. Thus, it is apparent that researchers between 1986 and 1991 focused primarily on operational performance value goals. During this time period, however, we begin to see an interest in integration-based value. For example, we find that three studies considered at least one variable that could be considered to have integration-based value. Two looked at improved cooperation as a result of partners' practices, including Just-In-Time (JIT) implementation (Celley, Clegg, Smith and Vonderembse 1986), joint problem solving and information exchange (Landeros and Monczka 1989). One looked at effects of cooperation on risk management and operational performance (Spekman 1991).

Buyers' Practices

Economics has historically explored principles related to supply and demand across industries and contract law has sought to help participants protect their own interests in contracted market exchange relationships. However, U.S. manufacturing firms began in the 1980s to move away from short-term contracting with numerous suppliers (i.e., arm's length relationships), which has historically been followed by greater commitment to longer term relationships with fewer suppliers (Lyons, Krachenberg and Henke 1990; Galt and Dale 1991). This shift was largely motivated by the apparent quality gap between Japanese and U.S. manufacturers that still existed after U.S. manufacturers had significantly narrowed the cost gap (Richardson 1993). As U.S. firms looked to Japan for a model of supplier relations they began to emulate key features of the Japanese model such as JIT.

FIGURE 2
Buyer–Supplier Relationships Circa 1986–91



While contracting remained prevalent as a control mechanism in market transactions, long-term contracts created the potential for a higher level of commitment between buyers and their suppliers.

The variables of investigation prevalent during the 1986–91 era, as depicted in Figure 2, reflect this shift to JIT production in the United States, with five studies out of 17 published during this period focused on JIT implementation. JIT focuses on waste reduction by limiting the amount inventories and involves small product batches, balanced work flows, flexible workers and machines, and solving of problems previously masked by larger lot sizes (Celley et al. 1986). In an empirical study of the automotive industry, O'Neal (1987) found that the adoption of JIT by OEM producers had resulted in a reduction of the number of suppliers, an increased intensity of interaction between the OEM firms and their suppliers, a reduction in the finished goods inventories of suppliers and an increase in the frequency of supplier deliveries. Lower levels of inventories also resulted in an increased importance placed on the quality of supplier inputs (Ansari and Modarress 1986).

Porter (1980) argued that industry performance is affected by the power of suppliers. Our review reflects the interest of researchers in the effects of power and dependence of buyers on suppliers with four out of 17 studies considering how power influences value creation. Porter's arguments suggested that a buyer will have power relative to its suppliers if there are many suppliers competing for the buyer's business. Thus, the move toward limiting the number of suppliers appears to be inconsistent with the efforts of firms to gain power relative to their suppliers. However, this move coincides with larger volume orders going to fewer suppliers, which made the buyers more important in the eyes of these suppliers. In sum, the popularity of Porter's model throughout the 1980s encouraged many companies to consider strengthening their basis of power relative to their suppliers. For example, Kraljic (1983) argued for the proactive use of power by buying firms as a leverage tool over suppliers.

Two studies in this era considered organizational economics variables. The Cowley (1988) study considers the effects of industry concentration, relative size, importance of buyer and supplier, and capacity utilization on firms' return on sales and return on total capital. He found that, if favorable, these variables' positive effects have a lasting influence over the entire product life cycle. In addition, the Sriram and Mummalaneni (1990) study found that when buyer alternatives in the supplier market were limited, buyer loyalty to a specific supplier increased regardless of transaction specific assets and durability of the relationship.

It should be noted, however, that efforts to gain power over suppliers by contracting with multiple sources or the development of a dependency relationship can lead to negative effects when trying to implement JIT. Frazier, Spekman and O'Neal (1988, p. 60) noted that the "coercive use of power in interfirm relationships seriously weakens their collaborative nature." JIT required high quality of manufacturing inputs from suppliers, delivered frequently and on time. These requirements appear to have influenced buying firms to change from the coercive use of power by switching suppliers on the basis of price, to concentrating their purchase volumes with fewer suppliers to achieve some level of continuity and performance from suppliers (Hahn, Kim and Kim 1986).

Other buyer organizational practices investigated during this time period included supplier evaluation, contractual clauses, supplier selection, supply base reduction and supplier development. Giunipero (1990) found supplier evaluation to be a key feedback mechanism used by firms that have implemented JIT to improve their operational performance. Articles that included contractual components focused primarily on the length of the contracts (Cusumano and Takeishi 1991; Galt and Dale 1991). Galt and Dale (1991) reported considerable variation in contracts among buying firms and suppliers in their study of firms in the United Kingdom, from no contract to those ranging as long as 5 years. Limited research in the areas of supplier selection, supply base reduction and supplier development suggests an initial interest in these topics.

Buyer–Supplier Mutual Efforts

The mutual efforts by buying firms and their suppliers considered in research during the late 1980s emphasized efforts to improve communication and information sharing. Parallel communication systems with multiple departments provided significant supplier quality improvement according to the Carter (1986) study, and Lascelles and Dale (1989) found that poor communication resulted in failure to achieve supplier quality improvements. A study by Giunipero and Keiser (1987) reported that JIT resulted in improved buyer–supplier communication, while Giunipero (1990) found that effective communication improved JIT activities. Studies by Newman and Rhee (1990) and Galt and Dale (1991) argued that effective communication and information exchange lead to supplier performance improvements while Landeros and Monczka (1989) suggested it leads to cooperative buyer–supplier relationships. Finally, Sriram and Mummalaneni (1990) found that specific investments by either buyer or supplier had potentially positive effects on buyer's loyalty to supplier but that this result was largely industry dependent.

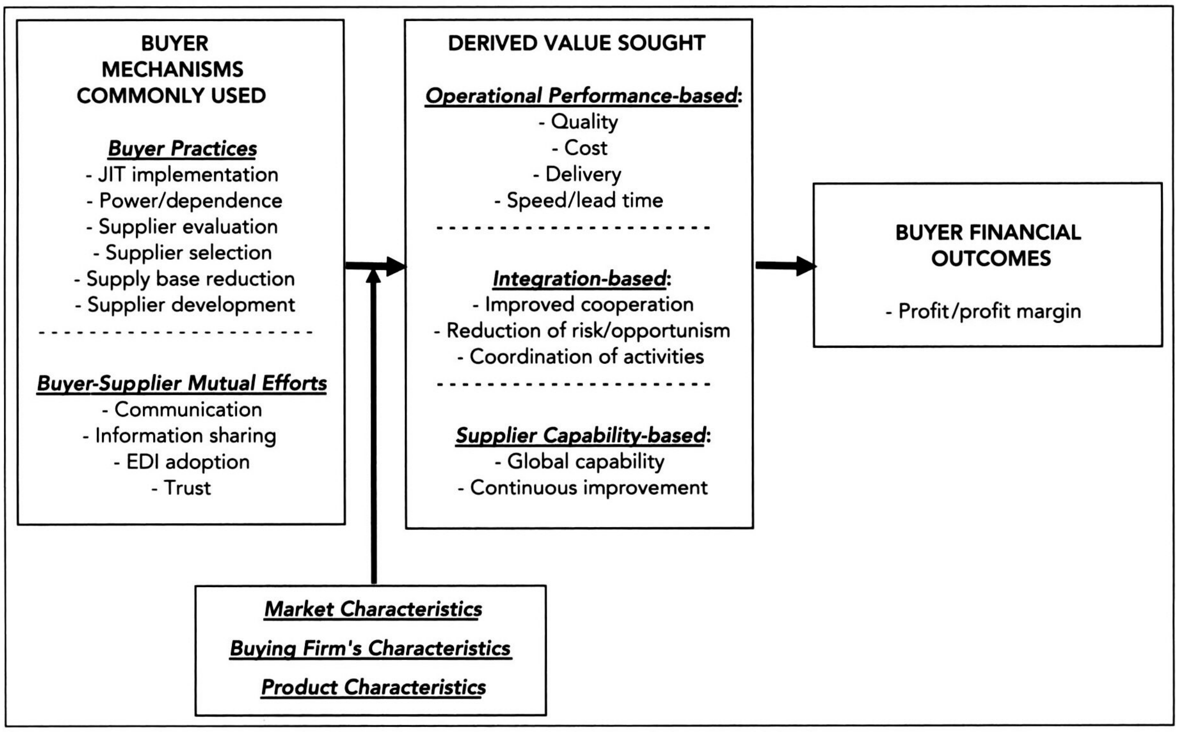
BUYER–SUPPLIER RELATIONSHIPS CIRCA 1992–95

The number of papers published on buyer–supplier relationships in the four journals of interest is more substantial from 1992–95 than from 1986–91, with 17 papers published in 6 years compared with 28 papers published in 4 years, respectively. While operational performance was still a value of interest, a higher percentage of the studies during this second period investigated integration-based value creation (e.g., Heide and Miner 1992; Stuart and Mueller 1994; Ellram 1995). Figure 3 summarizes the important factors influencing buyer–supplier relationships as reflected in the research published during this time period.

Derived Value Sought

Once again, the empirical evidence from the articles published between 1992 and 1995 revealed very little focus on buyers' financial performance, but a continued interest in operational performance-based and integration-based value. In fact, only one article investigated the effect of buyer–supplier relationships on buying firms' financial performance. These results suggest that the research during this time, and potentially the buying firms studied, were focused on long-term investments in addition to short-term financial success. Performance-based studies still focused quality, cost, delivery and speed (e.g., Watts and Hahn 1993). Particularly, research investigated the factors that contribute to improve suppliers' quality performance, including JIT implementation (e.g., Dion, Banting, Picard and Blenkhorn 1992; Richeson, Lackey and Starner 1995), information sharing (e.g., Carter 1986) and partnership longevity (e.g., Graham, Daugherty and Dudley 1994). A much higher proportion of the value extraction variables considered during this period were integration based relative to the previous period, primarily focused on improved cooperation or collaboration. The bulk of integration-based publications investigated the practices that tend to promote buyer–supplier collaboration. The results suggest that the practices that are conducive of collaboration include supply base reduction (Presutti 1992), information sharing (Pilling and Zhang 1992), equitable treatment (Pilling and Zhang 1992), relationship extendedness (Heide and Miner 1992) and Electronic Data Interchange (EDI) adoption (Sriram and Banerjee 1994). In a similar vein, Ellram (1995) identified poor communication as the single largest contributor to partnership failure, followed by other factors such as the lack of shared goals, the lack of supplier commitment and ineffective conflict resolution. Buyers' risk-taking behavior was also studied by Presutti (1992), who noted that a minority of U.S. firms pursue a single sourcing policy to avoid the risk of being overly dependent on one supplier. In contrast, Hines (1995) reported that Japanese firms were not relying as much on single sourcing as commonly reported but that they relied instead on a reduced supply base organized in a network. He reported that this supplier network approach mitigated the risk associated with single sourcing. The value of buyer–supplier coordination was also noted in two studies who reported a positive impact on dyadic sales (Mohr and Spekman 1994) and on the successful adoption of process innovation (Ettlie and Reza 1992). Two studies out of 28 considered capability-based value, one global capability (Birou and Fawcett 1994) and the other continuous quality improvement (Stuart and Mueller 1994), thus suggesting the beginning of what would become a major focus in later periods.

FIGURE 3
Buyer–Supplier Relationships Circa 1992–95



During this time period, the popular press emphasized the importance of the purchasing function to maximizing profits. *Fortune* magazine touted purchasing as a new fast-track job that could "add millions to the bottom line" by consolidating purchases with a few suppliers with which partnerships were formed (Tully 1995, p. 75). An earlier *Fortune* article also noted that both parties benefit when buyer–supplier relationships are cooperative rather than adversarial (Magnet 1994). Prominent companies such as Allied Signal, Honda of America and Motorola were cited as engaging in close customer–supplier relationships to "help trim costs" for both parties (Magnet 1994). Suppliers were described as sharing their company's cost structures with their customers. Popular press articles argued that alignment of the two parties' values and cultures was an important antecedent to a partnership, and some partnerships were formed without formal contracts. For example, a supplier to Honda of America built a new plant dedicated to manufacturing parts for Honda without signing a contract (Magnet 1994).

Buyers' Practices

A review of the literature published between 1992 and 1995 reveals a consistent number of studies that considered buyer practices relative to the earlier period, but a drop in the percentage of studies. Practices that were most commonly studied during this time were JIT, supplier power and supply base reduction, all building on previous research interest. As in the prior time period, the studies on JIT tended to investigate the influence of JIT practices on operational performance indicators (e.g., Dion et al. 1992; Richeson et al. 1995) but Handfield (1993a) also concluded that supply base reduction is a good predictor of the extent to which JIT purchasing was being used. Three studies considered supply power. For example, Holland, Lockett and Blackman (1992) found that buyer power influenced suppliers to invest in EDI systems. However, Stuart and McCutcheon (1995) found no relationship between power and the likelihood of a "win–win" relationship between buying firms and suppliers (p. 7). The three studies on supply base reduction identified a positive effect of supply-base reduction on lead-time reduction (Handfield 1993a), JIT adoption (Handfield 1993b) and depth of the buyer–supplier relationship (Presutti 1992).

Studies also considered supplier evaluation, supplier selection and supplier development, topics that appeared in the earlier period. Watts and Hahn (1993) found that 75 percent of their survey respondents regularly evaluated suppliers, but of those, only 46 percent had formal evaluation systems in place. According to Giunipero and Brewer (1993) firms that utilized supplier evaluation and supplier selection during this time period may have experienced superior supplier performance. Another paper by Wilson (1994) studied supplier selection and determined that quality was the number one criteria for a buyer, followed by cost. Finally, Watts and Hahn (1993) investigated supplier development practices and found that it was more prevalent than generally believed or reported, but that firm size was positively correlated with the likelihood of implementing a supplier development program. The main goal of supplier development reported by buyers was product improvement.

Buyer–Supplier Mutual Efforts

Among the mechanisms used by both buyers and suppliers to increase the value derived from their relationships, communication and shared information are still a prominent focus of researchers during the 1991–95 period. For instance, Mohr and Spekman (1994) and Ellram (1995) found information sharing to be a good predictor of partnership success, while Handfield (1993b) identified information sharing as an antecedent to supply base reduction and to JIT purchasing. Mohr and Spekman (1994) empirically determined that communication quality, in terms of accuracy, timeliness, adequacy and credibility of information exchanged, is a strong predictor of partnership success, which was also indirectly confirmed by Ellram (1995) who identified poor communication as the single largest contributor to a partnership failure.

EDI is a means of information sharing that necessitates a coordinated effort of both buyer and supplier and trust is argued to be important to willingness to invest in spite of the risk for opportunism. Two articles tackled the issue of EDI implementation and determined that buyer power, the type of product and the nature of the transaction were important considerations in influencing suppliers to adopt EDI (Holland et al. 1992), and that EDI adoption tended to promote long-term buyer–supplier relationships. Evidently, EDI implementation exposes suppliers more than buyers to risk, given the high degree of asset specificity of the investment, which is associated with an increased dependence and risk of opportunistic behavior by buyers. The first study on trust (Mohr and Spekman 1994) appeared during this period, which is a topic that would quickly capture the focus of many researchers.

In summary, for the articles that appeared during 1992–95 in the four journals reviewed, operational performance remained an important value of interest, but integration-based values became much more prevalent than in the earlier period. Buyers' practices continue to be considered important variables of interest, although considerations of mutual efforts by buyers and suppliers became more prevalent. Furthermore, studies during this time suggest that researchers recognized that the characteristics of the market, characteristics of the buying firm and characteristics of products purchased moderate the relationship between mechanisms used to derive value from the buyer–supplier relationship and the value actually attained.

BUYER–SUPPLIER RELATIONSHIPS CIRCA 1996–2000

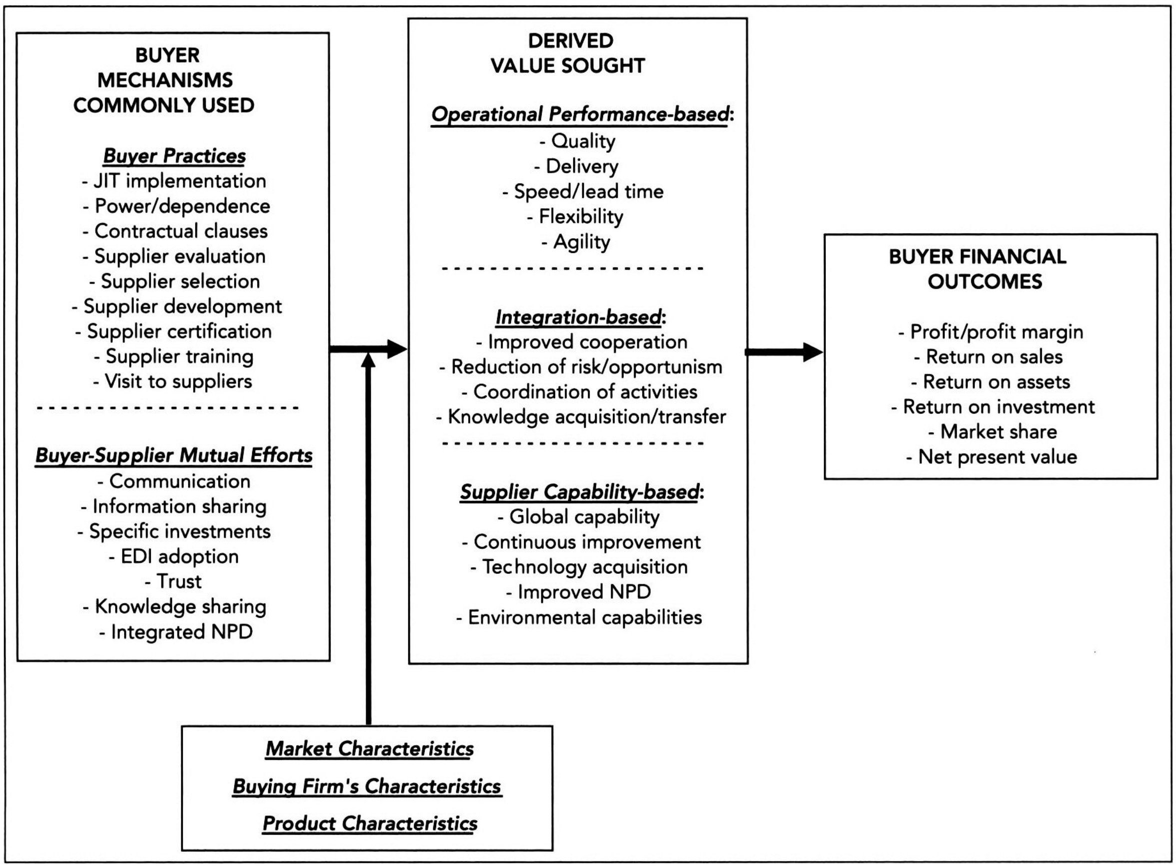
Figure 4 depicts buyer–supplier relationships during the time period of 1996–2000. During this period the number of papers published on buyer–supplier relationships in the four journals reviewed increased to 39. Publications during this period evidenced a stronger theoretical base than prior periods, and incorporated a wider variety of theoretic perspectives, including transaction cost economics (e.g., Dyer 1996, 1997; Krause 1999; Kaufman, Wood and Theyel 2000), organizational learning (e.g., Dyer and Nobeoka 2000; Kale, Singh and Perlmutter 2000), agency theory (e.g., Lassar and Kerr 1996), resource-based view (e.g., Combs and Ketchen 1999), relational theory (e.g., Dyer and Nobeoka 2000; Kale et al. 2000), conflict theory (e.g., Kale et al. 2000), exchange theory (e.g., Holm, Eriksson and Johanson 1999), game theory (e.g., Cool and Henderson 1998; Mudambi and Helper 1998) and resource dependency (e.g., Cool and Henderson 1998).

Derived Value Sought

The types of value creation under consideration during this third period had some similarities with those of the previous periods but also some major differences. Unlike previous periods, financial performance became more prominent in considerations of value extraction, with 15 percent of the studies conducted considering financial performance and a greater variety of financial outcomes (Table I and Figure 4). While still prevalent, studies of operational performance-based goals represented a lower percentage of the total publications during this period than they had previously. While fewer considered quality and cost, researchers continued to consider delivery and lead-time reduction (e.g., Hendrick, Carter and Siferd 1996), as well as new variables such as agility or responsiveness (Meier, Humphreys and Williams 1998) and flexibility (Zaheer, McEvily and Perrone 1998). The focus on integration also continued to grow (19 articles total) by focusing on the factors that improve cooperation, collaboration and partnership (e.g., Krause 1997; Moore 1998; Combs and Ketchen 1999; Kaufman et al. 2000) or, to a lesser extent, on the performance improvements resulting from integrative practices (e.g., Holm et al. 1999). A limited number of studies considered risk reduction, coordination of activities and knowledge transfer.

However, our review also suggests 1996 through 2000 was an increasingly competitive time period that resulted in new demands by buying firms on their suppliers. These demands are reflected in published research that considered capability-based goals such as achieving

FIGURE 4
Buyer–Supplier Relationships Circa 1996–2000



availability of suppliers' parts at multiple locations across the globe, new product or technology development, the ability to continuously improve, technology acquisition and environmental capabilities. Three studies looked at continuous improvement (Forker 1997; Koufteros, Vonderembse and Doll 1998; Krause, Handfield and Scannell 1998) and two considered technology acquisition from suppliers (Hartley, Zirger and Kamath 1997; Kaufman et al. 2000). McGinnis and Vallopra (1999) found a significant relationship between involvement of purchasing and supplier personnel during new product development (NPD) and new product success. Bozarth, Handfield and Das (1998) reported that many U.S. firms were purchasing internationally in order to achieve lower costs and higher quality, but were lagging in their attempts to integrate these sources from a strategic standpoint. Thus, we find an increased interest in capability-based value extraction in the published research during this period.

Buyers' Practices

While studies that considered buyers' practices were still important, they represented a lower percentage of the studies published between 1996 and 2000 than in prior periods. Furthermore, there was a shift away from studies on JIT and more focus on supplier evaluation. Five studies considered the effects of supplier evaluation on value creation, suggesting an increased interest in the buyer practice. Supplier evaluation processes are often part of a formal program set forth by the buying firm to manage external suppliers. From a practical perspective, supplier evaluation efforts by buying firms represent in-depth evaluations of suppliers' performance (Giunipero 1990). An important part of the assessment process includes providing evaluative feedback to suppliers. The feedback serves to clarify the buying firm's expectations and provide the supplier with directions for improvement (Choi and Hartley 1996). Finally, the assessment and feedback process also incorporates the competitive forces of the market, in that a buying firm will advise the supplier of its performance compared with its competitors, and provide encouragement so it improves its performance (Krause, Scannell and Calantone 2000). A study by Forker, Ruch and Hershauer (1999) found that buyers were more inclined than suppliers to believe in their supplier rating system. Despite this evidence of supplier skepticism, several studies have identified performance improvements associated with the use of supplier evaluation programs including lead-time (Hendrick et al. 1996), environmental responsibility (Walton, Handfield and Melnyk 1998) and ROI (Germain and Droge 1998).

During this time period, three studies considered power and three studies focused on supplier development. The three studies on power were particularly interested in the effect of power or dependence on various aspects of performance. For example, evidence gathered in these studies suggests that the higher a supplier's dependence on a buyer the more negative the impact on the customer's quality performance (Forker 1997), and on the supplier's profitability (Cool and Henderson 1998), but that mutual dependence had a positive effect on the buyer's profitability (Holm et al. 1999). The three articles on supplier development investigated the factors that promote supplier development activities (Krause 1999), the performance outcomes of supplier development (Krause 1997) and identified two types of supplier development approaches: the strategic approach and the reactive approach (Krause et al. 1998).

Interest in contractual clauses surfaced again, after no studies on the topic in the second period reviewed, and three new practices that had not previously been considered emerged: supplier certification, supplier training and visits to the supplier. The main emphasis of these studies was to investigate the effects of these practices on suppliers' performance (e.g., Forker et al. 1999) and on buying firms' performance (e.g., Germain and Droge 1998; Tan, Kannan and Handfield 1998).

Buyer–Supplier Mutual Efforts

Our review revealed a major increase in the interest in buyer–supplier mutual efforts between 1996 and 2000 (Table I). Communication and information sharing continued to attract the attention of researchers, but studies that included trust greatly increased. Several studies on communication and information sharing identified a positive influence on buyer–supplier relationships and partnerships (e.g., Ellram and Edis 1996; Moore 1998). Furthermore, communication was found to reduce NPD delays (Hartley, Zirger and Kamath 1997) and improve supplier quality performance (Forker et al. 1999), while information sharing improved buying firm's performance (Germain and Droge 1998; Tan et al. 1998). Interorganizational trust was found to be a strong predictor of performance (Zaheer et al. 1998). Empirical results suggested that trust plays an important role in achieving successful partnerships (Ellram and Edis 1996) and alliances (Whipple and Frankel 2000). This result is consistent with Hunter et al. (1996) who noted that the transition from combative to collaborative buyer–supplier relationships follows an evolutionary path that entails a trust building process. Commitment (Moore 1998), expectation of continuity (Krause et al. 1998) and cooperation (Ellram and Edis 1996) were among several trust-related factors that were found to be tied to collaboration between buyers and suppliers.

Other mutual efforts considered included relationship-specific investments, EDI adoption, knowledge sharing and integrated NPD. Specific investments relate to the investment of difficult-to-retrieve assets that are unique to a particular buyer–supplier relationship. Two articles by Dyer (1996, 1997) concluded that transaction costs do not necessarily increase with the level of specific investments in the buyer–supplier relationship. Dyer also reported that a high level of human asset specificity has a positive effect on quality and cycle time, while a high level of site specificity, manifested by a short physical distance between buyer and supplier, has a beneficial effect on inventory level. Marcussen (1996) found that EDI adoption strengthens the buyer–supplier relationship while Walton and Marucheck (1998) asserted that the benefits of EDI adoption are largely contingent upon the buyer's experience with EDI, the willingness of buyers and suppliers to share sensitive data and the level of integration of EDI with other computer applications.

Two new areas of investigation were knowledge sharing and integrated NPD. In particular, knowledge transfer was investigated in the context of supplier networks (e.g., Lorenzoni and Lipparini 1999; Dyer and Nobeoka 2000) and was found to have a positive effect on buyers' performance (Tan et al. 1998). The articles on suppliers' involvement in NPD also reported benefits of this practice, including an increase in NPD success (McGinnis and Vallopra 1999), a decrease in the number of delays (Hartley, Zirger and Kamath 1997) and collaboration between buyers and suppliers (McIvor and McHugh 2000).

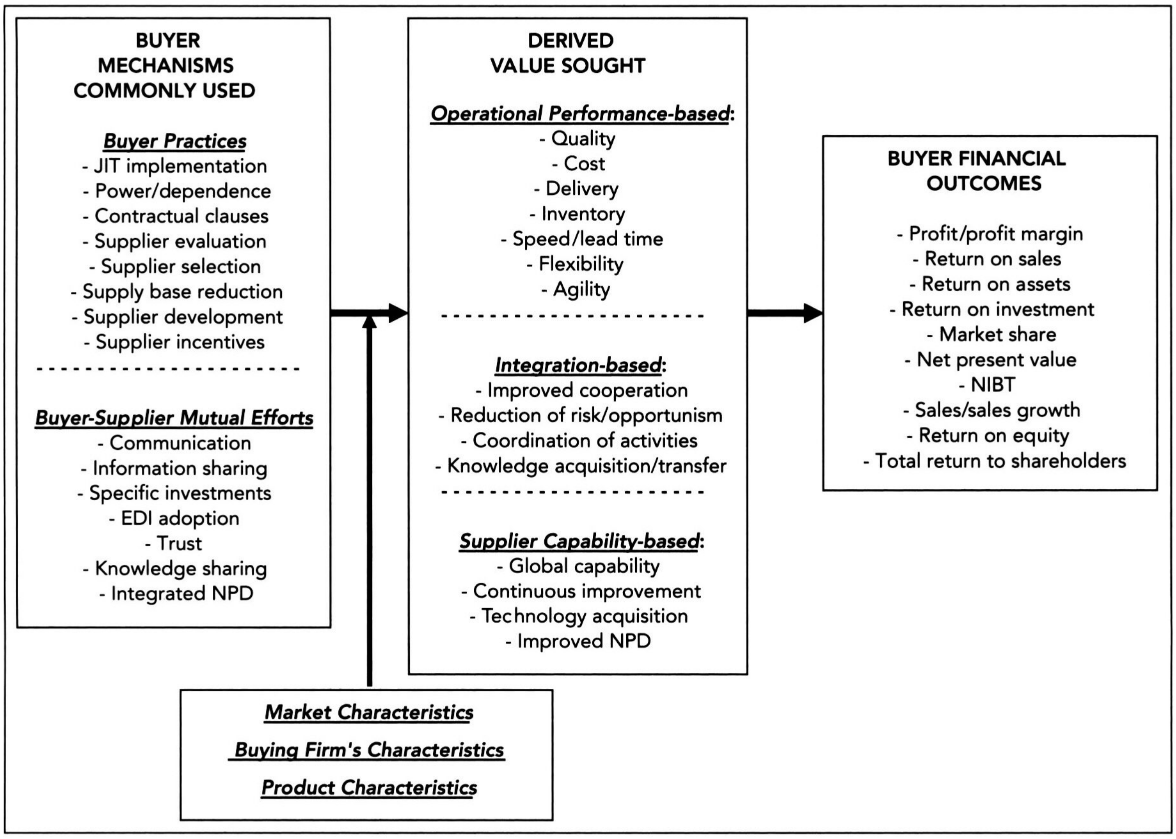
BUYER–SUPPLIER RELATIONSHIPS CIRCA 2001–05

During the 2001–05 period, 67 articles on buyer–supplier relationships were published, which makes it the most prolific of the four periods identified in this paper in terms of number of articles. Thus, it is not surprising that the number of studies that investigated all four types of value extraction increased (Table I, Figure 5).

In the 2001–05 period researchers continued to draw from a diverse theoretical base with articles incorporating transaction cost theory (e.g., Lonsdale 2001; Leiblein, Reuer and Dalsace 2002; Kwon and Suh 2004; McNally and Griffin 2004), agency theory (e.g., Zsidisin and Ellram 2003), game theory (e.g., Welling and Kamann 2001), contingency perspective (e.g., Claycomb and Frankwick 2004), resource-based theory (e.g., Leiblein and Miller 2003; Hult, Ketchen and Slater 2005) and organizational learning theory (e.g., Wagner and Bukó 2005).

Perhaps the most striking change from the previous time period is the surge of articles investigating buying

FIGURE 5
Buyer–Supplier Relationships Circa 2001–05



firms' financial performance. The bulk of these 15 articles attempted to determine the effects of various buyer–supplier integration practices on a buying firm's financial performance. Empirical results suggest that a buying firm's performance is positively affected by buyer–supplier integration in general (e.g., Ellram, Zsidisin, Siferd and Stanly 2002; Frohlich and Westbrook 2002; Narasimhan and Kim 2002; Rosenzweig, Roth and Dean 2003; Droge, Jayaram and Vickery 2004; Petersen, Ragatz and Monczka 2005) and more specifically by product development integration (e.g., Tracey 2004), collaborative planning (e.g., Petersen et al. 2005) and information systems integration (e.g., Vickery, Jayaram, Droge and Calantone 2003; Sanders 2005). The range of financial performance indicators tested has also grown from the previous time period and includes such indicators as sales (e.g., [103]Rosenzweig et al. 2003; Tracey 2004; Petersen, Handfield and Ragatz 2005), return on equity (ROE) (Petersen et al. 2005), total return to shareholders (Ellram et al. 2002) and net present value (NPV) of the buying firm (Chen, Paulraj and Lado 2004). Overall, these results have important implications for practitioners because they highlight the importance of integration practices on the bottom line.

The study of operational performance-based value derived from the buyer–supplier relationship not only continued but almost doubled. Not only did the total number of publications on the topic increase but the percentage of the total increased from the prior period. Nineteen articles investigated operational performance improvements in such areas as cost (e.g., Dong, Carter and Dresner 2001), quality (e.g., Stanley and Wisner 2001; Tan 2002), cycle time (e.g., Elmuti 2002; Hult, Ketchen and Nichols 2002) and other performance dimensions previously studied in earlier time periods. However, it is also interesting to note that researchers have begun to investigate new contexts, including performance of first and second tiers suppliers (Park and Hartley 2002), customer service (Elmuti 2002) and buyer's logistics costs (Dong et al. 2001).

During this time period, the number of papers studying integration-based and capability-based value associated with buyer–supplier relationships also increased in number. The most apparent changes were in 2001 when six studies included capability-based variables and in 2005 when there was a surge in the number of articles dealing with buyer–supplier integration. In addition to the studies noted above that looked at financial performance, integration was conceptualized as supply chain integration or improved collaboration (Frohlich and Westbrook 2002; Vickery et al. 2003) and cooperation (e.g. Fredendall, Hopkins and Bhonsle 2005; Petersen et al. 2005). These articles overwhelmingly reported the positive effects of buyer–supplier integration practices, or the moderating effect of integration between purchasing practices and performance outcomes (e.g. Narasimhan and Das 2001). In the 2001–05 time period, several articles also reported the benefits for buyers to take advantage of suppliers' capabilities, for instance by incorporating suppliers' technology into new products (e.g., Leiblein et al. 2002; Nicholls-Nixon and Woo 2003). Nicholls-Nixon and Woo (2003) found evidence suggesting that firms could enhance their technical output (measured as the number of patents) by multiplying alliances with technically capable suppliers. However, Petersen et al. (2005) show that acquiring suppliers' technical capabilities is better achieved when buyer and supplier depend on well-defined and jointly agreed technical metrics and targets. Park, Hartley and Wilson's (2001) study suggests that suppliers that received the highest performance rating are suppliers with the strongest process improvement capabilities, but not those who emphasize conformance quality. Finally, McGinnis and Vallopra (2001) found that taking advantage of supplier process improvement capabilities is facilitated by a strong involvement of the purchasing function, and by making supplier involvement a high priority for the buying firm.

In the popular press during the same time period, buying firms were reported to be faced with a paradox in establishing cooperative relationships with suppliers: How do they structure the relationship so as to derive the greatest benefit from the cooperation and collaboration, while keeping the supplier competitive in terms of market price? The trade literature covered efforts by Daimler-Chrysler, Toyota and Nissan to cut supply costs (Dawson 2001; Stundza 2001). At that time, Toyota and Nissan were dropping inefficient suppliers and pushing the remaining suppliers to cooperate in cost-cutting efforts (Dawson 2001). Chrysler, known for its cooperative efforts with suppliers under the Supplier Cost Reduction Effort (SCORE) program, was asking for 5 percent annual price reductions instead of the 3 percent of previous years. Some suppliers were reportedly balking at these efforts, stating that such price cuts were unreasonable (Green 2000).

Buyers' Practices

Both the number of studies that considered buyer practices and the percentage of studies investigating them dropped once again during the 2001–05 period (Table I). There were still a few studies on JIT implementation, power, supplier evaluation, contractual clauses, supplier selection, supply chain reduction and supplier development, but no studies of supplier certification, supplier training or visits to suppliers. A new practice of interest did appear: supplier incentives were considered in one study. Krause and Scannell (2002) found that product-based firms are more likely to rely on incentives and direct involvement than service-based firms.

Buyer–Supplier Mutual Efforts

Interest and consideration of buyer–supplier mutual efforts continued to increase in absolute number, although the percentage of these publications dropped somewhat. It is no surprise that communication, information sharing and trust remained the most often included variables of interest. The articles on communication and information sharing focused mostly on identifying the performance improvements associated with good communication and information sharing practices. For instance, results suggest that communication improves operational performance (Knemeyer and Murphy 2004) and collaboration (Prahinski and Benton 2004), and that information sharing promotes cycle time reduction (Hult et al. 2005), buyer's financial performance (Vickery et al. 2003) and supplier's commitment (Kwon and Suh 2004). Moreover, information sharing was found to be a good predictor of the buyer's competitive position (Tan 2002) and was found to be the single most important assessment factor used in supplier selection (Kannan and Tan 2002). There were several studies that considered the effects of trust on buyer performance (e.g., Johnston, McCutcheon, Stuart and Kerwood 2004; Knemeyer and Murphy 2004) or on supplier performance (e.g. Benton and Maloni 2005), but research had not gone as far as to analyze trust's direct influence on financial performance for the buying firm.

There was still some interest in understanding the effects of investments specific to a buyer–supplier relationship (Lonsdale 2001; Leiblein and Miller 2003; Subramani and Venkatraman 2003; Kwon and Suh 2004; McNally and Griffin 2004), knowledge sharing (e.g., Kotabe, Martin and Domoto 2003; Hult et al. 2005; Wagner and Bukó 2005) and integrated NPD efforts between buyers and their suppliers (McGinnis and Vallopra 2001; Takeishi 2001; Primo and Amundson 2002). Only one study considered EDI adoption and its effect on supply chain coordination (Hill and Scudder 2002).

REVIEW, DISCUSSION AND CONCLUSION

Our review of four major journals expected to contain the most advanced research conducted in the area of buyer–supplier relationships revealed a total of 151 publications on the topic over the past 20 years. During the 1986–91 time period only 17 articles were published. The studies reviewed primarily focused on the effects of buyer practices (e.g., JIT implementation, power/dependence, supplier evaluation and contractual clauses), and buyer–supplier mutual efforts (communication and information sharing) on operational performance-based value such as quality, cost, delivery and inventory.

Over the 1992–95 time frame 28 articles were published. This is nearly twice as many as in the previous 6-year period (but in only 4 years) and suggests the increased interest in studies of buyer–supplier relationships in the early 1990s. In addition to continued interest in performance-based value, researchers began a major focus on integration-based value during this time (e.g., improved cooperation/collaboration/partnership). The number of studies that considered buyers' practices and mutual efforts was fairly constant with the prior period, but there were some changes in the types of buyer–supplier mutual efforts considered.

There were 39 empirical articles published between 1996 and 2000 on buyer–supplier relationships. These studies continued to consider factors that influence operational performance and integration-based value, but also began to investigate factors believed to affect capability-based value in the form continuous improvement, technology acquisition and improved NPD. In addition to the buyer practices noted in earlier years, researchers put more emphasis on supplier evaluation, development, certification and training, as well as visits to suppliers. Moreover, the number and percentage of the studies that considered buyer–suppler mutual efforts drastically increased relative to the two previous periods.

Finally, between 2001 and 2005, a total of 67 articles were published in these four U.S. academic journals. An impressive number and percentage of these studies considered the impact of buyer–supplier relationship practices and mutual efforts on buying firms' financial performance. The number of performance-based studies almost doubled relative to the prior period, while the number of studies that investigated the effects of buyer–supplier relationships on integration-based value and capability-based value continued to increase. The number of studies that included buyer practices remained almost constant, but the number of studies that investigated the effects of buyer–supplier mutual efforts continued to increase. With this summary of the publications over the past two decades, we now turn to a discussion of the implications of our findings for research and practice.

Implications for Research

It is our sincere hope that this review of the past 20 years of buyer–supplier relationship research will encourage the field to move beyond the investigation of general alliance and network relationship management to more focused studies of the relationships between buyers and their strategic suppliers. Doing so will provide more insights into the actual practices, and mutual efforts buyers and their suppliers have and can invest in so they can both derive value. Areas of potential interest include, but are not limited to, supplier development, certification, training, incentives and more face-to-face interactions such as visits and colocation of employees. It was really surprising to find that only six articles of the 151 reviewed were dyadic buyer–supplier studies, where both the buying firm and supplier participated.

The review also highlights a deficit in longitudinal studies. The use of longitudinal research, although challenging, would provide important insights about the dynamics of buyer–supplier relationships. Currently, the research is almost exclusively cross-sectional and assumes that relationships are static in nature. In contrast, longitudinal studies could help identify how buyer–supplier relationships develop and fall apart, and investigate how contextual conditions may affect the development of buyer–supplier relationships. For instance, it would be interesting to investigate whether economic recessions have a negative impact on the establishment of collaborative buyer–supplier relationships.

In reviewing this body of research, we believe that future research needs to recognize the limitations of a single theoretical perspective and adopt multiple theories to explain how buyer practices and buyer–supplier mutual efforts influence the derivation of value from these relationships. A diverse set of theories have been used to explain value extraction in buyer–supplier relationships: e.g., organizational economics, resource dependency theory, transaction cost economics, resource-based theory, relational theory, game theory and learning theory to name a few. Although there is, in general, an agreement that relationships between buyers and sellers are becoming more and more important, these theoretical foundations have few common themes. This was reflected in Osborn and Hagedoorn's observation in 1997 that the once strongly held assumption that adopting a host discipline yielded clear-cut, defensible and testable hypotheses has not proven true. "Initially, they seemed to provide dramatic progress; over time, they have yielded a series of conflicting, limited, and biased views .... We encourage researchers to abandon a singular, clear-cut description of alliances and networks based on the assumptions of a host discipline in favor of a more robust, sophisticated, multidimensional view" (p. 274). Research suggests that a value extraction is a multifaceted phenomena that can only be explained by a multitheoretical perspective.

The review has made it apparent that research that considers buyer–supplier relationships and their efforts to derive value have become much more complex over the past 20 years. In addition to multiple theories, we argue that future research needs to acknowledge this complexity and focus more on the potential for practices and mutual efforts to mediate and moderate as well as directly effect value extraction. Although not a prominent point of our discussion, Table I and Appendix A reveal a paucity of research that has considered mediating or moderating effects. Furthermore, we encourage researchers to consider more contextual variables that can moderate the relationships that are beginning to become well established (e.g., contextual factors that moderate the effect of trust on operational performance). The effects of many buyer, supplier and market characteristics, as well as product characteristics have yet to be explored.

Similarly, our analysis leads us to believe that research should put more emphasis on investigating the conditions under which various integrative approaches are justified and are most effective. Thus, instead of making a blanket statement about the benefits of collaboration, research should work on identifying how various contingencies moderate the relationship between integration practices and performance. Research questions could include: under what market conditions are information sharing and trust beneficial for the buyer in terms of operational improvement? Under what product characteristics do integrated NPD and knowledge sharing provide the highest return in terms of increased operational performance? And, how can practitioners detect when these contextual conditions are met?

Finally, the concept of sustained competitive advantage deserves more emphasis by researchers investigating value extraction from buyer–supplier relationships. Research should identify the types of practices and the conditions likely to gain a firm a competitive advantage and consider the durability of those advantages. For that, the use of theory, such as the resource-based view or the competence-based approach (e.g., Prahalad and Hamel 1990), should guide research, with an emphasis on utilizing multiple-theory studies, as we advocated earlier.

Implications for Practice

This review of the literature of the last 20 years also provides insights for practitioners. First, research on collaborative buyer–supplier relationships appears to have followed a similar path as the research on quality management in the 1980s and 1990s by focusing first on operational improvements and much later on financial performance. While operational improvements attributed to TQM practices were established early in the 1980s, financial benefits of quality management were only established in the late 1990s (e.g., Hendricks and Singhal 2001). Our review suggests that a similar pattern emerged in the buyer–supplier relationships literature. As pointed out earlier, the link between collaborative buyer–supplier relationships and operational performance was an important research focus throughout the past two decades, but the focus on financial performance only became evident after 2001. However, unlike in the quality management field, the financial benefit of collaboration has been established without too much struggle. Thus, practitioners can be confident that pursuing appropriate purchasing practices will positively impact the bottom line.

Second, our review has highlighted four main types of value extraction companies are seeking today: operational performance improvements, integration-based improvements, supplier capability-based improvements and financial performance outcomes. Purchasing agents should carefully consider which types of value extraction are most relevant to which suppliers in order to gain the value sought most efficiently and effectively. Our review suggests that operational performance will continue to be important in many buyer–supplier relationships; however, integration-based and capability-based value can be expected to continue to become more and more important. For example, buyers have recently started to focus on capability-based value extraction, which consists in trying to capitalize on suppliers' capabilities such as international experience, continuous improvement capabilities, environmental capabilities, by involving suppliers in NPD, or by acquiring a supplier's technical knowledge. Research has shown that competitive advantage is fleeting and firms that want to retain it most constantly create value more effectively and efficiently than their primary competitors.

Third, our review of the academic research suggests that practitioners have become more sophisticated in their approaches to enhancement of supplier relationships over the past 20 years. If research and popular press articles are a reflection of practice, buying firms now expect more from their suppliers than they did in the past, but are also more willing to help suppliers if they need help. Furthermore, suppliers have increased expectations regarding the investments that should be forthcoming from their buyers. Our review should serve as a wake-up call to all that have been unwilling to invest in buyer mechanisms to enhance value creation and encourage purchasing agents and firms to make the necessary investments to create value. Table I provides a good review of the various buyer practices and buyer–supplier mutual efforts that companies are using today. Not all would be appropriate for all buyer–supplier relationships, but buyers should be willing to invest in a variety of mechanisms to enhance value extraction from their key suppliers. Practitioners must, within an environment of constrained resources, decide which relationships require these activities, and when. Furthermore, they must ascertain which activity is most likely to yield the value sought.

Conclusion

This article reviews studies of buyer–supplier relationships published in four prominent U.S.-based academic journals between 1986 and 2005. Our review revealed that the focus of academic researchers on types of value being extracted from buyer–supplier relationships changed between 1986 and 2005, as did their interest in the buyer mechanisms implemented to create value in these relationships. Our recommendations for future research include using more dyadic studies, more longitudinal studies, the use of multiple, complementary theoretical lenses and an increased focus on the concept of sustained competitive advantage through purchasing practices. We hope that researchers will consider these ideas as they develop new research questions and initiate new research efforts.

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APPENDIX A

Summary of Buyer–Supplier Publications Between 1986 and 2005

#	Year	Authors	Journal	Vol	Issue	Page	Buyer's Practices	Mutual Efforts	Performance-Based	Integration-Based	Capability-Based	Financial Perf.	Moderators
1	1986	Ansari & Modarress	JSCM	22	3	11	X		X				
2	1986	Celley, Clegg, Smith & Vonderembse	JSCM	22	4	9	X		X	X			
3	1986	Carter	JSCM	22	4	16		X	X				
4	1987	O'Neal	JSCM	23	1	7	X		X				
5	1987	Ansari & Heckel	JSCM	23	2	22	X		X				
6	1987	Giuniperio & Keiser	JSCM	23	4	19	X						
7	1988	Felch & Felch	JSCM	24	3	36							
8	1988	Cowley	SMJ	9	3	271	X		X			X	
9	1989	Lascelles & Dale	JSCM	25	2	10	X	X	X				
10	1989	Landeros & Monczka	JSCM	25	3	9		X		X			X
11	1990	Hahn, Watts & Kim	JSCM	26	2	2	X		X				
12	1990	Giunipero	JSCM	26	3	19	X	X	X				
13	1990	Newman & Rhee	JSCM	26	4	15		X					
14	1990	Sriram & Mummalaneni	JSCM	26	4	21		X					
15	1991	Spekman	JSCM	27	1	2	X	X	X	X			
16	1991	Galt & Dale	JSCM	27	1	16	X	X					
17	1991	Cusumano & Takeishi	SMJ	12	8	563	X						
18	1992	Heide & Miner	AMJ	35	2	265				X			
19	1992	Etlie & Reza	AMJ	35	5	795			X	X			
20	1992	Presutti	JSCM	28	1	2	X			X			
21	1992	Pilling & Zhang	JSCM	28	2	2		X		X			
22	1992	Perdue	JSCM	28	3	26			X	X			X
23	1992	Dion, Banting, Picard and Blenkhorn	JSCM	28	4	32	X	X	X				
24	1992	Turnbull, Oliver & Wilkinson	SMJ	13	2	159	X			X			
25	1992	Stiles	SMJ	13	3	171						X	X

APPENDIX A Continued

#	Year	Authors	Journal	Vol	Issue	Page	Buyer's Practices	Mutual Efforts	Performance-Based	Integration-Based	Capability-Based	Financial Perf.	Moderators
26	1992	Holland, Lockett & Blackman	SMJ	13	7	539		X					X
27	1993	Handfield	JOM	11	2	289	X	X					X
28	1993	Handfield	JSCM	29	1	2	X		X				
29	1993	Giunipero & Brewer	JSCM	29	1	35	X	X	X				
30	1993	Watts & Hahn	JSCM	29	2	11	X						X
31	1993	Birou & Fawcett	JSCM	29	2	28					X		X
32	1993	Stuart	JSCM	29	4	22	X			X			X
33	1994	Lau & Lau	JOM	11	4	327			X				
34	1994	Stuart & Mueller	JSCM	30	1	14			X	X	X		X
35	1994	Sriram & Banerjee	JSCM	30	1	31		X		X			
36	1994	Wilson	JSCM	30	3	34	X		X				
37	1994	Graham, Daugherty & Dudley	JSCM	30	4	12			X				
38	1994	Mohr & Spekman	SMJ	15	2	135	X	X		X			
39	1995	Goodman, Fichman, Lerch & Snyder	AMJ	38	5	1310							
40	1995	Stuart & McCutcheon	JSCM	31	1	3	X			X			
41	1995	Richeson, Lackey & Starner	JSCM	31	1	21	X	X	X				
42	1995	Akacum & Dale	JSCM	31	1	38				X			X
43	1995	Hines	JSCM	31	2	18				X			
44	1995	Ellram	JSCM	31	2	36		X		X			
45	1995	Martin, Mitchell & Swaminathan	SMJ	16	8	589							
46	1996	Choi & Hartley	JOM	14	4	333		X	X	X	X		
47	1996	Hendrick, Carter & Siferd	JSCM	32	3	2	X	X	X				
48	1996	Marcussen	JSCM	32	3	20		X		X			
49	1996	Ellram & Edis	JSCM	32	4	20		X		X			
50	1996	Dyer	SMJ	17	4	271		X	X			X	
51	1996	Lassar & Kerr	SMJ	17	8	613	X			X			
52	1997	Nooteboom, Berger & Noorderhaven	AMJ	40	2	308		X		X			

APPENDIX A Continued

#	Year	Authors	Journal	Vol	Issue	Page	Buyer's Practices	Mutual Efforts	Performance-Based	Integration-Based	Capability-Based	Financial Perf.	Moderators
53	1997	Hartley, Zirger and Kamath	JOM	15	1	57		X			X		
54	1997	Forker	JOM	15	4	243	X				X		
55	1997	Smeltzer	JSCM	33	1	40		X					
56	1997	Krause	JSCM	33	2	12	X		X				
57	1997	Walton & Marucheck	JSCM	33	3	30		X	X				
58	1997	Burnes & New	JSCM	33	4	10				X			
59	1997	Dyer	SMJ	18	7	553		X					
60	1998	Koufteros, Vonderembse & Doll	JOM	16	1	21					X		
61	1998	Bozarth, Handfield & Das	JOM	16	2	241	X	X		X	X		X
62	1998	Krause, Handfield and Scannell	JOM	17	1	39	X	X			X		
63	1998	Moore	JSCM	34	1	24		X		X			
64	1998	Walton, Handfield and Melnyk	JSCM	34	2	2	X		X		X		
65	1998	Germain & Droge	JSCM	34	2	12	X	X				X	
66	1998	Tan, Kannan & Handfield	JSCM	34	3	2	X	X		X		X	
67	1998	Zaheer, McEvily & Perrone	JSCM	34	3	20		X	X	X			
68	1998	Meier, Humphreys & Williams	JSCM	34	4	39		X	X	X			
69	1998	Mudambi & Helper	SMJ	19	8	775		X					X
70	1998	Cool & Henderson	SMJ	19	10	909	X					X	
71	1999	Krause	JOM	17	2	205	X	X					X
72	1999	Carr & Pearson	JOM	17	5	497	X	X		X		X	
73	1999	Gilbert & Ballou	JOM	18	1	61							
74	1999	McGinnis & Vallopra	JSCM	35	3	4		X		X	X		X

APPENDIX A Continued

#	Year	Authors	Journal	Vol	Issue	Page	Buyer's Practices	Mutual Efforts	Performance-Based	Integration-Based	Capability-Based	Financial Perf.	Moderators
75	1999	Forker, Ruch & Hershauer	JSCM	35	3	40	X	X	X				
76	1999	Lorenzini & Lipparini	SMJ	20	4	317		X					
77	1999	Holm, Eriksson & Johanson	SMJ	20	5	467	X					X	
78	1999	Combs & Ketchen	SMJ	20	9	867				X			
79	2000	McIvor & McHugh	JSCM	36	3	12		X		X			
80	2000	Whipple & Frankel	JSCM	36	3	21		X		X			
81	2000	Hartley	JSCM	36	4	27		X					
82	2000	Kale, Singh & Perlmutter	SMJ	21	3	217		X		X			
83	2000	Dyer & Nobeoka	SMJ	21	3	345		X	X	X			
84	2000	Kaufman, Wood & Theyel	SMJ	21	6	649	X			X	X		
85	2001	Afuah	AMJ	44	6	1211					X		
86	2001	Frohlich & Westbrook	JOM	19	2	185							
87	2001	Stanley & Wisner	JOM	19	3	287			X	X			
88	2001	Dong, Carter & Dresner	JOM	19	4	471			X	X			
89	2001	Narasimhan & Das	JOM	19	5	593			X	X	X		
90	2001	Park, Hartley & Wilson	JOM	19	6	695		X			X		
91	2001	Deeter-Schmelz, Bizarri, Graham & Howdyshell	JSCM	37	1	4		X					
92	2001	Ramcharran	JSCM	37	1	11							
93	2001	Nellore	JSCM	37	1	27							
94	2001	Sanderson	JSCM	37	2	16	X						
95	2001	Lonsdale	JSCM	37	2	22	X	X					
96	2001	Narasimhan, Talluri & Mendez	JSCM	37	3	28			X		X		
97	2001	McGinnis & Vallopra	JSCM	37	3	48		X			X		
98	2001	Welling & Kamann	JSCM	37	4	28				X			X
99	2001	Takeishi	SMJ	22	5	403		X			X		

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#	Year	Authors	Journal	Vol	Issue	Page	Buyer's Practices	Mutual Efforts	Performance-Based	Integration-Based	Capability-Based	Financial Perf.	Moderators
100	2001	Zaheer & Zaheer	SMJ	22	9	859							
101	2002	Hult, Ketchen & Nichols	AMJ	45	3	577							
102	2002	Primo & Admundson	JOM	20	1	33		X	X		X		
103	2002	Narasimhan & Kim	JOM	20	3	303				X		X	
104	2002	Hill & Scudder	JOM	20	4	375		X		X			
105	2002	Frohlich & Westbrook	JOM	20	6	729			X	X		X	
106	2002	Heikkila	JOM	20	6	747		X					
107	2002	Ellram, Zsidisin, Siferd & Stanly	JSCM	38	1	4						X	
108	2002	Tan	JSCM	38	1	42	X	X	X				
109	2002	Parsons	JSCM	38	2	4		X		X			
110	2002	Krause & Scannel	JSCM	38	2	13	X						
111	2002	Gelderman & Van Weele	JSCM	38	2	30							X
112	2002	Park & Hartley	JSCM	38	2	46			X				
113	2002	Halley & Nollet	JSCM	38	3	39							
114	2002	Elmuti	JSCM	38	3	49		X	X			X	
115	2002	Kannan & Tan	JSCM	38	4	11	X	X	X			X	
116	2002	Poppo & Zenger	SMJ	23	8	707	X						
117	2002	Leiblein, Reuer & Dalsace	SMJ	23	9	817	X				X		X
118	2003	Subramani & Venkatraman	AMJ	46	1	46		X					
119	2003	Rosenweig, Roth & Dean	JOM	21	4	437				X		X	
120	2003	Vickery, Jayaram, Dröge & Calantone	JOM	21	5	523		X		X		X	
121	2003	McHugh, Humphreys & McIvor	JSCM	39	2	15				X			

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#	Year	Authors	Journal	Vol	Issue	Page	Buyer's Practices	Mutual Efforts	Performance-Based	Integration-Based	Capability-Based	Financial Perf.	Moderators
122	2003	Sharland, Eltantawy & Giunepero	JSCM	39	3	4	X	X		X			
123	2003	Zsidisin & Ellram	JSCM	39	3	15							
124	2003	Preis	JSCM	39	3	30							
125	2003	Kotabe, Martin & Domoto	SMJ	24	4	293		X		X			
126	2003	Nicholls-Nixon & Woo	SMJ	24	7	651					X		
127	2003	Leiblein & Miller	SMJ	24	9	839		X					
128	2003	Scheer, Kumar & Steenkamp	SMJ	46	3	303		X					
129	2004	Johnston, McCutcheon, Stuat & Kerwood	JOM	22	1	23		X	X	X			
130	2004	Prahinski & Benton	JOM	22	1	39		X	X	X			
131	2004	Chen, Paulraj & Lado	JOM	22	5	505		X	X			X	
132	2004	Droge, Jayaram & Vickery	JOM	22	6	557				X		X	
133	2004	McNally & Griffin	JSCM	40	1	4		X					X
134	2004	Claycomb & Frankwick	JSCM	40	1	18		X					X
135	2004	Knemeyer & Murphy	JSCM	40	1	35		X	X				
136	2004	Kwon & Suh	JSCM	40	2	4		X					
137	2004	Pullins, Reid & Plank	JSCM	40	3	40		X					
138	2004	Tracey	JSCM	40	4	37	X	X	X			X	
139	2004	Kim, Hoskisson & Wan	SMJ	25	7	613					X	X	
140	2005	Benton & Maloni	JOM	23	1	1	X	X		X			
141	2005	Christensen, Germain & Birou	JOM	23	5	470	X					X	
142	2005	Petersen, Handfield & Ragatz	JOM	23	3-4	371	X		X		X	X	
143	2005	Larson, Carr & Dhariwal	JSCM	41	1	18				X			

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#	Year	Authors	Journal	Vol	Issue	Page	Buyer's Practices	Mutual Efforts	Performance-Based	Integration-Based	Capability-Based	Financial Perf.	Moderators
144	2005	Sanders	JSCM	41	2	4				X	X	X	
145	2005	Petersen, Ragatz & Monczka	JSCM	41	2	14			X	X		X	
146	2005	Fredendall, Hopkins & Bhonsle	JSCM	41	2	26		X		X			
147	2005	Paulraj & Chen	JSCM	41	3	4	X	X	X	X			
148	2005	Wagner & Bukó	JSCM	41	4	17		X		X			
149	2005	Morris & Carter	JSCM	41	4	32			X	X			
150	2005	Hoetker	SMJ	26	1	75	X			X	X		
151	2005	Hult, Ketchen & Slater	SMJ	26	12	1173		X		X			