Strategic Management Journal
Strat. Mgmt. J., **20**: 867–888 (1999)

EXPLAINING INTERFIRM COOPERATION AND PERFORMANCE: TOWARD A RECONCILIATION OF PREDICTIONS FROM THE RESOURCE-BASED VIEW AND ORGANIZATIONAL ECONOMICS

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Interfirm cooperation and its performance implications are examined in the context of two widely cited theoretical approaches to organizations. Broadly speaking, the resource-based view suggests that firms seek to capitalize on and increase their capabilities and endowments, whereas organizational economics asserts that firms focus on minimizing the costs of organizing. Although these perspectives agree on managers' likely actions in many areas, their predictions diverge when interfirm cooperation is considered. We take a step toward reconciling these differences by positing that firms place resource-based concerns in front of considerations from organizational economics when deciding whether or not to engage in interfirm cooperation. We examined this prediction using data from 94 publicly held restaurant chains. The results support our integrated view, but also suggest that giving primacy to resource concerns detracts from the performance of some firms. We derive several implications of these findings in an effort to guide subsequent inquiry. Copyright © 1999 John Wiley & Sons, Ltd.

The capacity to bring multiple and often competing perspectives to bear on important organizational phenomena is one of the appealing qualities of strategic management research. Indeed, some consider strategic management's status as a pluralistic arena for examining complex problems to be its distinctive competence (Meyer, 1991). By encouraging scholars to look beyond singular views, the application and juxtaposition of multiple theoretical approaches can furnish rich descriptions of organizational actions, their antecedents, and their consequences (e.g., Allison, 1971; Gray and Wood, 1991).

The *resource-based view* (RBV) and *organizational economics* (OE) are two perspectives on organizations that have gained considerable currency in recent years (e.g., Conner and Prahalad, 1996; Dyer, 1996; Markides and Williamson, 1996; Roth and O'Donnell, 1996). The former argues, in essence, that top managers choose actions that best capitalize on a firm's unique endowments of resources and capabilities. In contrast, the latter posits that managers' central concern is organizing activities efficiently. Given their different emphases, the RBV and OE are generally treated as independent approaches that each focus on a distinctive set of research questions. In some research contexts, however, both have been applied to explain the same phenomenon. When the perspectives diverge, there is little extant information from which to resolve the contradictory explanations offered.

The purpose of this paper is to examine an important strategic decision—whether to manage new operations as wholly-owned entities or through interfirm cooperation—where predictions from the RBV and OE differ and to take a step toward reconciling these differences. Interfirm cooperation exists when two or more otherwise sovereign organizations act in concert to pursue mutual gain (Borys and Jemison, 1989). From

Key words: resource-based view, organizational economics, interfirm cooperation, performance
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CCC 0143–2095/99/090867–22 $17.50

Received 16 May 1997
Final revision received 10 March 1999

the RBV, interfirm cooperation permits firms to share resources and thereby overcome resource-based constraints to growth (e.g., Hamel, 1991). According to OE, cooperation is advisable only if it minimizes the cost of governing (i.e., monitoring and controlling) organizational activities (Hesterly, Liebeskind, and Zenger, 1990). For many firms, both views suggest the same course of action. As detailed in this paper, however, some resource-poor firms confront a dilemma in that the RBV points them toward cooperation whereas OE discourages cooperation. The resolution, we argue below, is that firms in need of certain resources will *have to* use interfirm cooperation even when cooperation is not prudent from an OE perspective. The effects of interfirm cooperation on organizational performance under different RBV and OE contingencies are also examined. Whereas the RBV places resources at the center of competitive advantage and therefore performance (Wernerfelt, 1984), OE suggests that strong performance depends on matching strategic decisions (e.g., whether or not to enact interfirm cooperation) to exchange conditions (Williamson, 1994). Through investigating the performance implications of interfirm cooperation under various RBV and OE considerations, we work toward integration of the two perspectives' disparate insights on the determinants of performance.

THEORETICAL BACKGROUND

Although the RBV and OE approaches to strategic management both grew from traditions within economics (Rumelt, Schendel, and Teece, 1994), they differ considerably in terms of the factors believed to influence organizational action and the performance consequences of such actions.

The resource-based view

Resources can be defined as 'those assets that are tied semi-permanently to the firm' (Wernerfelt, 1984: 173). Some authors make a distinction between resources and capabilities wherein capabilities refer to skills based in human competencies and resources refer to all other assets (e.g., Markides and Williamson, 1996). Following Barney (1991) and Peteraf (1993), we use the term resources broadly to refer to both resources and capabilities. Considerable research attention has been devoted to describing how resources might affect organizational action (e.g., Argyres, 1996; Bergh, 1995; Mahoney and Pandian, 1992) and to defining the specific processes through which resources affect performance (e.g., Barney, 1991; Peteraf, 1993; Wernerfelt, 1984).

Resources can influence a variety of the actions taken by top management. Because firms' decisions about how to manage new operations (interfirm cooperation vs. full ownership) is our focus, we limit our discussion to resources' influence on growth. First, resources can influence the direction of growth. Firms can more efficiently expand into activities that draw upon existing resources than into activities with no relation to current resources (Barney, 1988; Chatterjee and Wernerfelt, 1991). The notion that resources guide the direction of growth is reflected in multinational firms that expand first into markets that are culturally similar (Barkema, Bell, and Pennings, 1996), diversified firms that expand into resource-related businesses (Robins and Wiersema, 1995), and in manufacturers that vertically integrate to make inputs where their capabilities facilitate lower production costs (Argyres, 1996).

Resources can also influence the rate of growth. As Penrose (1959) explained, for example, the time required to hire and develop experienced and committed managers can act as a brake on growth. Once new managerial resources have been developed, however, they accelerate growth as the firm places its new managers into productive service. Subsequent to Penrose's work, other resources such as the development of organizational routines (Nelson and Winter, 1982; Shane, 1996) and access to capital (Martin and Justis, 1993) have been shown to have similar effects on organizational growth rates. Growth-minded firms thus are often compelled to identify ways to overcome resource scarcities (Mahoney and Pandian, 1992). One common solution is to engage in interfirm cooperation in order to grow with the aid of a partner's resources (Erramilli and Rao, 1990; Ingham and Thompson, 1994). Indeed, because firms can often perform activities together that neither could perform alone, resource sharing has become a primary explanation for interfirm cooperation (Borys and Jemison, 1989; Hamel, 1991).

Regarding performance, resource-based differ-

ences among firms can help explain performance differences because the outputs that can efficiently emerge from any unique configuration of resources are themselves unique. In other words, resource differences among firms drive product/service differences. Because buyers often favor the outputs of some resource configurations over others, performance differences emerge (Wernerfelt, 1984). The sustainability of these differences depends on the difficulty competitors have in accessing similar resources (Barney, 1991; Dierickx and Cool, 1989).

To be a source of sustained above-average performance, resources must meet three criteria. They must be: (1) valuable, meaning buyers are willing to purchase the resources' outputs at prices significantly above their costs; (2) rare, so that buyers cannot turn to competitors with the same or substitute resources; and (3) imperfectly imitable, meaning it is difficult for competitors to either imitate or purchase the resources (Barney, 1991; Peteraf, 1993). Further, the ability of a resource to meet these criteria depends on industry characteristics that affect a resource's value (Amit and Schoemaker, 1993). Brand name reputation, for example, may be more valuable in experiential service industries than in industries where quality can be determined prior to purchase (Nayyar, 1990). Resources that are rare, difficult to imitate, and create value in a given industry are labeled 'strategic resources' (Chi, 1994).

Organizational economics

Whereas resource-based research focuses on the implications of resources for organizational action and performance, OE's central concern is identifying actions that minimize the costs of governance which, in turn, maximize performance. Overall, OE offers a means to explain the way economic activity is organized (Barney and Ouchi, 1986). From the view of OE, the various intra- and interfirm arrangements observed in contemporary economies represent alternative ways of organizing the exchange of goods and services in the context of self-interested behavior, diverging goals, and imperfect information (Hesterly *et al.*, 1990). Such arrangements offer a variety of incentive systems and authority relationships that are not available to participants in simple market transactions (Williamson, 1975). Any given arrangement can thus be viewed as an attempt to minimize the cost of economic exchange by aligning authority relationships and incentives to the unique conditions surrounding the exchange.

The important conditions that affect an exchange are perhaps best described by the two theories most central to the OE paradigm: transaction costs and agency theory. The former focuses on the characteristics of an exchange that encourage managers to increase firm boundaries (i.e., full ownership), share with others (i.e., interfirm cooperation), or exchange in markets.[1] Among the exchange conditions initially identified by Williamson (1975), asset specificity is perhaps the most robust empirically (Williamson, 1994). Specific assets, in contrast to general purpose assets, are costly to redeploy to alternative uses (Williamson, 1991). Asset specificity generally encourages enlargement of a firm's boundaries because, if the firm invests in specific assets in the context of a cooperative arrangement, it has little recourse if a partner attempts to alter the terms of their agreement *post hoc* (Anderson and Coughlan, 1987; Monteverde and Teece, 1982). If such opportunism arises, the firm faces an unpleasant choice between continuing to work with its recalcitrant partner or forgoing the expected value of its specific assets.

Under certain conditions, however, asset specificity encourages interfirm cooperation (Williamson, 1983). When *both* firms in a cooperative agreement must invest in specific assets, the assets form a reciprocal dependency that reduces each partner's incentive to engage in opportunism, thus reducing the costs of interfirm cooperation (Dyer, 1996; Klein and Murphy,

[1] We draw exclusively from Williamson's version of transaction cost theory, which has, over time, come to rely heavily on asset specificity to explain organizational form (Williamson, 1994). We acknowledge, however, that other researchers conceive transaction costs more broadly. According to this broader view, anything that affects the short- or long-run costs of conducting market exchange can be considered a 'transaction cost' (e.g., Coase, 1988; North, 1990). Following this logic, constructs developed in the resource-based literature can perhaps be considered 'transaction costs' because these constructs affect the choice of organizational form. However, this broader view of transaction costs has yet to receive the same theoretical development that has been given to Williamson's narrower approach (Coase, 1988). Further, Williamson's version of transaction cost theory is more accessible to practitioners and other noneconomists and therefore it is the most commonly used statement of transaction cost found in strategic management research (Ghoshal and Moran, 1996). For these reasons, we rely on Williamson's 'narrow' version of transaction cost theory in this study.

1988; Teece, 1987). Hence, whereas unilateral investments in specific assets should lead to full ownership, mutual investments can encourage cooperation.

A second OE perspective, positive agency theory,[2] focuses on exchanges wherein one party, the principal, delegates responsibility to another, the agent (Eisenhardt, 1989; Jensen and Meckling, 1976). Unless induced to behave otherwise, self-interested agents are expected to pursue their own goals, not those of principals. As a result, the firm (as principal) must spend resources monitoring and controlling the behavior of its agents (e.g., employees, managers, cooperative partners). The costs of such monitoring varies with the ease with which information about agents' job performance is available and can be effectively evaluated (Eisenhardt, 1989). In situations where the costs of direct monitoring are high, principals often substitute incentives that redirect agents' goals toward principals' rather than attempting to oversee agents' activities directly (Eisenhardt, 1989). Forcing agents to take an equity position in the operations under their control is a common way to realign agents' goals (Phan and Hill, 1995). Interfirm cooperation offers this type of incentive because cooperative partners' rewards are largely dependent upon their own performance outcomes (e.g., Shane, 1996).

Although interfirm cooperation can be used to reduce the need for costly direct monitoring by the firm (Bradach, 1997), it can create a new set of potential agency problems. Specifically, after an interfirm cooperative agreement has been reached, both parties may possess incentives to 'shirk' by reducing their inputs at the expense of their cooperative partner. As in the case of transaction costs, the solution to this problem is that each party must make binding and credible commitments to the other. In the context of franchising, for example, franchisees (i.e., agents) make highly specific investments in their outlets and franchisors (i.e., principals) invest heavily in advertising (Williamson, 1983). Consequently, staying fully engaged in this cooperative venture offers each partner the highest potential for maximizing profits.

The exchange conditions described in OE research are generally not associated directly with performance (Williamson, 1994). Rather, these variables (e.g., asset specificity) only affect performance *after* organizational arrangements have been selected to monitor and control the behavior of organizational participants. Superior performance is expected when, given the conditions of exchange, organizational arrangements are selected that minimize the costs of governing participants. In contrast, competitors that ignore exchange conditions when choosing among alternative organizational arrangements should experience relatively higher governance costs and therefore lower performance (Hill and Snell, 1988; Phan and Hill, 1995). Thus, the relation between OE exchange conditions and performance is contingent upon the selection of organizational arrangements that minimize potential opportunism and align the goals of participants with those of the firm (Hill, Hitt, and Hoskisson, 1992; Mahoney, 1992).

In sum, the RBV and OE are widely cited perspectives that inform questions of interfirm cooperation and cooperation's performance consequences. The RBV is focused on the effects of resource endowments on managerial action and performance. When facing resource limitations, managers are attracted to cooperative arrangements designed to overcome such constraints. OE theories, in contrast, concentrate on the costs of controlling any organized effort. When the use of interfirm cooperation is directed toward the minimization of these costs, good performance should result.

Relating the resource-based view and organizational economics

Broadly speaking, two patterns can be seen in the literature that help define how the RBV and OE are related. First, the RBV and OE can be portrayed as *independent* explanations in which one perspective is used to explain a phenomenon with little consideration of the other. For example, much of the research on vertical integration and

[2] There are two streams of agency literature. The principal–agent stream is found primarily in the economics literature and uses mathematical models to demonstrate how optimal employment contracts can be designed under various sets of assumptions. This branch is generally not considered compatible with strategic management (Rumelt, Schendel, and Teece, 1994). The positivist branch, however, seeks to identify real-world governance problems and to understand the mechanisms firms use to solve them (Eisenhardt, 1989; Mahoney, 1992).

international entry mode is grounded in OE (e.g., Anderson and Coughlan, 1987; Monteverde and Teece, 1982; see Argyres, 1996 for a recent exception), whereas the study of the evolution of competitive advantage is usually grounded in the RBV (e.g., Barnett, Greve, and Park, 1994; Levinthal and Myatt, 1994). The independent view may be due to the RBV's emphasis on identifying which resources require enhancements; OE focuses on how to manage those resources once identified (Wernerfelt, 1989). A second view is that the RBV and OE are *complementary*, each offering unique insights that generally point managers in similar directions. The complementary view is, in part, grounded in the recognition that specific assets share an important quality with strategic resources—both are difficult to trade or imitate (Chi, 1994; Peteraf, 1993). This commonality explains why high performance among firms with certain diversification postures can be explained as a product of efficient organizational governance (Hill *et al.*, 1992; Teece, 1982) or the exploitation of strategic resources in new markets (Chatterjee and Wernerfelt, 1991; Markides and Williamson, 1996; Robins and Wiersema, 1995). The complementary view is also reflected in Gray and Wood's (1991) suggestion that neither resource nor economics-based perspectives adequately explain collaboration but rather that both perspectives are needed.

In addition to the independent and complementary views, the relationship between the RBV and OE can be *conflictive*. For example, Conner and Prahalad (1996) suggest that, from the RBV, housing an activity within an organization's hierarchy may be preferred over market transactions even when managers confront no fear of opportunism, which is the driving force toward ownership under OE. We submit that the decision whether or not to engage in interfirm cooperation is one such instance wherein prescriptions from the RBV and OE can conflict. Specifically, managers confront a dilemma when resource constraints point managers toward interfirm cooperation in situations where cooperation is not an efficient response to exchange conditions. Further, firms that use interfirm cooperation according to the predictions of the RBV may perform quite differently from those whose use of interfirm cooperation is best explained by OE. Our investigation offers an initial look at this quandary.

HYPOTHESES

Before hypotheses can be stated, it is important to identify and describe the industry under investigation. As noted above, the strategic value of a resource can be industry-specific (Amit and Schoemaker, 1993). Thus, the choice of which resources to investigate must be informed by knowledge about the industry. Furthermore, the way a specific form of interfirm cooperation is implemented varies among industries (e.g., Ingham and Thomas, 1994). Such variance affects the efficacy of a given form to minimize governance costs in the presence of an OE variable (Williamson, 1991). Consequently, it is important to view RBV and OE hypotheses in relation to the industry under investigation. Service industries appear to be under-represented in the literature relative to their importance; thus we examined restaurant chains. The largest 100 chains operate over 110,000 outlets in the United States alone (Ritzer, 1993); when to use interfirm cooperation, if at all, in managing these vast empires is a key question for chains' top managers (Shook and Shook, 1993).

Given the variety of resource and exchange condition variables that have been studied previously, any single investigation is unlikely to be exhaustive. Hence, the focus here is on three resources and three exchange conditions that are frequently cited as important both (1) within RBV or OE research, and (2) by research on restaurant chains.

The influence of resources on interfirm cooperation

Interfirm cooperation makes fewer resource demands than full ownership because individual firms do not have to supply all resources. If a firm possesses some but not all needed resources, a common response is to combine resources with an external organization using a cooperative arrangement (Erramilli and Rao, 1990; Teece, 1987). For the resource-constrained firm, the primary advantage of this tactic is that markets can be entered more quickly than if full ownership is used (Oviatt and McDougall, 1994). This is a critical concern in many contexts, including those where windows of opportunity are short or there are significant first mover advantages (Wernerfelt and Karnani, 1987). In this study, two strategic

resources, brand name reputation and top management experience, and one important nonstrategic resource, slack capital, are examined.

Brand name reputation is critical in the restaurant industry because it is a key determinant of whether or not potential customers patronize an establishment. Indeed, because restaurants offer an experiential good (cf. Nayyar, 1990), customers often make first-time purchases based on brand name reputation (Luxenberg, 1985; Shook and Shook, 1993). Restaurant chains build reputations by establishing multiple outlets within a region, thereby creating visibility as well as economies of scale in both advertising and purchasing. Because outlets can be built more quickly using a network of cooperative partners (Martin and Justis, 1993; Shane, 1996), interfirm cooperation offers a viable route for rapidly building a brand name. Thus, chains with unknown brand names should engage in more interfirm cooperation than those with established brand names.[3]

An experienced and knowledgeable top management team (TMT) can also be a strategic resource (Castanias and Helfat, 1991). Because the restaurant industry is relatively stable, executives with knowledge of operational practices and the idiosyncratic characteristics of a specific restaurant concept are best suited to build and maintain the consistent service standards and cost controls that offer a foundation for long-term success (Justis and Judd, 1989; Shook and Shook, 1993). For firms lacking a well-seasoned TMT, cooperation may be attractive because partners can furnish (1) skilled local managers that require minimal supervision, (2) a pool of expertise for top managers to draw upon, and (3) increased market penetration, which can improve the firm's ability to attract new managerial talent (Bradach, 1997; Shane, 1996).

A third variable, slack capital, is generally not considered to be a strategic resource (cf. Barney, 1991). In certain circumstances, however, slack capital can be rare (e.g., Martin and Justis, 1993), which is one important quality of a strategic resource (Barney, 1991). Further, the rarity of capital has been shown to affect the choice of interfirm cooperation. Scarcity of slack capital increases the use of both joint ventures (Ingham and Thompson, 1994) and franchising (Martin and Justis, 1993)—the two central forms of interfirm cooperation in the restaurant industry. The reason the use of interfirm cooperation is higher among capital scarce firms is because suppliers of capital (e.g., banks and stockholders) confront an adverse selection problem when choosing among alternative investment opportunities. Because passive investors must act on the basis of publicly available information, they cannot know *a priori* which firms have (1) offered full disclosure of information, or (2) will continue to act in investors' best interest over the long term (Martin and Justis, 1993). Consequently, the price of capital is determined by investors' expectation concerning the *average* firm's risk level, causing low-risk firms to 'select out' of the market (Stiglitz and Weiss, 1981). Cooperative partners can often supply lower-cost capital because (1) they are not exposed to the same agency costs that result from a separation of ownership and control (cf. Jensen and Meckling, 1976) and (2) they possess private information concerning their managerial abilities that is unavailable to passive investors (Shane, 1996). Thus, we expect scarcities of slack capital to be associated with greater use of interfirm cooperation among restaurants.

Overall, from the RBV, the sufficiency of firms' existing resource endowments is an important influence on the use of interfirm cooperation. Accordingly, we predict that, among restaurant chains, resources and interfirm cooperation will be inversely related. Specifically:

Hypothesis 1a: Brand name reputation and interfirm cooperation will be negatively related.

Hypothesis 1b: TMT experience and interfirm cooperation will be negatively related.

Hypothesis 1c: Slack capital and interfirm cooperation will be negatively related.

[3] One could construct a similar argument using OE; brand name is a specific asset that must be protected from potential opportunism through company ownership (e.g., Michael, 1998). Although we acknowledge that brand name can reasonably be examined using either perspective, firms in the restaurant industry have several tools to reduce potential opportunism (e.g., denying partner's expansion requests—Bradach, 1997). These mechanisms do not necessitate company ownership. Thus, we examine brand name in this study from the RBV.

The influence of exchange conditions on interfirm cooperation

According to OE, the decision whether or not to use interfirm cooperation rests on the firm's ability to monitor and motivate cooperative partners given extant exchange conditions. Asset specificity is a key exchange condition in the context of interfirm cooperation because such investments expose one party in a cooperative agreement to the potential for costly opportunistic behavior by the other. In the restaurant industry, cooperative partners could supply low-quality inputs and, because of the transient nature of the industry, pass much of the cost of customer dissatisfaction along to other outlets in the chain (Brickley and Dark, 1987). Likewise, firm managers could reduce efforts to promote and upgrade the chain, leaving cooperative partners with lower revenues (Scott, 1995).

One solution to these problems can be found in the binding and credible commitments that are available to reduce the potential for opportunism (Williamson, 1983). Firm managers make two important commitments to their cooperative partners that signal ongoing commitment. First, the presence of company-owned outlets signals cooperative partners that the firm is committed to promoting and upgrading the chain (Minkler, 1992). Second, regardless of the form of the cooperative arrangement (i.e., franchise, joint venture), a significant portion of the firm's revenues are contingent upon sales at outlets owned by cooperative partners (Scott, 1995). The value of these revenues depends on firm managers' ongoing investment in chain-wide enhancements (e.g., advertising, new product development). In exchange for these commitments, firm managers expect that their cooperative partners will also make significant and credible commitments. Cooperative partners generally build, or help build, restaurants for a chain. If assets required to operate these new outlets (e.g., physical plant, kitchen equipment) cannot be easily transformed for use in another type of restaurant or another business (i.e., the assets are highly specific), then cooperative partners must continue to cooperate with the firm in order to recover their investment. Thus, investments in *outlet-level* specific assets tie cooperative partners to the chain, making interfirm cooperation attractive to the chain (Klein and Murphy, 1988).

Another important exchange condition is the type of knowledge that must be transferred between principal and agent. Knowledge can be categorized as *general* knowledge that is easy to transfer to agents or *specific* knowledge that is costly to transfer (Jensen and Meckling, 1995). Specific knowledge can become embedded in the operational systems of restaurant chains as they evolve (Darr, Argote, and Epple, 1995). Once created, specific knowledge can help reduce costs and improve service, thus becoming a source of competitive advantage (Collis, 1994). However, specific knowledge is often tacit (Polanyi, 1962) or complex (Shane, 1998) and therefore costly to transfer to agents (Jensen and Meckling, 1995); it is best learned through experience and practice rather than through explanation (Kogut and Zander, 1992). Consequently, specific knowledge flows more easily within firms than between them (Darr *et al.*, 1995). Thus, among retail operations such as restaurants, company ownership is preferred when extensive training and support are needed to facilitate transfer of specific knowledge (Lafontaine, 1992; Scott, 1995).

A third variable, the geographic dispersion of operations, affects the costs of organizing in many service industries where operations must be located in close proximity to consumers (Carman and Langeard, 1980). According to agency theory, constraints to the free flow of information increase the cost of monitoring managers' behavior (Eisenhardt, 1989; Roth and O'Donnell, 1996). Within restaurant chains, outlet-level managers are generally monitored by district and regional managers with the aid of the chain's information system (Bradach, 1997). As geographic dispersion increases, the firm must hire additional district and regional managers to visit and monitor outlet-level managers. One way to minimize this cost is to delegate this responsibility to cooperative partners who are closer to the outlets (Brickley and Dark, 1987; Rubin, 1990). Thus, the attractiveness of interfirm cooperation increases as a chain disperses geographically.

In sum, we predict that, among restaurant chains, certain exchange conditions will be positively related to the use of interfirm cooperation whereas other conditions discourage its use. Specifically, (1) outlet-level asset specificity is an important form of credible commitment made by cooperative partners to facilitate cooperation,

(2) transferring specific knowledge to agents entails costs that discourage cooperation, and (3) geographic dispersion renders interfirm cooperation attractive by raising the cost of monitoring fully-owned operations. Stated formally:

Hypothesis 2a: Outlet-level asset specificity and interfirm cooperation will be positively related.

Hypothesis 2b: Specific knowledge and interfirm cooperation will be negatively related.

Hypothesis 2c: Geographic dispersion and interfirm cooperation will be positively related.

The joint influence of resources and exchange conditions on interfirm cooperation

If both sets of Hypotheses (Hypotheses 1a–c and 2a–c) accurately depict decisions regarding interfirm cooperation, a dilemma is created when a firm's resources and exchange conditions exert pressure in different directions. Specifically, what is a firm to do when resource constraints push managers toward interfirm cooperation even though cooperation may not be the efficient choice from an OE perspective? Our contention is that resources moderate firms' responses to exchange conditions. A firm without sufficient resources to exploit opportunities using full ownership has an incentive to use interfirm cooperation because cooperation permits the firm to leverage its resources in combination with other firms for long-term competitive advantage (Erramilli and Rao, 1990; Mahoney and Pandian, 1992)—*regardless* of whether or not cooperation may result in higher governance costs. Such firms' lack of resources simply will not allow them to rely heavily on full ownership even if it is preferred from an OE perspective. In essence, resources serve as a 'litmus test' for the consideration of exchange-related issues in the interfirm cooperation decision.

In contrast, when resources do not present a significant constraint, managers are empowered to use full ownership or interfirm cooperation, whichever is the most efficient form of governance. Thus, firms with exchange conditions that make cooperation costly (labeled 'unfavorable' in the hypothesis below) and ample resources will rely on full ownership more heavily than will firms facing other resource/exchange combinations. Interfirm cooperation will be prevalent among firms with favorable exchange conditions and firms confronting resource scarcities. Stated formally, we expect the following:

Hypothesis 3: The combination of high resource levels and unfavorable exchange conditions (low outlet-level asset specificity and geographic dispersion, and high specific knowledge) will be negatively related to interfirm cooperation. Other combinations (low resource levels with any exchange conditions and high resource levels with favorable exchange conditions) will be positively related to interfirm cooperation.

This hypothesis is depicted visually in Figure 1.

Determinants of firm performance

Strategic resources evolve along different and unique trajectories (Barnett *et al.*, 1994) and these differences lead to important product differences and/or differences in production costs (Argyres, 1996; Barney, 1991). When resources enable a firm to establish either a lower cost structure or demand a price premium for its products or services, then the opportunity for superior profits exists (Porter, 1980). Furthermore, when the advantage afforded by these resources is difficult for competitors to imitate or purchase, superior profits are sustainable (Barney, 1991; Peteraf, 1993). Thus, from the RBV, the link between strategic resources and performance is direct. Indeed, Rumelt (1991) provided evidence that differences in the configuration of strategic resources better predict performance differences than do industry or market characteristics.

The two strategic resources examined here—brand name reputation and top management experience—are purportedly important to restaurant chain success (Shook and Shook, 1993). Brand name reputation is among the most critical factors influencing long-term success in the restaurant industry because it adds perceived value to a chain's service and is difficult for competitors to imitate (Barney, 1991; Itami, 1987). With respect to top management experience, executives with deep roots in the industry and firm often develop a unique base of knowledge that enables them to uphold the consistent standards necessary

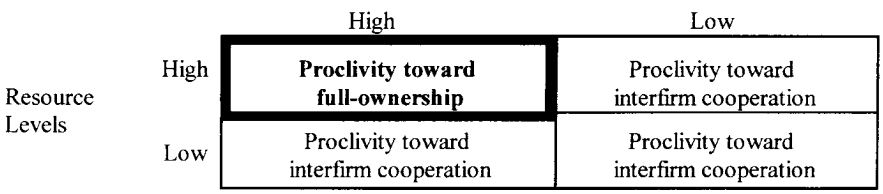

Figure 1. Hypothesized interaction between resources and exchange conditions.

for good performance (Justis and Judd, 1989; Luxenberg, 1985). Regarding slack capital, the third resource examined in this study, there is no extant logic linking nonstrategic resources with performance, thus no relevant hypothesis is offered here. In sum, we predict that, among restaurant chains, strategic resources and performance will be positively related. Specifically:

Hypothesis 4a: Brand name reputation and performance will be positively related.

Hypothesis 4b: Top management team experience and performance will be positively related.

Whereas the RBV ties resources directly to performance, the OE literature asserts a contingency relationship between exchange conditions, interfirm cooperation, and performance (Hill and Snell, 1988; Williamson, 1994). After analyzing their exchange conditions, managers are expected to select an organizational form that minimizes the governance costs associated with conducting the organization's activities. If managers choose wisely, governance costs are minimized and profits are maximized (e.g., Dyer, 1996; Hill *et al.*, 1992). Above, we predicted that the three exchange conditions examined here affect the use of interfirm cooperation: outlet-level asset specificity offers firm managers a credible commitment thereby reducing the risk of opportunism, specific knowledge increases the cost of interfirm cooperation by accentuating communication difficulties, and geographic dispersion makes interfirm cooperation attractive by raising the cost of monitoring fully-owned operations. In essence, OE argues that firms will perform best by comparing their governance costs under full ownership and interfirm cooperation and selecting the least costly option. Chains that do so are expected to enjoy greater efficiency in motivating, monitoring, and evaluating operations; such administrative proficiency should be reflected in performance (Williamson, 1994). Following this logic, we expect:

Hypothesis 5: The interaction of exchange conditions and interfirm cooperation will be significantly related to firm performance. Specifically, (a) the combination of unfavorable exchange conditions (i.e., low outlet-level asset specificity and geographic dispersion, and high specific knowledge) and low interfirm cooperation, and (b) the combination of favorable exchange conditions (i.e., high outlet-level asset specificity and geographic dispersion, and low specific knowledge) and high interfirm cooperation will be positively related to performance.

This hypothesis is depicted visually in Figure 2.

METHOD

Sample and data sources

The hypotheses were tested across restaurant chains that were publicly held between 1992 and 1995. Firms that did not constitute a chain (at least four outlets—Hawes and Crittenden, 1984), were franchisees (e.g., of chains such as McDonald's or Wendy's), or whose food service was a component of a larger operation (e.g., hotels and casinos) were excluded. Using the *Compact Disclosure* data base, 94 firms were identified that surpassed these hurdles.

Archival data

Most measures were acquired from archival sources. Measures of one resource (slack capital),

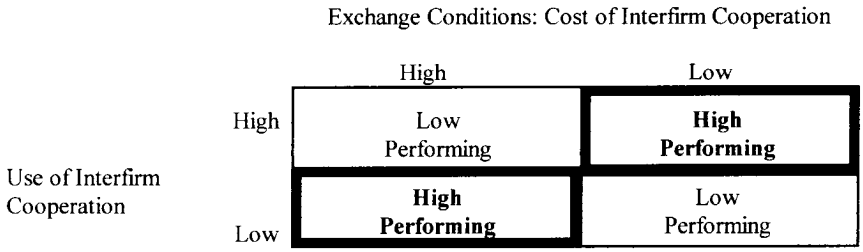

Figure 2. Hypothesized interaction between interfirm cooperation and exchange conditions.

performance, and a control variable (size) were obtained using *Compact Disclosure*. Data for one resource (TMT experience), one exchange condition (geographic dispersion), interfirm cooperation, and two control variables (age and growth) were obtained from annual reports, proxy statements, and 10-Ks. Although chains reported this information in a variety of formats, all information was reported. As others have found (e.g., Michel and Hambrick, 1992), coding was straightforward owing to the objective nature of the data.

Expert panel

No archival measures were available for two exchange conditions (outlet-level asset specificity and specific knowledge) and one resource measure (brand name reputation), thus these variables were assessed through an expert panel survey of hospitality management educators. In similar research contexts, expert opinions furnished by relevant academics have been shown to be an effective and valid measure of unobservable constructs (Chen, Farh, and MacMillan, 1993).

Following a series of pretests, 400 hospitality management professors were identified through the Council for Hotel, Restaurant, and Institutional Educators (CHRIE), the major professional association for hospitality educators. In each of 10 regions of the United States, 40 experts were asked to rate an average of 10 chains headquartered in their region. Respondents were asked to rate only those chains for which they felt confident making an expert judgment. The survey was constructed in 1994 and distributed following Dillman's (1978) total design method.[4]

There were 226 surveys returned. Forty-four respondents did not rate any chains because they did not feel qualified to make the requested judgments, leaving a usable response rate of 45.5 percent—higher than the response rate obtained in most strategic management research (Snow and Thomas, 1994). On average, raters were

[4] Because our resource and exchange condition measures needed to depict conditions in 1992, we faced an important trade-off. Expert panel respondents could be asked to furnish retrospective accounts of conditions 2 years earlier or we could adopt, and support, the assumption that the three variables assessed in the survey are moderately invariant over relatively short periods of time and ask for assessments of current conditions. The major concern with the use of retrospective data is whether or not informants are capable of accurately recalling some past event or condition. The use of retrospective data has a long history in strategic management research (e.g., Mintzberg, Raisinghani, and Theoret, 1976), but such data are often misleading and inaccurate (Golden, 1992). In our case, we feared that asking about 1992 would be a source of confusion in that experts would struggle to mentally isolate 1992 from the years immediately preceding and following; feedback received during the pretests confirmed our fear.

Golden's study and our own pretests results led us to examine the temporal stability of the focal variables. Specific knowledge and outlet-level asset specificity tend to be stable because they are defined by the very nature of a restaurant chain's daily operations and physical infrastructure respectively and firms rarely change their core infrastructure (cf. Gersick, 1991)—especially in the restaurant industry (Luxenberg, 1985; Shook and Shook, 1993). In contrast, it could be argued that the third variable, brand name reputation, can change in just a couple of years. This possibility was investigated by examining how the relationship between the expert panel measure of brand name reputation and an index of a related but distinct variable, consumer satisfaction, changed over the 2-year period. A customer satisfaction measure based on a random sample of over 2000 households' satisfaction ratings is published annually in *Restaurants and Institutions*. The ratings of between 70 and 80 restaurant chains (depending on the year) in that survey overlap our sample by 45 chains. The correlation between our measure of brand name reputation and the satisfaction index was significant in both years (0.42 in 1992 and 0.41 in 1994; both $p < 0.01$), but not significantly different across the years ($\Delta r = 0.01$; $p > 0.10$). Thus, there is at least indirect evidence that brand name reputation was stable across 1992–94. Overall, we believe the expert panel measures from 1994 to be realistic portrayals of conditions in 1992 and, importantly, to be superior to measures that could have been obtained through retrospective accounts.

knowledgeable about 5.4 chains. The average number of ratings for a chain was 9.3, with a standard deviation of 6.1 and an average interrater reliability of 0.81. Because late respondents' perceptions match closely with those of nonrespondents (Kanuk and Berenson, 1975), significant correlations between item scores and survey response time would indicate the presence of a nonresponse bias. We examined all such correlations; none were statistically significant.

Control variables

Several past studies use measures of age and size as proxies for resource availability (e.g., Carney and Gedajlovic, 1991; Lafontaine, 1992). Their logic, centered in the life cycle concept, is that resources tend to grow as firms mature. Because resources are measured directly in this study, the potential confounding effects of the life cycle needed to be controlled. Therefore, the organization's *age* and *total sales* in 1992 were used as control measures; the latter was not normally distributed, thus its natural log was used. A firm's growth rate is another variable that may affect the choice of organizational form (Shane, 1996). *Growth* was measured as the sum of new units added during 1992 and 1993 divided by the number of units that existed at the start of 1992.

Resource variables

Brand name reputation. Data on brand name reputation was culled through four items on the expert panel survey: Comparing this company to all other food service operations, (1) How well respected is this company? (anchored by 'Not respected' and 'Very respected'); (2) How good of a value is this company perceived to provide for the price? (Not good/Very good); (3) How strong is this company's reputation for consistent quality and service? (Not strong/Very strong); and (4) How strong is this company's brand name recognition in its service area? (Not strong/Very strong). Seven-point Likert scales were used. Each chain's brand name reputation was calculated by summing responses to the four questions and dividing by the number of expert raters. Thus, values could range from 4 (all raters gave the chain the lowest possible score, 1, on all four questions) to a high of 28 (all raters gave the chain the highest possible score, 7, on all four questions). This process was also used with the other variables assessed through the survey.

Top management team (TMT) experience. Although no consensus has been reached as to which executives to include when studying TMTs, one popular approach has been to include only 'inside directors'—executives with a seat on the board of directors (Bantel and Finkelstein, 1995). This approach has the advantage of providing a clear demarcation between top tier and second tier managers. Furthermore, directorships indicate membership in the dominant coalition and high organizational power (Bantel and Finkelstein, 1995). Therefore, to measure TMT experience, we compiled (1) the total *number of years of executive-level food service experience* and (2) the total *number of years in the firm* for all inside directors in each restaurant chain as of 1992.

Slack capital. We used slack measures previously used by Singh (1986) and Hambrick and D'Aveni (1988). Each chain's equity-to-debt ratio in 1992 was used to assess its amount of unused borrowing capacity, or *potential slack*. Firms with high equity-to-debt ratios can potentially borrow more funds to finance expansion efforts than can firms with low ratios. *Available slack* represents highly liquid, existing capital that is available for immediate investment. It was measured for 1992 as cash and marketable securities divided by the number of outlets in the chain.

Exchange conditions

Outlet-level asset specificity was assessed through four survey items: Comparing this company to all other food service operations, (1) How difficult would it be to use this company's kitchen equipment for another food service format? (Anchored by 'Not difficult' and 'Very difficult'); (2) How difficult would it be to use this company's dining room decor for another food service format? (Not difficult/Very difficult); (3) How difficult would it be to convert an average unit's building and grounds to another type of business? (Not difficult/Very difficult); and (4) How customized is the kitchen equipment for this company? (Not customized/Very customized). Seven-point Likert scales were used.

Specific knowledge was assessed through four survey items: Comparing this company to all other food service operations, (1) How long

would it take to train competent assistant managers? (Anchored by 'Not long' and 'Very long'); (2) How long would it take to train competent hourly employees? (Not long/Very long); (3) How difficult would it be to communicate job requirements to unit-level managers? (Not difficult/Very difficult); and (4) How difficult would it be to include all of the unit manager's job tasks in an operations manual? (Not difficult/Very difficult). Seven-point Likert scales were used.

Geographic dispersion. Two measures that reflect a chain's geographic dispersion and that have been studied extensively among retail chains (e.g., Carney and Gedajlovic, 1991; Lafontaine, 1992) were examined here: the *number of states* and *number of countries* with operations in 1992.

Interfirm cooperation

Most interfirm cooperation in the restaurant industry is structured as franchises or joint ventures.[5] Although franchises and joint ventures are quite different forms in many industries, the differences between them are rather small in the restaurant industry. A franchise exists when a cooperative partner supplies equity, management, and pays the firm a fee in exchange for use of the latter's trademark and operational standards (Justis and Judd, 1989). Joint ventures in this industry are structured similarly except that the firm takes a substantial (usually 50%) equity position in outlets managed by its cooperative partners.

Our measure of interfirm cooperation had to reflect the pattern of interfirm cooperation that chains used in response to resource and exchange conditions present at the beginning of the study period. Thus, *interfirm cooperation* was measured as the percent of growth accomplished through interfirm cooperation during 1992 and 1993. That is, we divided the number of new restaurants built with cooperative partners by the total added to the chain (cooperative ventures plus wholly-owned facilities) in those years. This measurement period was selected for three reasons. First, the interfirm cooperation measure begins in the same year as the resource and exchange condition variables because many chains can implement growth decisions (i.e., build restaurants) in less than a year (e.g., McDonald's can build a free-standing unit in 6 weeks). Second, a 2-year period was selected because it is consistent with strategic planning and implementation horizons discussed in many chains' annual reports and 10-Ks. Third, the 2-year measure is an improvement on studies that use the proportion of interfirm cooperation over the firm's entire life span (e.g., Carney and Gedajlovic, 1991) because that measure confounds 5, 10, or even 20-year-old changes in strategic direction by aggregating interfirm cooperation over extended periods of time.

Performance variables

Performance is a multidimensional construct; thus multiple, disparate measures should be examined (Venkatraman and Ramanujam, 1986). Accordingly, we measured performance from both a financial and a stock market perspective. In keeping with prior strategic management research (e.g., Hill *et al.*, 1992), *return on assets* (ROA) was used to measure financial performance. This is a measure of the efficiency of business operations (Hill *et al.*, 1992). Our market performance measure, *market-to-book value*, approximates the stock market's perception of the value of the firm's present and future income and growth potential (Montgomery, Thomas, and Kamath, 1984). Because market-to-book value measures performance at the corporate level, following the standards set by Rumelt (1974), only single and dominant chain firms (those with over 70% of revenues derived from a single chain) were included in this part of the analysis.[6] This measure was available for 77 of the 94 chains.

Based on comments by restaurant CEOs in firm's annual reports, we believed that the choice

[5] Five sample firms structured a small minority of their outlets as management contracts. Under these cooperative arrangements, an outside cooperative partner constructs and owns the outlet(s), which are then managed by the chain for a fee. Although management contracts constitute interfirm cooperation wherein two or more otherwise sovereign organizations act in concert to pursue mutual gain, from the perspective of chain managers, these outlets engender exchange conditions similar to company ownership. Consequently, we eliminated these outlets from the calculation of our interfirm cooperation measure. Doing so had an inconsequential effect on the results.

[6] Although Rumelt's standards were based on a firm's diversification into *different businesses*, they are used here to guide measurement at the chain level because, for a restaurant chain, ownership of different chains is operationally analogous to related diversification (Carman and Langeard, 1980).

of interfirm cooperation would impact performance quickly (e.g., '1993 revenues increased 27% to $123 million, primarily due to 19 new company-operated bakery cafes ... and net income jumped 29% to $6.8 million'—Au Bon Pain, *Annual Report*, 1993). Therefore, performance measures were averaged over 1994 and 1995, the 2 years immediately following the last year of our interfirm cooperation measure. The performance measures were averaged over 2 years to guard against any 1-year 'outlier' performance (cf. Thomas, Clark, and Gioia, 1993).

Data analysis

Confirmatory factor analysis

Construct validity of the three variables measured through the expert panel (outlet-level asset specificity, specific knowledge, and brand name reputation) was assessed through confirmatory factor analysis of the total set of ratings produced by the experts ($N = 874$). Three factors emerged with all items loading on their theoretically correct factor. Average loadings for variables on their theoretically correct factor was 0.81, whereas the average loading on other factors was 0.08. Reliability coefficients were 0.87, 0.86, and 0.85 for brand name reputation, specific knowledge, and outlet-level asset specificity respectively, surpassing Nunnally's (1978) standards for reliability in basic research. Thus, there was supporting evidence *vis-à-vis* construct validity.

One exchange condition variable (geographic dispersion) and two resource variables (slack capital and top management experience) had multiple archival measures. Confirmatory factor analysis also supported the validity of these measures with average loadings of 0.84 for items on their theoretically correct factor and 0.06 on other factors. The measures of each of the three variables were standardized and then summed to create unit-weighted scales.

Hypothesis testing

Hypotheses 1a–c and 2a–c were tested using regression analysis. Hypotheses 4a–b, which specified direct relationships between resources and performance, were also tested using regression. In testing Hypotheses 4a–b, we included interfirm cooperation as an additional control variable to ensure that resource effects on performance were direct and not mediated by interfirm cooperation.

The usual way to test for interactions among continuous variables (such as in Hypotheses 3 and 5) is with moderated regression (Aiken and West, 1991). However, Hypothesis 3 is unique in that it is an *a priori* ordinal interaction, where one independent variable (i.e., exchange conditions) affects the dependent variable (i.e., interfirm cooperation) at only one level of the other independent variable (i.e., resources). By analogy to the basic 2 × 2 factorial design in ANOVA, an *a priori* ordinal interaction exists when one cell is significantly different from the other three and the 'unique' cell has been specified *a priori* (e.g., when resource levels are high and exchange conditions render cooperation costly, chains are expected to use cooperation significantly less than under other resource/exchange condition combinations—see Figure 1). If moderated regression is used, main effects can mask the interaction even if the interaction (i.e., the unique cell) is the *only* important effect on the dependent variable (see Bobko, 1986, for an empirical demonstration). Instead, the appropriate analytical technique is a simple planned comparison of hypothesized differences (i.e., one cell vs. the other three).

Accordingly, after placing firms into the four cells portrayed in Figure 1 based on resource and exchange condition variable medians, we created two groups: those firms expected to prefer full ownership according to Hypothesis 3 (the top left cell of Figure 1) vs. those expected to prefer interfirm cooperation (all firms in the other three cells). Because variance explained by the control variables had to be removed first, ANCOVA was used to perform the planned comparison.

Hypothesis 5, in contrast to Hypothesis 3, is an *a priori disordinal* interaction in which one independent variable (i.e., interfirm cooperation) affects the dependent variable (i.e., performance) differently at different levels of the other independent variable (i.e., exchange conditions). Using the 2 × 2 factorial analogy again, two diagonal cells are expected to be different from the other two (see Figure 2). The luxury of direct planned comparison does not exist here because it cannot be known whether results are due to any one cell rather than the hypothesized two cells. Moderated regression was therefore used as an initial test of the hypothesis because it is the most powerful technique for detecting disordinal interactions among continuous data (Aiken and

West, 1991). Once moderated regression identified the presence of an interaction effect, firms were partitioned into subgroups based on median exchange condition and interfirm cooperation values and group means were inspected to see if the nature of the interaction was consistent with Hypothesis 5 as depicted in Figure 2.

RESULTS

Table 1 reports descriptive statistics and Pearson product–moment correlations among measures used in the study. Table 2 displays the results relevant to our initial predictions. Hypotheses 1a–c predicted that chains' levels of three resources would be inversely related to the use of interfirm cooperation. Our predictions were supported for brand name reputation (H1a: $\beta = -0.25$; $p < 0.05$) and slack capital (H1c: $\beta = -0.25$; $p < 0.05$) but not for top management experience (H1b: $\beta = -0.01$; n.s.). Hypotheses 2a–c predicted a direct relationship between exchange conditions and interfirm cooperation. All three sub-hypotheses were supported: outlet-level asset specificity (H2a: $\beta = 0.20$; $p < 0.05$) and geographic dispersion (H2c: $\beta = 0.39$; $p < 0.01$) were positively related to interfirm cooperation whereas specific knowledge (H2b: $\beta = -0.23$; $p < 0.05$) was negatively related.

As shown in Table 3, there was a significant resource–exchange condition interaction effect on interfirm cooperation ($F = 23.52$; $p < 0.001$). As predicted, firms that possessed high resource levels and faced exchange conditions that facilitate full ownership (i.e., low outlet-level asset specificity, high specific knowledge, and low geographic dispersion) used interfirm cooperation significantly less than other firms. Indeed, as shown in Table 4, firms in this situation used interfirm cooperation in an average of 5 percent of their new outlets whereas firms facing other resource and exchange condition contingencies on average used interfirm cooperation between seven to ten times more often. Together, the results in these tables offer support for Hypothesis 3.

Table 5 shows the results for Hypotheses 4a–b and 5. Brand name reputation was a significant predictor of ROA ($\beta = 0.21$; $p < 0.05$) but not market-to-book value ($\beta = 0.01$; n.s.), offering only partial support for Hypothesis 4a. No support was found for Hypothesis 4b; top management experience was not significantly related to either performance measure ($\beta = 0.11$; n.s., and $\beta = 0.10$; n.s., for ROA and market-to-book respectively).

Regarding Hypothesis 5, the second and fourth regression equations in Table 5 show that the interaction terms for both ROA ($\beta = 0.29$; $p < 0.01$) and market-to-book value ($\beta = 0.28$; $p < 0.05$) were significant. This offered initial support for our expectation that exchange conditions and interfirm cooperation interact to affect performance. The next step was to partition the firms into groups according to their median exchange condition and interfirm cooperation values and inspect the nature of the interaction. As shown in Table 6, group mean values revealed some deviations from the predictions of Hypothesis 5. When both performance variables are considered, the interaction appears to be largely a function of significantly lower performance among firms using interfirm cooperation when exchange conditions pointed toward full ownership (i.e., those in the top left cell of Table 6). In addition, when market-to-book value is considered, there was a positive performance effect for firms using interfirm cooperation when exchange conditions made this an appropriate choice (i.e., the top right cell). Finally, in contrast to our expectations, firms that made greater use of full ownership when exchange conditions facilitate interfirm cooperation performed as well as those who acted in accordance with their exchange conditions (i.e., bottom left cell vs. bottom right). Overall, there was mixed evidence regarding Hypothesis 5: an interaction effect between exchange conditions and interfirm cooperation on performance was found, but the nature of the interaction was only partially consistent with expectations.

DISCUSSION

The resource-based view and organizational economics have become regarded as valuable instruments for enhancing knowledge of interfirm cooperation, its antecedents, and its consequences. Given these perspectives' different emphases, they are generally treated as independent approaches—despite considerable evidence that complex relationships seldom can be fully understood when viewed through a single theoretical lens (e.g., Allison, 1971; Gray and Wood, 1991).

Table 1. Descriptive statistics[a]

	Mean	s.d.	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1) Interfirm Cooperation	0.33	0.37														
Performance Variables																
2) ROA	0.05	0.16	–0.26*													
3) Market-to-Book	2.24	2.07	0.06	0.34**												
Control Variables																
4) Age	25.12	16.53	0.07	0.13	–0.27*											
5) Total Sales[b]	1098.2	3980.42	–0.01	0.19	–0.06	–0.07										
6) Growth	41.58	86.55	–0.02	0.02	0.39*	–0.25*	–0.08									
Resource Variables																
7) Brand name	18.58	4.12	–0.34***	0.34***	0.01	0.00	0.09	0.00								
8) TMT Experience	35.17	24.23	–0.08	0.16	–0.01	0.31**	–0.17	–0.11	0.14							
9) TMT Tenure	34.06	30.49	–0.03	0.32**	–0.07	0.44***	0.19	–0.23*	0.13	0.72***						
10) Potential Slack	0.76	0.71	–0.16	0.19	0.31**	0.05	–0.25*	0.31**	0.28**	0.22*	0.03					
11) Available Slack	108.89	176.20	–0.24**	0.19	0.33**	–0.19	0.14	0.41***	0.18	–0.12	0.14	0.21*				
Exchange Condition Variables																
12) Asset Specifity	14.89	3.40	0.29**	0.11	0.25*	0.04	0.11	0.15	0.07	–0.02	0.01	–0.15	–0.11			
13) Specific Knowledge	14.22	3.89	–0.28**	–0.22**	–0.25*	–0.26**	–0.10	–0.06	0.20	–0.02	–0.16	0.13	0.09	–0.15		
14) Number of States	16.32	14.44	0.17	0.36***	0.01	0.12	0.53***	–0.21*	0.10	0.09	0.40***	–0.12	–0.13	0.10	–0.26**	
15) Number of Countries	4.44	11.76	0.17	0.25*	0.11	0.02	0.75***	–0.10	0.12	–0.02	0.30**	–0.13	0.02	0.17	–0.14	0.60***

[a]$N = 94$, except for market-to-book ($N = 77$)
[b]Total sales are in millions (000,000)
*$p<0.05$
**$p<0.01$
***$P<0.001$

Table 2. Effects of resources and exchange conditions on interfirm cooperation

	Resources		Exchange Conditions	
Age	0.09	0.82	0.05	0.43
Size	−0.05	0.43	−0.43**	3.12
Growth	0.10	0.86	−0.07	0.67
Brand name	−0.25*	2.39		
TMT Experience	−0.01	0.12		
Slack Capital	−0.25*	2.10		
Asset Specificity			0.20*	2.06
Specific Knowledge			−0.23*	2.23
Geographic Dispersion			0.39**	2.85
df	(6,87)		(6,87)	
R^2	0.16		0.24	
F	2.83*		4.42***	

$N = 94$
*$p<0.05$
**$p<0.01$
***$p<0.001$

Table 3. Planned comparison of firms expected to use full-ownership versus interfirm cooperation

	df	mean square	F
Model	4	0.71	6.33***
Age	1	0.09	0.78
Size	1	0.11	0.99
Growth	1	0.05	0.05
Group[a]	1	2.62	23.52***
Error	89	0.11	

[a]Group equals all firms with higher than median resources *and* lower than median exchange condition scores versus all other firms.
*$p<0.05$
**$p<0.01$
***$p<0.001$

Table 4. Average use of interfirm cooperation for each resource-exchange condition combination[a,b,c]

		Exchange Conditions: Cost of Interfirm Cooperation	
		High	Low
Resource Levels	High	**0.05*** **	0.44
		(0.11)	(0.40)
	Low	0.37	0.48
		(0.40)	(0.35)

[a]Significance level is from the planned comparison shown in Table 3.
[b]Hypothesized full-ownership group cell is bolded.
[c]Standard deviation of cell means in parentheses.
*$p<0.05$
**$p<0.01$
***$p<0.001$

This study offers new insight into how managers resolve the sometimes conflicting demands of resource and exchange conditions when deciding whether or not to use interfirm cooperation and establishes a link between the motivations for interfirm cooperation and performance outcomes.

The effects of resources and exchange conditions on interfirm cooperation

Consistent with the resource-based notion that firms cooperate in order to gain access to critical resources (Borys and Jemison, 1989; Hamel, 1991), restaurant chains with unknown brand names and little slack capital used more interfirm cooperation than did their resource-abundant counterparts (Hypotheses 1a, 1c). Experience among top managers, however, did not affect cooperation (Hypothesis 1b). Given that past research has established that top management characteristics are related to a variety of organizational phenomena (Bantel and Finkelstein, 1995), perhaps inquiry examining whether or not managerial characteristics other than experience play a role in decisions surrounding interfirm cooperation may be fruitful. For example, heterogeneous TMTs are thought to enact more innovative actions than homogeneous teams (Bantel and Jackson, 1989); perhaps the former are likely to devise new, creative forms of interfirm cooperation.

As others have found (e.g., Monteverde and Teece, 1982), managers in this sample also brought governance issues into focus when considering alternative ways to manage new outlets. Given our intention to study OE variables that are established in the literature, the support we found for Hypotheses 2a–c is perhaps not surprising. Thus, this study adds to the substantial base of empirical support for the OE approach (Rumelt *et al.*, 1994). Future inquiry should investigate a broader array of variables, however, because the number of factors that affect the cost of exchange is potentially large (Coase, 1988; North, 1990).

Although our findings demonstrate that the RBV and OE are each viable explanations for interfirm cooperation, they offer more informative insights when viewed in tandem. The finding

Table 5. Effects of resources and exchange conditions on performance

	ROA (N = 94)				*Market-to-Book* (N = 77)			
	Resources		Interfirm Coop. X Exchange Conditions		Resources		Interfirm Coop. X Exchange Conditions	
	β	t	β	t	β	t	β	t
Age	0.06	0.59	0.00	0.04	–0.26*	2.10	–0.36**	3.23
Size	0.32**	3.21	0.14	1.35	0.11	0.90	–0.09	0.78
Growth	0.11	1.17	0.03	0.38	0.36**	3.24	0.25*	2.47
Interfirm Coop.	–0.15	1.57	–0.43***	4.41	0.11	0.97	–0.07	0.64
Brand Name	0.21*	2.13			0.01	0.02		
TMT Experience	0.11	1.05			0.10	0.78		
Exchange Conditions			0.39***	3.64			0.39**	3.27
Interfirm Cooperation X Exchange Conditions			0.29**	3.27			0.28*	2.63
df	(6,87)		(6,87)		(6,70)		(6,70)	
R^2	0.28		0.39		0.21		0.37	
F	5.50***		9.08***		3.17**		6.75***	

*p<0.05
**p<0.01
***p<0.001

Table 6. Average performance for each exchange condition-interfirm cooperation combination.[a,b]

		Exchange Conditions: Cost of Interfirm Cooperation	
		High	Low
Use of Interfirm Cooperation	High	ROA = –0.07* M/B = 1.50*	**ROA = 7.3 M/B = 3.07***
	Low	**ROA = 7.4 M/B = 2.02**	ROA = 10.4 M/B = 2.21

*Duncan multiple range test. Significance indicates differences from the grand mean.
[b]Hypothesized high performance cells are bolded.
*p<0.05
**p<0.01
***p<0.001

of a significant interaction effect on interfirm cooperation, in support of Hypothesis 3, enhances knowledge about the link between resources and exchange conditions by demonstrating how managers resolve the dilemma created when these forces collide. Whereas resource-abundant chains used interfirm cooperation only when cooperation helped minimize their governance costs, low-resource firms often cooperated regardless of their exchange conditions, indicating that resources take primacy over exchange conditions when considering cooperation. One implication is that when the objective of research is to predict organizational form, the OE perspective should be applied cautiously in low-resource contexts such as start-up ventures, turnarounds, and initial foreign expansions (cf. Oviatt and McDougall, 1994).

Our results have implications for prior research that draws on one, but not both, of the perspectives examined here. We found a joint resource and exchange condition effect on interfirm cooperation. Thus, independently, the RBV and OE each tell only part of the story. If this study had investigated the effects of resources *or* exchange conditions, any significant results would have been of limited value because an important explanatory variable—i.e., the interaction—would have been left unexamined. To the extent that our results generalize to other samples and to related research questions, the results of prior research having a singular focus on one perspective or the other need to be considered cautiously. Future researchers need to recognize that when a study is driven by one of the perspectives, findings may be more robust if the other perspective is incorporated or, at a minimum, accounted for through the selection of control variables.

The effects of resources, exchange conditions and interfirm cooperation on performance

Consistent with the notion that resources lay at the center of competitive advantage, we found a

performance advantage for firms with well-respected brand names when ROA was considered (Hypothesis 4a). A respected brand name can convey competitive advantage because it reduces uncertainty for buyers, thus making it costly for competitors to lure buyers away (Itami, 1987). We can only speculate on why this advantage did not translate into stock market performance. Perhaps any brand name effect on stock market performance is offset by investors' preference for the potentially high growth latent in many not-yet-established brand names. The negative effect of age and the positive effect of growth on market-to-book value support this reasoning. One implication is that the importance of a particular strategic resource may vary, sometimes unpredictably, over time (Dierickx and Cool, 1989). Thus, managers may often be aiming at a moving target when they attempt to identify which strategic resources deserve nurturing.

No support was found for Hypothesis 4b; top management experience was not significantly related to either performance measure. Although industry observers consider top management to be vital to superior performance (e.g., Luxenberg, 1985; Shook and Shook, 1993), experience is apparently not alone sufficient. Future studies might benefit from considering a broader array of team characteristics such as composition (Priem, 1990) or reward structure (Boyd, 1994). The significant effect of size on ROA suggests that the potential role of economies of scale should be accounted for in such inquiry.

Consistent with Hypothesis 5, exchange conditions and chains' use of interfirm cooperation interacted to influence performance. The relationship was not as simple as predicted, however. For firms with appropriate exchange conditions, using interfirm cooperation to surmount resource limitations can be lucrative; such firms performed quite well. Thus, it is appropriate for a low-resource firm (e.g., a start-up) to use interfirm cooperation when exchange conditions permit. However, those low-resource firms that attempted to use interfirm cooperation when exchange conditions pointed toward full ownership were the worst performers in the study. This result suggests that whereas firms may give primacy to resource considerations when deciding whether or not to engage in interfirm cooperation (Hypothesis 3), they might be well advised not to. What our results do not address, however, is whether a low-resource firm that should, according to OE, be using full ownership can expect any long-term benefits from interfirm cooperation. Can these firms use interfirm cooperation to *eventually* build the resources necessary to revert to full ownership and hence improve profitability?

Preliminary evidence indicates that the answer may be yes; long-term benefits from using cooperation to build resources despite unfavorable exchange conditions appear possible. We investigated the possible effects of firms' exchange condition–interfirm cooperation posture (i.e., firms' categorization in Table 6) on firm performance for 1996 and 1997. For 1996, the pattern of mean performances echoed those found for 1994–95. However, whereas the performance differences were significant when 1996 market-to-book values were considered ($F = 3.12$; $p < 0.05$), ROA differences were not ($F = 0.18$; n.s.). By 1997, no significant performance differences could be identified ($F = 2.04$ for market-to-book and $F = 0.65$ for ROA , both n.s.). One reason performance differences may have deteriorated over time may be that low-resource firms had (1) used interfirm cooperation effectively to build a stronger resource base, (2) improved the alignment between their use of interfirm cooperation and exchange conditions, and thus (3) improved performance. This speculation is consistent with Shane's (1996) investigation, which found that franchising enhances survival among (presumably low-resource) start-ups. Our *post hoc* analysis is highly tentative, however. The deterioration of effects by 1997 could have been caused by actions unrelated to interfirm cooperation decisions made in 1992 and 1993. For example, in the intervening years, low-resource firms could have initiated cost-cutting programs or improved their strategic decision-making processes. Thus, additional research is needed to investigate the interplay of interfirm cooperation, resource levels, exchange conditions, and long-term performance before low-resource firms can be advised to engage in interfirm cooperation without regard to exchange conditions.

Our results were also informative for firms that faced few OE-based impediments to interfirm cooperation but chose instead to emphasize full ownership. In contrast with our expectations, these firms were as profitable as those that followed OE logic by emphasizing interfirm cooperation. The reason may rest in the nature

of the industry under investigation. The restaurant industry is relatively stable when compared to industries such as health care (Ketchen, Thomas, and Snow, 1993) and airlines (Chen and Hambrick, 1995). In dynamic settings, uncertainty and risk are great; thus the risk-sharing benefits of cooperative ventures are particularly valuable (Harrigan, 1985). Perhaps some restaurant chains are unable to take advantage of some of the benefits of interfirm cooperation that are prevalent in more dynamic industries. This might also help explain why full ownership remained popular even among those chains that relied heavily on interfirm cooperation. Thus, examining if industry dynamism plays a role in the links among exchange conditions, interfirm cooperation, and performance would be useful. Such research would help managers understand when alternative organizational arrangements with differing governance costs may nevertheless result in similar performance.

Limitations

The results of this study should be viewed in light of its limits. Because data were drawn from public firms in a single industry, the generalizability of our findings may be limited. Generalizations to dissimilar industries (e.g., dynamic ones) should be viewed with caution; future research is needed to determine if the relationships found here hold in such settings. The number and comprehensiveness of the variables selected to operationalize resources and exchange conditions are a second concern. Whereas a variety of variables have been introduced in the literature, this study focused on a limited set that had been strongly linked to managerial action and performance in prior research. Future research would benefit from consideration of additional resources and exchange conditions, as well as their interactions.

CONCLUSION

Understanding the antecedents and consequences of organizational actions is a central theme in strategic management research. The RBV and OE offer rich and powerful explanations for a diverse range of phenomena including diversification, vertical integration, and interfirm cooperation. Although they are usually thought of as independent or even competing perspectives, our results show that firms do not simply respond to the logic of only the RBV or OE, but rather react to contingencies identified by both. These responses have important implications for performance. Our findings should encourage future researchers to strive for a deeper understanding of how such forces combine to influence organizational action and performance.

ACKNOWLEDGEMENTS

We thank Don Bergh, Jim Chrisman, Kevin Mossholder, Tim Palmer, and two *SMJ* reviewers for their helpful comments on previous versions of this paper.

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