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Outsourcing and Performance in Entrepreneurial Firms: Contingent Relationships with Entrepreneurial Configurations*

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ABSTRACT

This article develops and examines an empirical typology of entrepreneurial firms, based on organizational and life cycle characteristics. Results indicate five entrepreneurial configurations representing the essential contingent features of age, size, innovation, and governance structure (Elders, Giants, Innovators, and Owners) and one configuration representing a mix of all features (Balanced). We found that (i) outsourcing affected financial performance in entrepreneurial firms and (ii) configurations moderated this relationship. Results support the use of salient contingent features of age, size, innovation, and governance structure to predict outsourcing effectiveness in the entrepreneurial configurations. That is, entrepreneurial firms that aligned their configurational characteristics with outsourcing tended to have greater gains in financial performance. From a resource dependency perspective, managing these alignments has important implications for entrepreneurial firm performance.

Subject Areas: Configurations, Contingency, Entrepreneurship, Entrepreneurial Typology, Life Cycle, Outsourcing, and Resource Dependency.

INTRODUCTION

In an environment of increasingly fluid industrial boundaries, the nature of firm competence has slowly evolved from the ability to utilize rather than own critical

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capabilities. In general, firms seek to supplement inherent internal inadequacies in resources and skills by adding or replacing these via relationships with other organizations. One widespread and growing option is the use of outsourcing. Broadly speaking, outsourcing is defined as having work performed by an outside or external organization, and represents the fundamental decision to reject the internalization of an activity (Gilley & Rasheed, 2000). When companies effectively anticipate and plan their outsourcing, they are in a better position to seize upon emerging strategic opportunities and hence stand to gain performance benefits (Raff, 2000). However, since such relationships create external dependencies (Pfeffer & Salancik, 1978), these dependencies need to be managed well to ensure positive firm outcomes.

Following prior research, we define the ideal-typical (Weber, 1947) entrepreneurial firm as innovative and risk seeking, owner controlled, younger, and smaller (Miller & Friesen, 1982; Dess, Lumpkin, & Covin, 1997). Because they typically battle with liabilities of newness and size, entrepreneurial firms usually operate in much more resource-constrained environments than do established firms, and generally lack sufficient slack resources to buffer against exogenous shock (Carter, 1990). That is, for the entrepreneurial firm to exploit opportunities, finding the proper organizational form to improve resource coordination and maximize value creation remains a paramount challenge (Alvarez & Barney, 2005, 2007). As such, matching the entrepreneurial firm's configuration of organizational characteristics with an outsourcing strategy can be of crucial importance to the firm's continued existence. In this article, we focus on various organizational configurations of entrepreneurial firms, and their abilities to profit from outsourcing, by effectively managing their dependencies on other organizations (Pfeffer & Salancik, 1978).

To achieve our objective, we develop a typology of entrepreneurial firm configurations and examine not only the general effects of outsourcing on entrepreneurial firm performance but, also, how different entrepreneurial configurations moderate the relationship between outsourcing and financial performance. Our article is organized as follows: We begin with four sections (configurational approach, typology development, outsourcing and performance, and configurations and performance) that describe the theoretical rationale for developing our hypotheses. We follow with a description of the methodology, analysis, and results, and conclude with a discussion and the implications of the study for academia and future practice.

THEORETICAL RATIONALE FOR A CONFIGURATIONAL APPROACH

Configuration theory traces its roots to the classic contingency theory argument (e.g., Woodward, 1958; Lawrence & Lorsch, 1967) that organizational performance rests on fit or congruencies between strategy, structure, environment, etc. Extending the classical view of contingencies or congruencies, configuration theorists (e.g., Meyer, Tsui, & Hinings, 1993) see organizations as gestalts of characteristics. These gestalts represent subtle multifaceted relationships among numerous organizational characteristics that are more complex than the two-attribute approach most often seen in contingency theory. The basic hypothesis (Miller &

Friesen, 1984) is that types of organizations, as identified by their configurations of attributes, out perform other types. A meta-analysis of 40 tests of the configuration–performance relationship supported this contention, finding that both empirically and theoretically derived configurations explained equal variance in organizational performance (Ketchen et al., 1997). Recent studies also show the configurational approach is useful in explaining outsourcing success (Lee, Miranda, & Kim, 2004), small business performance (Wiklund & Shepherd, 2005), and performance in entrepreneurial firms (Dess et al., 1997).

DEVELOPING A TYPOLOGY OF ENTREPRENEURIAL CONFIGURATIONS

The components of our typology are theoretically derived from prior research identifying the salient characteristics of the entrepreneurial firm (innovation and owner governance) (e.g., Miller & Friesen, 1983) and the basic organizational characteristics (age and size) identified by configurational approaches to life cycle theory (Baker & Cullen, 1993; Hanks, Watson, Jansen, & Chandler, 1993). Like Weber's (1947) ideal-typical bureaucracy, our attempt is to specify the essential characteristics of the entrepreneurial firm and then to identify empirically the unique configurations or types that emerge from these characteristics.

Age and Size

Due to their direct correspondence to the biological analogy, age and size are the two most common contextual variables used by life cycle theorists to identify stages of the organization life cycle (Miller & Friesen, 1983; Quinn & Cameron, 1983; Hanks et al., 1993). More importantly, the opportunities and challenges associated with different combinations of age and size are particularly relevant to the entrepreneurial firm. Large size, for example, is associated with structural inertia (Hannan & Freeman, 1984), which may inhibit the strategic agility of larger firms to respond to entrepreneurial opportunities. Similarly, older firms are saddled with institutionalized norms and habit (Tushman & Romanelli, 1985) that limit both the perceptions of and actions on entrepreneurial opportunities. In contrast, young and small firms are strategically nimble and are positioned to take advantage of entrepreneurial opportunities, but may also have to face challenges unique to this condition. Research and theory suggest young and even perhaps adolescent organizations have higher failure rates due to the liabilities of newness (Henderson, 1999), and smaller organizations are prone to failure (Ranger-Moore, 1997). However, prior research (Baker & Cullen, 1993) suggests that configurations may explain the apparent contradictions in the literature. Baker and Cullen's (1993) configurational approach found that different combinations of age and size could counterbalance expectations regarding the simply additive effects of age and size.

Innovation

Our third defining variable is innovation. Miller (1983, p. 771) described the entrepreneurial firm as "one that engages in product-market innovations, undertakes

somewhat risky ventures, and is first to come up with 'proactive' innovations, beating competitors to the punch." In addition, Bantel (1998) suggested that the extent of new product development and market entry are key components of potential configurations for entrepreneurial firms. Similarly, Merz and Sauber (1995) defined organization-level entrepreneurial orientation as a willingness to innovate and create new offering in a chosen product market.

However, in spite of being a core attribution of firm-level entrepreneurship, some evidence suggests that the benefits of product-market innovation may not be universal. Following Anderson and Tushman (1990), Bantel argues that aggressive new product development is most fruitful in less developed industries suggesting possible contingence. Similarly, for the entrepreneurial firm, there may also be levels of product market innovation that better fit different combinations of age and size. Thus, a central component of any entrepreneurial firm configuration is that different levels of product-market innovation may occur at different life cycle stages as represented by age and size.

Governance Structure

Our fourth defining variable is the governance structure of the entrepreneurial firm. A notable difference in comparison to established firms is that entrepreneurs tend to be owner-managers and often retain control in the form of ownership. Furthermore, ownership tends to vary at different life cycle stages, such that though entrepreneurs start with sole ownership, they gradually experience a decline in ownership with firm growth and aging. Therefore, though governance is a broad construct, in the entrepreneurial context, ownership is a salient feature that influences the growth, innovation, and performance of the firm. Indeed, a recent review of the literature suggests that the effects of governance structures on firm performance might be more pronounced for the entrepreneurial firm (Daily, McDougall, Covin, & Dalton, 2002). Within this governance structure of the entrepreneurial firm, control may be the key to effective innovations in different life cycle contexts (Daily et al., 2002). For example, in their study of small firm configurations, Merz and Sauber (1995) found that product-market innovation was related to managerial control. Regarding age, Markman, Balkin, and Schjoedt (2001) argue that sole ownership is not optimal for innovation in young firms because the owner attempting complex projects is more isolated from potential advisors. Similarly, Diether, Boerner, and Lanwehr, (2004) suggest that the entrepreneur's control has a nonlinear relationship with innovation and moderate levels of situational control are more productive. As such, given the salience of entrepreneurial ownership and control on firm performance at various life stages, we used the extent of the entrepreneur's ownership to complete our entrepreneurial configuration.

We take the essentialist approach (Weber, 1947; Porter, 1979; Miller, 1988) since we consider a few, central, and explicitly defined variables to create our entrepreneurial configurations. If the defining variables are meaningful, then, (i) not only should they combine to yield separate types, but (ii) they should also be the source of the differentiating feature among the derived configurational types. Therefore, we anticipate the typology to be characterized by the predominant and essential characteristics of our four defining variables of age, size, innovation, and

ownership. We expect each of the four variables to dominate, separately in each configuration. Hence, we hypothesize:

H1: The predominant characteristics of age, size, innovation, or ownership identify four entrepreneurial configurations.

OUTSOURCING AND PERFORMANCE IN ENTREPRENEURIAL FIRMS

Covin and Slevin (1991) argue that, when considering an organization-level model of entrepreneurship, firm performance is a key dependent variable. An entrepreneurial opportunity is a situation in which a person can create a new means-end framework for recombining resources that they believe will yield a profit (Shane, 2003). Hence sourcing becomes one entrepreneurial opportunity that firms can leverage to attain superior performance. Similarly, sourcing decisions manipulate resource configurations (Eisenhardt & Martin, 2000; Winter, 2003), that may lead to different "combinative capabilities" (Kogut & Zander, 1992) or "architectural competence" (Henderson & Cockburn, 1994) and may result in superior performance.

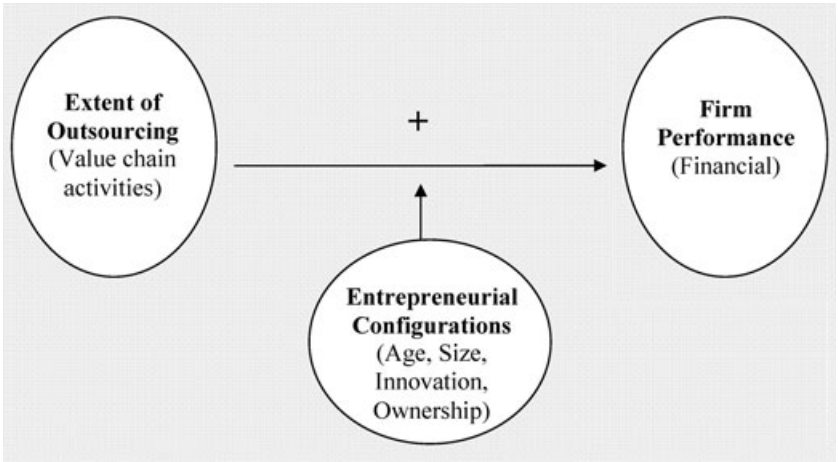
Several theoretical perspectives (e.g., risk reduction, efficiency, learning, resource-based view, etc.) purport to explain the reasons why firms engage in outsourcing any of its value chain activities (e.g., Arrow, 1965; Williamson, 1975; Barney, 1991; Poppo & Zenger, 1998). We extend these arguments to the entrepreneurial firm. The entrepreneurial firm, similar to other firms, makes a rational choice to engage in outsourcing in order to derive benefits. As these benefits accrue in the form of reduced costs, reduced uncertainty, protection of core competency, enhanced learning, or greater efficiencies, entrepreneurial firms in general will experience the positive impact of outsourcing on their financial performance. Hence, we hypothesize:

H2: Outsourcing has a positive effect on financial performance in entrepreneurial firms.

ENTREPRENEURIAL CONFIGURATIONS AND PERFORMANCE

One of the key issues faced by entrepreneurial firms is the problem of organizing under conditions of uncertainty (Alvarez & Barney, 2005). Additionally, entrepreneurial firms generally exist in a highly resource constrained environment and have to deal with scarcity in financial, human resource, and other strategic capabilities. Establishing interfirm relationships is one-way firms deal with uncertainty and dependence (Cyert & March, 1963). Further, firms are driven to bridge resource and skill gaps that put them at a disadvantage relative to the competition (Bharadwaj, Varadarajan, & Fahy, 1993). Hence, we argue that entrepreneurial firms seek to complement their resource gaps by depending on external suppliers via interfirm relationships such as outsourcing. These complementary resources are obtained to survive and prosper (Barringer & Harrison, 2000). Furthermore, entrepreneurial firms can combine their own resource sets with these complementary

Figure 1: Entrepreneurial configurations and the outsourcing–performance linkage.



resources acquired via outsourcing to achieve synergistic resource bundles that are hard for rivals to imitate (Harrison, Hitt, Hoskisson, & Ireland, 1991).

Relative competence in coordinating and utilizing resources is a key strategic capability (Majumdar, 1999) that distinguishes performance between firms with access to similar outsourcing options. Similarly, we argue that this coordination capability does not occur in a vacuum, but stems in part from existing resources in entrepreneurial firms (as depicted in their configurational characteristics). Thus, the coordination capabilities of configurations dominated by older, larger, innovative, and entrepreneur-owned firms will vary as they differ in their resource configurations. Hence, we predict that specific combinations of outsourcing with entrepreneurial configurations lead to higher firm performance, while yet other combinations adversely affect firm performance, resulting in a contingency theory of business strategy (Hofer, 1975). Figure 1 provides a graphic description of our argumentation.

Next, we explain the nature of these contingencies and the underlying causal mechanisms that give rise to the idiosyncratic effects of our four theorized configurations on performance. For parsimony of argument, we focus on the dominant characteristic in each configuration. However, our intention is to show empirically that the dominant characteristic alone does not drive the results.

Firms create negotiated environments (Cyert & March, 1963) and establish interorganizational relationships such as outsourcing to respond strategically to environmental uncertainty (Pfeffer & Novak, 1976). Environmental uncertainty can also cause a power imbalance in favor of the supplying firm (Pfeffer & Salancik, 1978). Entrepreneurial firms are similarly affected by both uncertainties as well as power imbalances in their outsourcing exchanges. Entrepreneurial firms therefore have to deal with resource dependencies in the external environment and effectively negotiate the power imbalances in the outsourcing relationship to realize performance primacy.

Specifically, firms with configurations dominated by larger size, not only have more resources (especially human resources that can be devoted to coordination), but also have relatively more power than smaller firms in extracting beneficial outsourcing arrangements. Due to size advantages, larger firms can negotiate better terms in the outsourcing contract, via volume discounts. Larger clients, if unsatisfied, can also influence the suppliers more than can smaller firms by taking their business elsewhere. Thus, though a relationship of dependency exists between the entrepreneurial firm and the supplying firm, larger firms can negotiate a favorable contract due to their superior power relative to other firms. For example, in an empirical analysis of plant level data in Ireland for the electronics sector, Görg and Hanley (2004) found that larger plants (i.e., substantially larger than the mean employment size) benefit from outsourcing materials while this does not appear to be the case for small plants. However, size alone is not sufficient to take advantage of power relationships. Sufficient flexibility, perhaps as demonstrated by more innovation or younger age must still be present. Hence, we hypothesize:

H3a: Firms with the configurational context dominated by larger size have greater performance benefits from outsourcing.

Apart from size, another important factor that affects the coordination capability of firms is the innovative potential of the firm. Entrepreneurial firms that are dominated by innovation in their configurational makeup tend to be more proactive in their search and scanning processes, are faster in their responses, adapt quicker to changes, and try to find new ways to manage their resource dependencies with the external environment. For example, prospectors (the most innovative firm in Miles and Snow's (1978) typology) tended to be more responsive to gaps and aggressively pursued IT outsourcing options (Grover, Cheon, & Teng, 1994). Thus, we anticipate that firms with a configurational context dominated by innovation find creative ways to use outsourcing arrangements that offset their disadvantages (stemming from a smaller size and lower power) relative to larger firms. Likely, such firms use outsourcing for rapid acquisition of necessary resources that lead to competitive advantages rather than simple internal efficiencies.

As a result, even though they have relatively lower power in comparison to firms with size-dominated configurations, they benefit from outsourcing due to their creative agility in managing their dependencies. However, innovation alone without other characteristics such as adequate size or the established relationships associated with age is likely insufficient to benefit from outsourcing. Consequently, we propose the following hypotheses:

H3b: Firms with the configurational context dominated by innovation have greater performance benefits from outsourcing.

Lastly, apart from the effects of configurations dominated by size or innovation, that tend to promote benefits from outsourcing due to coordinative capability, two other configurations (those dominated by age and entrepreneur ownership) tend to depress the coordinative capability of entrepreneurial firms and their ability to negotiate beneficial outsourcing arrangements.

Although age-dominated organizational configurations provide firms with greater experience and benefits from prior learning, such configurations also

saddled firms with problems of structural inertia (Hannan & Freeman, 1984). In stable environments, age could confer beneficial advantages to the firm since transactions with external environments follow a preestablished path. However, in dynamic and uncertain environments, age tends to adversely affect the ability to respond quickly to change. With increasing age, firms tend to lose their ability to respond to change, are slower, less adaptive, and less flexible than younger firms that are more nimble and fast. Entrepreneurial firms in particular must deal with the unique challenges of value creation and appropriation under conditions of uncertainty in managing their outsourcing relationships. Yet, speed and agility in negotiating favorable outsourcing arrangements are likely more difficult to achieve in firms dominated by age-related configurations. Moreover, firms with age-dominated configurations are also low in innovativeness that may perpetuate older and perhaps inefficient arrangements with outsourcers due to structural inertia. Thus, we expect older firms, without the compensating benefits of either size or creativity relative to other firms, may possibly have greater inefficiencies in their external environmental exchanges that could negatively affect their performance. Hence, we offer the following hypothesis:

H3c: Firms with the configurational context dominated by age have lower performance benefits from outsourcing.

Ownership has been considered to be a surrogate for culture (Majumdar, 1999), and culture is a source of inertia as it is less amenable to change and tends to perpetuate normative standards. As ownership confers some control rights, entrepreneurial firms owned by their entrepreneur/CEO's are subject to decisions of their owners. Entrepreneur owners tend to have strong preferences and tend to enforce their dominant logic (Prahalad & Bettis, 1986). However, in uncertain and dynamic entrepreneurial environments, a diversity of logics from outside ownership may facilitate greater openness and adaptation to change and ensure continuous value-creating entrepreneurial opportunities in outsourcing relationships. As a result, older or owner-dominated firms, unless combined with larger size or innovation, seem likely to benefit less from outsourcing. Consequently, we propose the following hypotheses:

H3d: Firms with the configurational context dominated by entrepreneur ownership have lower performance benefits from outsourcing.

METHODS

Sample and Data

Our sample consists of 278 entrepreneurial firms drawn from the Ewing Marion Kauffman Foundation's unique database of companies. This research is based on the 1998 *Survey of Innovative Practices* mailed to Entrepreneur of the Year® Institute (EOYI). The EOYI membership is comprised of regional finalists and winners in the annual Ernst & Young's Entrepreneur of the Year® Awards Program sponsored by Ernst & Young and the Kauffman foundation. Thus, the sample represents high performing firms in terms of their contribution to growth, profitability, job creation, and economic impact, and fit in well with the definition of entrepreneurial

firms as described earlier. The sample included businesses from a wide array of industries representing communications, services, distribution, manufacturing, security, financial services, transportation, wholesale trade, hospitality, construction, health services, retail, and consumer products.

In summary, our sample reflects high growth companies, a relatively unexplored demographic that is recently receiving some attention (Markman & Gartner, 2002; Delmar, Davidsson, & Gartner, 2003; Barringer, Jones, & Neubaum, 2005). We use the term "entrepreneurial" strictly to describe a sample that was previously labeled and classified as such by expert judges at a well-known entrepreneurship foundation. All data for financial performance, configurations, and outsourcing were obtained from the *Survey of Innovative Practices* conducted by the Ernst & Young and Kauffman foundations.

Measures

Financial performance

Our dependent variable, financial performance, is a multidimensional construct with four indicators representing well-established static and change variables. Thus our measure of firm performance includes measures of profitability ([i] sales revenue and [ii] net profit) as well as measures for growth ([iii] growth in profits and [iv] growth in sales revenue) and is a formative scale similar to that used in prior research (e.g., Hult, Ketchen, & Slater, 2005; O'Sullivan & Abela, 2007). As a formative scale, the measure meets the criteria of coverage of the construct domain and lack of multicollinearity among indicators as suggested by Diamantopoulos and Winklhofer (2001). To adjust for industry differences in performance, we computed standard scores within industry for all performance variables. The overall financial performance score was computed as the average of the four standard scores.

Configuration variables

Firm age was calculated as age since founding. Typical of past research (Lafuente & Salas, 1989; Bergh, 1995), firm size was measured by the number of full time employees in the organization in 1995, allowing a 2-year lag effect on the dependent variables. Similarly, entrepreneurial ownership was measured as the percentage of total firm ownership held by the chief executive, following established conventions of measuring CEO ownership by the proportion of shares owned by the CEO (Sanders, 2001; Boeker, 1992). Prior operational definitions of innovation have used the number and novelty of new products introduced and markets entered as a measure of innovation (Merz & Sauber, 1995). Innovation was therefore operationalized as the percentage of annual sales of new products from 1995 to 1997 sold to existing or new customers. Hence, we measured product rather than process or other types of innovation as it has direct effects on firm financial performance.

Outsourcing

Survey participants responded to questions about whether or not their firm outsourced 11 activities. In keeping with the value chain analogy, the firm's

outsourcing activity represented five dimensions of manufacturing, support, marketing, human resources (HR), and research and development (R&D). All outsourcing variables were measured as a dummy variable (i.e., whether these activities were outsourced). These eleven items indicated whether the firm outsourced manufacturing (one item), R&D (one item), marketing (three items related to outsourcing marketing, distribution and sales), support (three items related to outsourcing information systems, accounting and customer support), and HR (three items related to outsourcing training and development, payroll and benefits, and recruiting and staffing).

Outsourcing represented the average of the eleven dummy variables and thus represented a formative measure (Bollen & Lennox, 1991). A formative measure was appropriate because it covered the domain of the activity and there is no reason to expect that outsourcing in one activity will be necessarily related to outsourcing in another activity. Following Diamantopoulos and Winklhofer's (2001) guidelines on formative index construction, we tested for collinearity among the indicators and found none.

Analysis

A variety of techniques may be used to create configurations that include observations, clustering, or other multivariate methods, but it must be noted that good gestalts are relatively unaffected by the methods or data. Further, "the utility of any classification scheme relies on its ability to generate insight or to advance a predictive task," hence it is the descriptive power, rather than the methods used to derive it that are important (Miller, 1996, p. 507).

In our study, we used the two-step cluster analysis procedure to identify our entrepreneurial configurations as the most appropriate clustering algorithm for our data set and objectives (Hartigan, 1975). The two-step method is particularly appropriate for samples above 200. Further, since we hypothesize a specific number of clusters, we selected a method that provided an a priori decision rule that simulation research shows excellent success in predicting "true" clusters (SPSS technical report, 2007a,b). The procedure is replicable, providing a repeatable criterion for choosing the number of clusters (Punj & Stewart, 1983), and avoids predicament where the researchers hypothesize a number of groups and then constrain the cluster algorithm to produce that number of clusters. Thus, since the clusters are determined by the criterion specified in the Clustering Criterion group, the two-step procedure enabled us to test our first hypothesis regarding the number of configurations objectively.

Based on life cycle theory and characteristics of entrepreneurial firms, four variables were entered (firm age, size, innovation, and ownership). The log-likelihood distance measure was used to determine the similarity between two clusters, and all variables were standardized. The results were similar with the Euclidean distance measure as well. The procedure produced information criteria (BIC) by numbers of clusters in the solution, cluster frequencies for the final clustering, and descriptive statistics by cluster for the final clustering.

The two-step cluster analysis tested H1. We used the generalized linear model to test the remaining hypotheses (Cohen, Cohen, West, & Aiken, 2003) with

performance as the dependent variable. Factors were the configurations and the covariate was the outsourcing variable. We tested our second hypothesis (H2) with the main effect of outsourcing on performance. We tested our remaining moderation hypotheses (H3a, b, c, d) by observing the interaction effects of configurations with outsourcing predicting performance.

RESULTS AND FINDINGS

Descriptive Statistics

Table 1 provides descriptive statistics for the variables in the study, including the means, standard deviations, and correlation matrix.

Entrepreneurial Configurations

The two-step cluster analysis yielded a five-cluster solution with significant differences among the configurations identified (Wilks, Hotellings, and Roy's F values, were significant at the .01 level). Table 2 shows the centroid values on each of the clustering variables for the five configurations. Also provided is the frequency of firms in each configuration.

Cluster membership profiles display the cluster to which each case is assigned at one or more stages in the combination of clusters. Figure 2 visually displays the configurational characteristics of the five derived clusters. Standardized centroid

Table 1: Descriptive statistics.

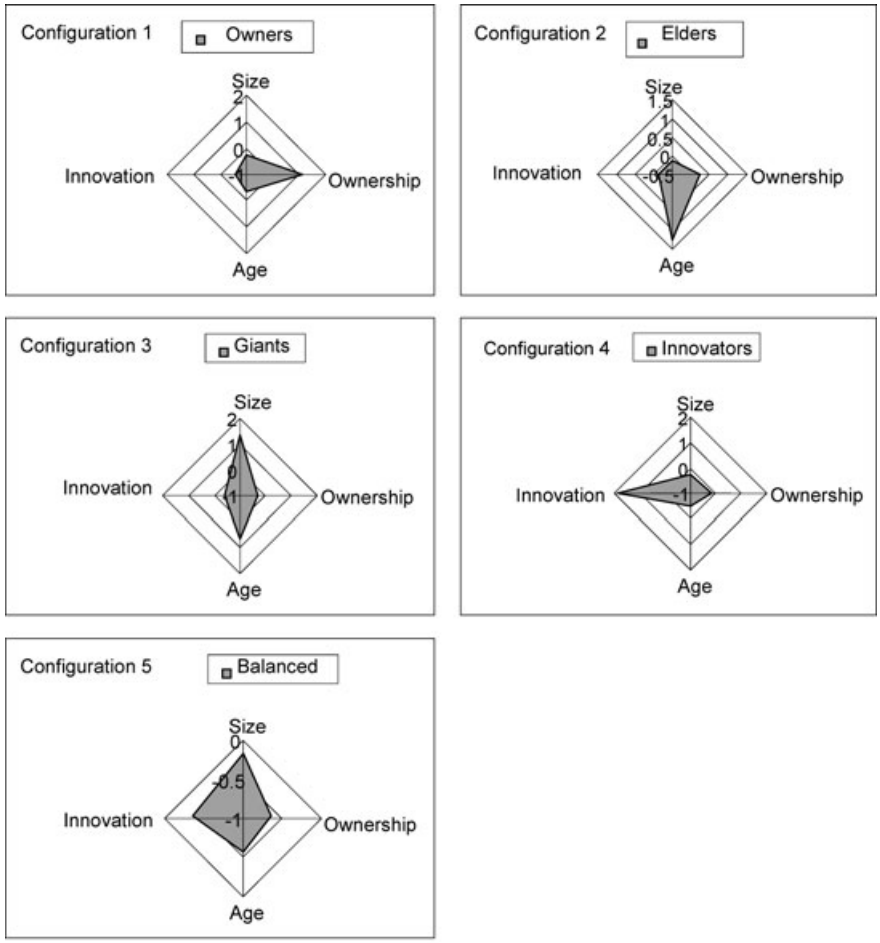
Variable Description	Mean	*SD*	1	2	3	4	5	6
1. Size	109.85	212.67	1					
2. Age	12.60	6.80	.25**	1				
3. Innovation	24.84	24.58	−.11	−.13*	1			
4. Ownership	58.07	34.58	−.09	.11	−.10	1		
5. Outsourcing[a]	.23	.18	−.05	−.01	.22**	−.15*	1	
6. Performance[a]	−.08	.40	.27**	.12	.17*	.02	.17*	1

*$p < .05$, **$p < .01$.
[a]Standardized scores.

Table 2: Cluster profiles: Centroid values and frequencies for the configurations.

Configuration No. & Name	Size		Age		Innovation		Ownership		
	Mean	*SD*	Mean	*SD*	Mean	*SD*	Mean	*SD*	*N*
1. The Owners	38.20	46.95	9.45	3.99	11.25	11.24	95.18	9.18	*60*
2. The Elders	101.78	86.77	20.40	4.46	22.63	15.33	63.75	34.05	*82*
3. The Giants	823.75	407.35	16.25	7.82	14.94	13.02	44.19	32.39	*16*
4. The Innovators	35.97	40.95	8.65	4.28	74.51	20.38	49.76	31.89	*37*
5. The Balanced	64.94	69.97	8.22	2.96	16.60	12.80	32.02	20.00	*83*
Combined	109.85	212.67	12.60	6.80	24.84	24.58	58.07	34.58	*278*

Figure 2: Graphical representation of configurations (standardized centroid values).



Note: These are visual representations of standardized centroid values for all five clusters on each of the four clustering variables (age, size, innovation, and ownership).

values for each cluster were used to plot radar charts to allow for visual comparison of differences. Although configurations are by definition multivariate, we labeled them based on their dominant characteristics relative to other configurations. The figures show that each cluster displayed unique combinations of age, size, innovation, or ownership. However, the data also show that each configuration displayed at least one dominant dimension relative to the other configurations. Thus, it can be seen that cluster one (labeled "the owners") displayed that ownership was the major distinguishing factor, cluster two (labeled "the elders") displayed that age was the major distinguishing factor, cluster three (labeled "the giants") displayed that size was the major distinguishing factor, and cluster four (labeled "the innovators") were extremely innovative in comparison to the other clusters.

According to Hypothesis 1, we expected the clustering solution to provide four entrepreneurial configurations that represented the predominant characteristics of age, innovation, ownership, and size. However, an additional cluster (cluster five) emerged empirically and we labeled this "the balanced." This cluster was a mix of all the four variables with no clear distinguishing factor relative to the other configurations. Thus, as we found the expected four configurations and an additional one, our first hypothesis (H1) received partial support. The five obtained configurations are broadly described below (refer to Table 2).

Configuration 1: "The Owners": The firms in this configuration ($N = 60$) are almost fully owned by the entrepreneur (95%), and, interestingly, are the least innovative (11%). In terms of age and size, they tend to be younger (9.5 years), and very small (38 employees) compared to other firms.

Configuration 2: "The Elders": The firms in this configuration ($N = 82$) tend to be the oldest firms (20.4 years), that are average on all the other attributes, that is, they are average innovators (23%), average in size (about 102 employees), and are also average in entrepreneurial ownership (64%) compared to other firms.

Configuration 3: "The Giants": The firms in this configuration ($N = 16$) are the largest in size (824 employees), are generally less innovative (15%), older (16 years), and are below average in entrepreneurial ownership (44%) compared to other firms.

Configuration 4: "The Innovators": The firms in this configuration ($N = 37$) are highly innovative (75%). They are also very young (8.7 years), are the smallest in size (36 employees) and tend to be below average in entrepreneurial ownership (50%) compared to other firms.

Configuration 5: "The Balanced": The firms in this configuration ($N = 83$) are perhaps the most balanced on all the attributes, and seem to display an equal mix of all four variables. Thus, they are generally balanced on the four attributes rather than having an extreme score on any one dimension. They are 8.2 years old, have an entrepreneurial ownership of 32%, are somewhat innovative (17%) and have an average of 65 employees.

Multivariate Analysis

Main effects of outsourcing

The main effects model (model 1) in Table 3 shows the results for the regression of firm performance on outsourcing and entrepreneurial configurations. The dependent variable was the multidimensional construct of firm performance described earlier in the measures section. This represents the main effects model used to test the second hypothesis. H2 predicted that there would be a general positive effect of outsourcing on the financial performance of entrepreneurial firms, and this was supported by the results ($F = 6.42$, $p < .01$) ($b = .39$, $p < .01$). The model explained about 10% of the total variance in firm performance ($R^2 = 0.10$).

Table 3: Parameter estimates of firm performance regressed on outsourcing by entrepreneurial types.

Variable Category	Variable Name	Main Effects Model 1[a]	Interaction Effects Model 2[a]
	Constant	.19	−.29
		(.11)	(.16)
Type of Firms	"Owners" Configuration	−.41	.06
		(.12)	(.18)
	"Elders" Configuration	−.35**	.18
		(.12)	(.18)
	"Innovators" Configuration	−.25*	.02
		(.13)	(.20)
	"Balanced" Configuration	−.45***	.18
		(.12)	(.18)
	"Giants" Configuration	0[b]	0[b]
Outsourcing	Extent of Outsourcing	.39**	3.15***
		(.15)	(.71)
	"Owners" Configuration × Outsourcing		−2.66***
			(.81)
	"Elders" Configuration × Outsourcing		−2.96***
			(.74)
	"Innovators" Configuration × Outsourcing		−1.97*
			(.81)
	"Balanced" Configuration × Outsourcing		−3.41***
			(.77)
	"Giants" Configuration × Outsourcing		0[b]
	R^2	.10	.20

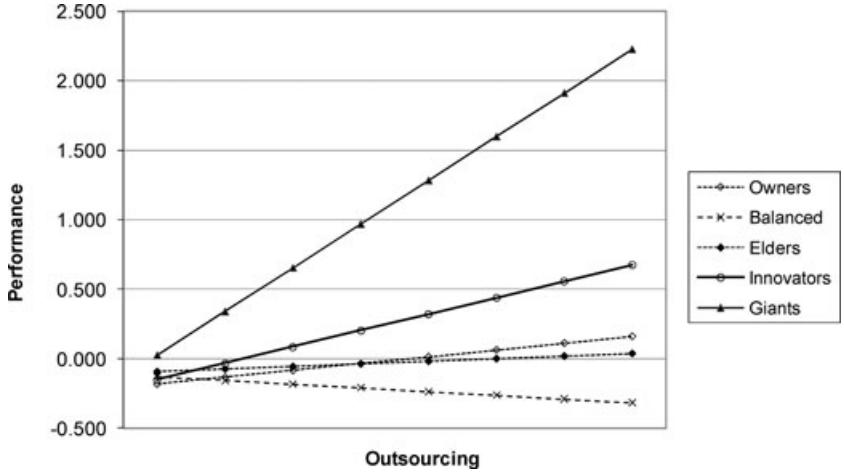
Note: $^{*}p \leq .05$, $^{**}p \leq .01$, $^{***}p \leq .001$.
[a]For each model we report nonstandardized slopes, with standard error in parentheses.
[b]This parameter is set to zero because it is redundant. Giants are the hold-out group.

Moderating effects of configurations on the outsourcing–performance linkage

Model 2 in Table 3 shows the results of the moderated regression of firm performance on outsourcing and entrepreneurial configuration with outsourcing × configurations interactions. This model tested hypotheses H3a, H3b, H3c, and H3d. These hypotheses predicted that entrepreneurial configurations moderate the effects of outsourcing on financial performance. Results supported this expected outcome ($F = 6.21$; $p < .001$) and, more importantly, our model was able to explain about 20% of the total variance in financial performance ($R^2 = 0.20$). This suggests an incremental variance from the main effects model of about 10%.

In model 2, the Giants configuration was the redundant parameter and hold-out group and thus contrasted other configurations with this type. As such, the interaction effects slopes show the differences between the effects of outsourcing for the Giants and the other configurations. Findings show that the Giants were significantly different from all other configurations, and received the largest financial

Figure 3: Effects of outsourcing on performance for entrepreneurial types.



benefits from outsourcing. That is, Owners ($b = -2.66$; $t = -3.27$; $p < 0.001$); Elders ($b = -2.96$; $t = -4.00$; $p < 0.001$); Innovators ($b = -1.97$; $t = -2.43$; $p < 0.05$); and Balanced ($b = -3.41$; $t = -4.42$; $p < 0.001$) were significantly lower than Giants in performance returns from outsourcing.

Figure 3 graphs the interaction effects of outsourcing with configurations on performance based on the moderated regression in Table 3. The graph displays standardized performance values on the y-axis and the extent of outsourcing on the x-axis. As illustrated, the Giants gained the most from outsourcing followed by the Innovators. A very negligible gain was seen for the Owners but gains were almost nonexistent for the Elders. The Balanced firms (of which we had no prior expectations) seemed to suffer from outsourcing.

An examination of all possible contrasts showed that only the Giants and Innovators were significantly different from each other and from the other configurations regarding the performance benefits from outsourcing. Thus, when the Innovators configuration was the hold-out group in the moderated regression, the Giants had significantly more positive benefits from outsourcing than the Innovators ($b = 1.97$; $t = 2.43$; $p < .05$) while the Balanced ($b = -1.44$; $t = -2.93$; $p < .01$) and the Elders ($b = -.99$; $t = -2.24$; $p < .05$) had significantly lower performance benefits from outsourcing than did the Innovators. Although this equation tested different contrasts, we did not report it as it is mathematically equivalent to the equation in Table 3 and produces the same slopes shown in Figure 3.

DISCUSSION

Heterogeneity of firm performance remains one of the fundamental questions in the strategy field (Rumelt, Schendel, & Teece, 1994). Noting that the improper use of outsourcing may have caused the competitive decline of the U.S. consumer electronics industry, Bettis, Bradley, and Hamel (1992) call for a strategic view

of sourcing, rather than viewing it as a defensive, operational, incremental, or financial measure. Further, some scholars view outsourcing as a black box (Sambamurthy, Bharadwaj, & Grover, 2003) since there is little research regarding potential mediation or moderation effects (Santhanam & Hartono, 2003).

Following calls to direct future efforts to incorporate additional perspectives besides cost (and transaction cost economics) to provide a more complete understanding of outsourcing (Klaas, McClendon, & Gainey, 1999), we used a configurational approach and showed that various complex alignments of internal organizational characteristics can moderate the effects of outsourcing on performance for entrepreneurial firms. Unlike the resource-based view that has been used widely in explaining outsourcing (Wade & Hulland, 2004), we used resource dependency theory as an appropriate theoretical lens to explain how different entrepreneurial configurations affect exchanges with other organizations in the external environment that result in performance-related outcomes.

We first proposed a theoretically based typology of four entrepreneurial configurations that were informed by life cycle stages and entrepreneurial organizational characteristics. As hypothesized (*H1*), each of our configurational types differed from other types on the major defining variables of age, size, innovation, and ownership. Taking these essential differentiating features, we labeled them as Elders, Giants, Innovators, and Owners. However, we found an additional configuration type (Balanced) that was unanticipated.

Although we found that outsourcing has a general positive effect on financial performance in entrepreneurial firms (*H2*), more interesting were the moderated relationships showing that different configurations affect the relationship between outsourcing and performance (H3a, b, c, d). The findings suggest that outsourcing tactics result in the greatest benefit to the Giants and Innovators due to their ability to manage resource dependency relationships. We suspect that Giants, as more important customers, are more attractive to outsourcing service providers and can use their customer power to gain lower cost and higher quality service than other configurational types. However, size alone did not seem sufficient as the Giants were also relatively younger and less innovative. Although they may not have the market power of Giants, Innovators may gain performance-enhancing speed and flexibility from outsourcing. They are smaller and younger and are less likely to have developed all value chain capabilities to maximize their returns from innovation. Outsourcing then provides a slack to focus energies on innovations rather than on internal value chain development.

Consistent with expectations, the Elders and Owners obtained the least benefits from outsourcing, potentially due to their inefficiencies in managing the resource dependency relationship with outsourcing partners. Firms with the Elders configuration also have little innovation that may give rise to inertial pressures against outsourcing core activities even when doing so seems to benefit other entrepreneurial firms. Similarly, firms with Owner configurations, in spite of being young but perhaps because of the need to enforce the owner's dominant logic (Prahalad & Bettis, 1986), seem to lack innovation and perhaps the ability to identify beneficial outsourcing opportunities.

We found that firms with Balanced configurations did not gain from outsourcing. Without any predominant defining feature, such firms may not have specific capabilities that typically stem from unique resource sets as seen for the Elders and Innovators. That is, since balanced configurations have all four firm attributes, we suspect that some "neutralization of benefits" occurs due to the lack of any predominant characteristic in the balanced firms. Hence, performance gains from outsourcing by aligning to these attributes are not seen.

In sum, though outsourcing in general generates positive returns, in order to achieve sustained, additional gains from outsourcing, the manager in entrepreneurial firms could attend to how outsourcing fits with the configurational characteristics of his or her entrepreneurial firm. Though we explored the pattern of these contingent relationships only for entrepreneurial firms, it is likely that some contingent relationships between financial performance and outsourcing may also depend on the different types of configurations of age, size, innovation, and ownership that may exist for more established firms. For example, larger established firms (similar to the "giants" configuration) are able to generate scale economies due to their ability to manage resources effectively, and are also likely to wield greater power in the market place to derive substantially more favorable outsourcing contracts than established firms without these characteristics. Similarly, older established firms (similar to the "elders" configuration) may suffer from inertia and are likely to be lethargic, less nimble, and less effective in managing their exchanges with outsourcing partners and hence may benefit the least in performance gains from outsourcing.

Limitations of the Research

Though the present study focused on the extent of outsourcing, this composite measure did not capture differences within the activities that were outsourced. Data limitations did not allow us to measure (for example, the percentage of each activity outsourced) within each of the eleven outsourced activities. As we derived our data from the *Survey of Innovative Practices*, one cannot rule out the possibility for self-report bias in the sample. Further, though our findings elaborate on the complexity of strategic sourcing decisions, the atypical sample necessarily presents a restriction of range issue. Hence, more research is necessary for generalizations to other "typical" firms as well as future impact of outsourcing on performance, with empirical validation by alternative methodologies (Bharadwaj, 2000). Nonetheless, results show exciting evidence for our hypothesis that strategic options such as outsourcing should be adapted to configurational types to enhance firm performance.

Implications for Future Research and Practice

The creation and empirical validation of a typology of entrepreneurial firms adds to the emerging discussion on the theory of the entrepreneurial firm. The major implication is the consideration of the firm as being a multiplex of various characteristics. This view is captured best by taking a configurational approach via a "gestalt" of firm characteristics that represent organizational and life cycle characteristics.

Fit or alignments between internal characteristics and external factors have implications for firm performance and ultimately survival. As such, for the managers, understanding the dynamic of alignments between firm characteristics and externalities is important for financial performance. Our findings suggest that, when firms manage their external dependencies and develop alignments with firm internal attributes they are likely to see higher financial gains from outsourcing. Our findings also suggest that managers should consider resource dependencies created by outsourcing. Depending on their fit with the nature of the organization, exchanges with critical external agents can have a significant impact on the firm's bottom line.

From a theoretical perspective, simple transaction cost-based models fail to capture the richness in the variety of phenomena that impact the effectiveness of sourcing decisions. Further, sourcing decisions that are optimal for one organizational configuration may be suboptimal for other configurations, even for the same firm in a different time period. Consequently, managers may need to frequently reconsider and reevaluate their sourcing decisions. Such a proactive approach is better from a performance standpoint rather than following an outsourcing strategy made in the past or one that was motivated by different organizational situations. Potential areas for future inquiry may refine our observations and include other moderators, longitudinal assessments, finer distinctions between specific types of outsourcing and the distribution of these activities in the value chain. [Received: December 2006. Accepted: May 2008.]

REFERENCES

Alvarez, S. A., & Barney, J. B. (2005). How do entrepreneurs organize firms under conditions of uncertainty? *Journal of Management, 31*(5), 776–793.

Alvarez, S. A., & Barney, J. B. (2007). The entrepreneurial theory of the firm. *Journal of Management Studies, 44*(7), 1057–1063.

Anderson, P., & Tushman, M. L. (1990). Technological discontinuities and dominant designs: A cyclical model of technological change. *Administrative Science Quarterly, 35*(4), 604–633.

Arrow, K. (1965). *Aspects of the theory of risk bearing*. Yrjo Johnssonin Saatio, Helsinki, Finland: The Academic Book Store.

Baker, D. D., & Cullen, J. B. (1993). Administrative reorganization and the configurational context: The contingent effects of age, size, and change in size. *Academy of Management Journal, 36*(6), 1251–1277.

Bantel, K. A. (1998). Technology-based "adolescent" firm configurations: Strategy, identification, context, and performance. *Journal of Business Venturing, 13*(3), 205–230.

Barney, J. B. (1991). Firm resources and sustained competitive advantage. *Journal of Management, 17*(1), 99–120.

Barringer, B. R., & Harrison, J. S. (2000). Walking a tightrope: Creating value through inter-organizational relationships. *Journal of Management, 26*(3), 367–403.

Barringer, B. R., Jones, F. F., & Neubaum, D. O. (2005). A quantitative analysis of the characteristics of rapid-growth firms and their founders. *Journal of Business Venturing, 20*(5), 663–687.

Bergh, D. B. (1995). Size and relatedness of units sold: An agency theory and resource-based perspective. *Strategic Management Journal, 16*(3), 221–239.

Bettis, R. A., Bradley, S. P., & Hamel, G. (1992). Outsourcing and industrial decline. *The Executive, 6*(1), 7–22.

Bharadwaj, A. S. (2000). A resource-based perspective on information technology capability and firm performance: An empirical investigation. *MIS Quarterly, 24*(1), 169–196.

Bharadwaj, S., Varadarajan, P. R., & Fahy, J. (1993). Sustainable competitive advantage in service industries: A conceptual model and research propositions. *Journal of Marketing, 57*(10), 83–99.

Boeker, W. (1992). Power and managerial dismissal: Scapegoating at the top. *Administrative Science Quarterly, 37*(3), 400–422.

Bollen, K., & Lennox, R. (1991). Conventional wisdom on measurement: A structural equation perspective. *Psychological Bulletin, 110*(2), 305–314.

Carter, N. M. (1990). Small firm adaptation: Responses of physicians' organizations to regulatory and competitive uncertainty. *Academy of Management Journal, 33*(2), 307–333.

Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2003). *Applied multiple regression/correlation analysis for the behavioral sciences* (3rd ed.). Mahwah, NJ: Erlbaum.

Covin, J. G., & Slevin, D. P. (1991). A conceptual model of entrepreneurship as firm behavior. *Entrepreneurship Theory and Practice, 16*(1), 7–26.

Cyert, R., & March, J. (1963). *A behavioral theory of the firm*. Englewood Cliffs, NJ: Prentice Hall.

Daily, C. M., McDougall, P. P., Covin, J. G., & Dalton, D. R. (2002). Governance and strategic leadership in entrepreneurial firms. *Journal of Management, 28*(3), 387–412.

Delmar, F., Davidsson, P., & Gartner, W. B. (2003). Arriving at the high-growth firm. *Journal of Business Venturing, 18*(2), 189–216.

Dess, G. G., Lumpkin, G. T., & Covin, J. G. (1997). Entrepreneurial strategy making and firm performance: Tests of contingency and configurational models. *Strategic Management Journal, 18*(9), 677–695.

Diamantopoulos, A., & Winklhofer, H. M. (2001). Index construction with formative indicators: An alternative to scale development. *Journal of Marketing Research, 38*(2), 269–277.

Diether, G., Boerner, S., & Lanwehr, R. (2004). The more situation control, the more innovation? Putting the linearity thesis to the test. *International Journal of Entrepreneurship and Innovation Management, 4*(1), 98–114.

Eisenhardt, K. M., & Martin, J. A. (2000). Dynamic capabilities: What are they? *Strategic Management Journal, 21*(10–11), 1105–1121.

Gilley, K. M., & Rasheed, A. (2000). Making more by doing less: An analysis of outsourcing and its effects on firm performance. *Journal of Management, 26*(4), 763–790.

Görg, H., & Hanley, A. (2004). Does outsourcing increase profitability? *The Economic and Social Review, 35*(3), 267–288.

Grover, V., Cheon, M., & Teng, J. T. C. (1994). An evaluation of the impact of corporate strategy and the role of information technology on IS functional outsourcing. *European Journal of Information Systems, 3*(3), 179–191.

Hanks, S. H., Watson, C. J., Jansen, E., & Chandler, G. N. (1993). Tightening the life-cycle construct: A taxonomic study of growth stage configurations in high-technology organizations. *Entrepreneurship Theory and Practice, 18*(2), 5–29.

Hannan M. T., & Freeman, J. (1984). Structural inertia and organizational change. *American Sociological Review, 49*(2), 149–164.

Harrison, J. S., Hitt, M. A., Hoskisson, R. E., & Ireland, R. D. (1991). Synergies and post—acquisition performance: Differences versus similarities in resource allocations. *Journal of Management, 17*(1), 173–190.

Hartigan, J. A. (1975). *Clustering algorithms*. New York: Wiley.

Henderson, A. D. (1999). Firm strategy and age dependence: A contingent view of the liabilities of newness, adolescence, and obsolescence. *Administrative Science Quarterly, 44*(2), 281–314.

Henderson, R., & Cockburn, I. (1994). Measuring competence? Exploring firm effects in pharmaceutical research. *Strategic Management Journal, 15*(special issue), 63–84.

Hofer, C. W. (1975). Toward a contingency theory of business strategy. *Academy of Management Journal, 18*(4), 784–810.

Hult, G. T. M., Ketchen, D. J., & Slater, S. F. (2005). Market orientation and performance: An integration of disparate approaches. *Strategic Management Journal, 26*(2), 1173–1181.

Ketchen, D. J., Combs, J. G., Russell, G. J., Shook, C., Dean, M. A, Runge, J., et al. (1997). Organizational configurations and performance: A meta-analysis. *Academy of Management Journal, 40*(1), 223–231.

Klaas, B. S., McClendon, J., & Gainey, T. W. (1999). HR outsourcing and its impact: The role of transaction costs. *Personnel Psychology, 52*(1), 113–136.

Kogut, B., & Zander, U. (1992). Knowledge of the firm, combinative capabilities, and the replication of technology. *Organization Science, 3*(3), 383–397.

Lafuente, A., & Salas, V. (1989). Types of entrepreneurs and firms: The case of new Spanish firms. *Strategic Management Journal, 10*(1), 17–30.

Lawrence, P., & Lorsch, J. (1967). *Organization and environment*. Cambridge, MA: Harvard University Press.

Lee, J., Miranda, S. M., & Kim, Y. (2004). IT sourcing strategies: Universalistic, contingency, and configurational explanations of success. *Information Systems Research, 15*(2), 110–132.

Majumdar, S. K. (1999). Sluggish giants, sticky cultures, and dynamic capability transformation. *Journal of Business Venturing, 15*(1), 59–78.

Markman, G. D., & Gartner, W. B. (2002). Is extraordinary growth profitable? A study of *Inc. 500* high growth companies. *Entrepreneurship Theory and Practice, 27*(1), 65–75.

Markman, G. D., Balkin, D. B., & Schjoedt, L. (2001). Governing the innovation process in entrepreneurial firms. *Journal of High Technology Management Research, 12*(2), 273–293.

Merz, G. R., & Sauber, M. H. (1995). Profiles of managerial activities in small firms. *Strategic Management Journal, 16*(7), 551–564.

Meyer, A. D., Tsui, A. S., & Hinings, C. R. (1993). Configurational approaches to organizational analysis. *Academy of Management Journal, 36*(6), 1175–1195.

Miles, R. E., & Snow, C. C. (1978). *Organizational strategy, structure and process*. New York: McGraw-Hill.

Miller, D. (1983). The correlates of entrepreneurship in three types of firms. *Management Science, 29*(7), 770–791.

Miller, A. (1988). A taxonomy of technological settings with related strategies and performance levels. *Strategic Management Journal, 9*(3), 239–254.

Miller, D. (1996). Configurations revisited. *Strategic Management Journal, 17*(7), 505–512.

Miller, D., & Friesen, P. H. (1982). Innovation in conservative and entrepreneurial firms: Two models of strategic momentum. *Strategic Management Journal, 3*(1), 1–25.

Miller, D., & Friesen, P. H. (1983). Strategy-making and environment: The third link. *Strategic Management Journal, 4*(3), 221–236.

Miller, D., & Friesen, P. H. (1984). A longitudinal study of the corporate life cycle. *Management Science, 30*(10), 1161–1184.

O'Sullivan, D., & Abela, A. V. (2007). Marketing performance measurement ability and firm performance. *Journal of Marketing, 71*(2), 79–93.

Pfeffer, J., & Novak, P. (1976). Joint ventures and interorganizational dependence. *Administrative Science Quarterly, 21*(September), 394–418.

Pfeffer, J., & Salancik, G. R. (1978). *The external control of organizations: A resource dependence perspective*. New York: Harper and Row.

Poppo, L., & Zenger, T. (1998). Testing alternative theories of the firm: Transaction cost, knowledge-based, and measurement explanations for make-or-buy decisions in information services. *Strategic Management Journal, 19*(9), 853–877.

Porter, M. (1979). The structure within industries and companies' performance. *Review of Economics and Statistics, 61*(2), 214–227.

Prahalad, C. K., Bettis, R. A. (1986). The dominant logic: A new link between diversity and performance. *Strategic Management Journal, 7*(6), 485–501.

Punj, G., & Stewart, D. W. (1983). Cluster analysis in marketing research: Review and suggestions for application. *Journal of Marketing Research, 20*(2), 134–148.

Quinn, R. E., & Cameron, K. (1983). Organizational life cycles and shifting criteria of effectiveness: Some preliminary evidence. *Management Science, 29*(1), 33–52.

Raff, D. M. G. (2000). Superstores and the evolution of firm capabilities in American bookselling. *Strategic Management Journal, 21*(10/11), 1043–1059.

Ranger-Moore, J. (1997). Bigger may be better, but is older wiser? Organizational age and size in the New York life insurance industry. *American Sociological Review, 62*(6), 903–920.

Rumelt, R. P., Schendel, D. E., & Teece, D. J. (1994). Fundamental issues in strategy. In R. P. Rumelt, D. E. Schendel, & D. J. Teece (Eds.), *Fundamental issues in strategy: A research agenda*. Boston: Harvard Business School Press, 9–47.

Sambamurthy, V., Bharadwaj, A., & Grover, V. (2003). Shaping agility through digital options: Reconceptualizing the role of information technology in contemporary firms. *MIS Quarterly, 27*(2), 237–263.

Sanders, W. G. (2001). Behavioral responses of CEOs to stock ownership and stock option pay. *Academy of Management Journal, 44*(3), 477–493.

Santhanam, R., & Hartono, E. (2003). Issues in linking information technology capability to firm performance. *MIS Quarterly, 27*(1), 125–153.

Shane, S. (2003). *A general theory of entrepreneurship: The individual-opportunity nexus.* Cheltenham, UK: Edward Elgar.

SPSS Technical Report. (2007a). The SPSS two step cluster component: A scalable component enabling more efficient customer segmentation. White paper-technical report. Accessed September 1, 2007 [available at http://www.spss.com.]

SPSS Technical Report. (2007b). Two step cluster. Accessed September 1, 2007 [available at http://www.spss.com.]

Tushman, M. L., & Romanelli, E. (1985). Organizational evolution: A metamorphosis model of convergence and reorientation. In L. L. Cummings & B. M. Staw (Eds.), *Research in organizational behavior*. Greenwich, CT: JAI Press, 171–222.

Wade, M., & Hulland, J. (2004). Review: The resource-based view and information systems research: Review, extension, and suggestions for future research. *MIS Quarterly, 28*(1), 107–142.

Weber, M. (1947). *The theory of social and economic organization*. Translated by A. M. Henderson & Talcott Parsons. New York: The Free Press.

Wiklund, J., & Shepherd, D. (2005). Entrepreneurial orientation and small business performance: A configurational approach. *Journal of Business Venturing, 20*(1), 71–91.

Winter, S. G. (2003). Understanding dynamic capabilities. *Strategic Management Journal, 24*(10), 991.

Williamson, O. E. (1975). *Markets and hierarchies*. New York: The Free Press.

Woodward, J. (1958). *Management and technology*. London: H.M.S.O.

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