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ENTREPRENEURIAL STRATEGY MAKING AND FIRM PERFORMANCE: TESTS OF CONTINGENCY AND CONFIGURATIONAL MODELS

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This field study explores the nature of entrepreneurial strategy making (ESM) and its relationship with strategy, environment and performance. In the first phase, we assess the independence of entrepreneurially oriented strategy-making processes through factor analysis. The second phase, using moderated hierarchical regression anlaysis, investigates the relative predictive power of two approaches for exploring the ESM–performance relationship: contingency and configuration. Findings from a sample of 32 firms competing in a wide variety of industries indicate that configurational approaches that align ESM, strategy, and environment have greater predictive power than contingency approaches. However, not all high performing configurations are consistent with normative theory. Thus, alternate theories linking entrepreneurial strategy making to competitive advantage should be developed and tested. © 1997 by John Wiley & Sons, Ltd.

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Today's managers, faced with rapidly changing and fast-paced competitive environments, are challenged to manage 'discontinuities created by an interdependent global economy, heightened volatility, hypercompetition, demographic changes, knowledge-based competition, and demassification of some sectors accompanied by enormous growth in others' (Daft and Lewin, 1993: i). Such environmental conditions place intense demands on organizations to actively interpret opportunities and threats when making key strategic decisions. To cope with such challenges, management theorists have suggested that an entrepreneurial approach to strategy making may be vital for organizational success. An entrepreneurial strategy-making process, referred to as an 'entrepreneurial posture' by Covin and Slevin (1989), and an 'entrepreneurial orientation' by Lumpkin and Dess (1996), is often said to exist in a firm that 'engages in product market innovation, undertakes somewhat risky ventures and is *first* to come up with "proactive" innovations, beating competitors to the punch' (Miller, 1983: 771). This depiction is consistent with the type of organization-wide entrepreneurial strategy-making processes described in previous research. For example, Miller and Friesen (1982) posit that the entrepreneurial firm is the conceptual opposite of the conservative firm which is reluctant to innovate; Mintzberg (1973) argues

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that firms with an adaptive mode are 'reactive' compared to proactive entrepreneurial firms; and Miles and Snow (1978) suggest that prospector firms are risk takers, unlike defenders that avoid risk in favor of protecting previous gains. For managers confronting challenging and intense competitive environments, therefore, entrepreneurial strategy making (ESM) may represent an important strategy-making process.

What, then, are the performance implications for firms operating in an entrepreneurial strategy-making mode? On the one hand, there often seems to be a strong normative bias toward the inherent value in entrepreneurial behavior and an assumption or explicit depiction of a positive relationship between behavior and desired organizational outcomes such as sales growth and profitability (Covin and Slevin, 1991; Peters and Waterman, 1982; Schollhammer, 1982; Zahra, 1993a). Further, the popular press applauds entrepreneurial behavior and encourages its diffusion throughout the economy (Wallace, 1993). In sharp contrast, however, Hart (1992) suggests that entrepreneurial-type strategy making is more likely to be associated with poor performance. Hart argues that firms with directive, entrepreneurial top managers operating in a command mode and those with autonomous, intrapreneuring organization members operating in a generative mode are likely to be low performers relative to firms using other approaches to strategy making. We suggest that the ESM–performance relationship is an empirical question and agree with Zahra (1993a) who notes that there is 'a paucity of empirical documentation of the effect of entrepreneurship on company financial performance' (1993a: 11). Thus, the purpose of this paper is to explore the ESM construct and its relationship to performance.

The environmental challenges and organizational complexities described above suggest that simple relationships may be inadequate to explain the relationship between entrepreneurial strategy making and performance. Thus, multivariate approaches are needed to explore how the competitive environment and strategies used to compete in a given environment may influence the ESM–performance relationship. As such, both contingency and configurational models are proposed to address the question of performance implications. Given the importance of entrepreneurship as a subject in both the academic literature and popular press, further understanding the process itself, as well as its relationship to other organizational-level constructs and performance, is an important and timely research objective.

This study consists of two phases. In the first phase, a factor analysis is used to assess the dimensionality of strategy-making processes and the independence of the ESM construct. The second phase explores key relationships between ESM, other organizational-level constructs, and organizational performance for a sample of 32 firms competing in a variety of industries. We compare the predictive power of (1) contingency models which explore how a firm's strategy or competitive environment moderate the relationship between ESM and performance with (2) configuration models which assess the combined effects of ESM, strategy, and environment on performance. Accordingly, the remainder of this paper is divided into four sections. The next section develops hypotheses on the relationships between entrepreneurial strategy-making proceses, strategy content, environment, and performance based on previous theory and research. Then, we discuss the research methodology, how the hypotheses will be tested, and how key constructs will be operationalized. Results from testing our hypotheses and a discussion of the study's implications will be addressed in the final two sections.

THEORY DEVELOPMENT AND HYPOTHESES

This paper addresses two related issues: the first issue is an important antecedent to the second issue. First, to avoid premature prescriptions about the nature and effects of entrepreneurial strategy making, it is essential to assess the ESM construct and evaluate its independence with regard to other strategy-making constructs such as rational, adaptive, and participative processes (Hart, 1992; Mintzberg, 1973). The second issue relates to the need to use contingency and configurational approaches when exploring the ESM–performance relationship. Both theory and research suggest that the relationship may be dependent on such factors as a firm's competitive environment, its structure or its strategy. On the one hand, additional insight into the entrepreneurship–performance linkage may be

provided by exploring contingent relationships. For example, Covin and Slevin (1988) examined the moderating influence of organization structure on the entrepreneurship-performance relationship and found that an entrepreneurial top management style has a positive effect on organically structured firms. The environment as a contingent variable has also been examined. Small firms in a hostile environment were able to obtain higher financial performance when their strategic posture was entrepreneurial (Covin and Slevin, 1989). Firm performance was also found to be contingent on the strategies and competitive tactics of entrepreneurial firms (Covin, 1991; Covin and Adler, 1989; Zahra, 1986). On the other hand, prior research suggests that configurational approaches may be required to understand complex relationships between organizational or environmental variables and performance (Doty, Glick, and Huber, 1993; Miller, 1988). For example, in one of the few entrepreneurial studies to take a configurational approach to understanding the 'fit' among multiple contingent variables, Naman and Slevin (1993) found that firm performance was positively related to measures of fit among entrepreneurial style, organic structure, and mission strategy. In this study, therefore, the moderating effects of both competitive environments and business-level strategy will be explored, as well as the economic viability of configurations consisting of the multivariate alignment of the two aforementioned constructs with ESM.

The two subsections that follow describe the theory development and hypotheses that relate to the two phases of this research field study.

Phase 1: Defining entrepreneurial strategy making

Strategy making is an organization-level process that encompasses the range of activities firms engage in to formulate and enact their strategic mission and goals. These activities include analysis, planning, decision making, strategic management, and many aspects of the organization's culture, shared value system and corporate vision (Hart, 1992). Some researchers have suggested that there is a finite set of organizational processes from which strategic decisions evolve which take the form of patterns or gestalts that can be characterized and identified across organizations (e.g., Hart, 1992). In attempting to identify the variables relevant to these gestalts, many researchers have focused on delineating the dimensions of strategy making. Miller and Friesen (1978) identified 11 strategy-making process dimensions including, for example, adaptiveness, analysis, expertise, integration, innovation, and risk taking. In his study of structural influences on decision-making processes, Fredrickson (1986) proposed dimensions such as proactiveness, rationality, comprehensiveness, risk taking, and assertiveness. Lumpkin and Dess (1996) suggested that the dimensions of an entrepreneurial orientation consist of autonomy, innovativeness, risk taking, proactiveness, and competitive aggressiveness.

The concept of strategy making as a gestalt or pattern of dimensions is suggested by the idea of strategy-making modes. Miller (1987) claims the most frequently occurring strategy-making modes are rationality, interaction, and assertiveness. Rationality consists of the systematic, formal planning mode of strategy making, while interaction involves political, bargaining, and consensus-building activities. Assertive strategy making suggests a proactive, risk-seeking orientation. Mintzberg (1973) suggested entrepreneurial, adaptive, and planning modes of strategy making, later adding a bargaining mode (Mintzberg, 1983; Mintzberg, Raisinghani, and Theoret, 1976). Mintzberg's planning mode suggests strategy making via formal analysis, the adaptive mode involves adjusting strategies to meet stakeholder concerns, and the bargaining mode represents a political process among decision-makers with conflicting goals. The entrepreneurial mode refers to opportunity seeking, risk taking and decisive action catalyzed by a strong leader. A similar but more broadly conceived set of strategic types—prospectors, defenders, analyzers, and reactors—was proposed by Miles and Snow (1978).

Hart (1992) proposed an integrative framework of strategy-making processes that includes five 'distinctive modes of strategy making' (1992; 334): command, symbolic, rational, transactive, and generative. Although none of the modes suggested by Hart represent a pure entrepreneurial type, both the command and generative mode include elements of an entrepreneurial orientation. The command mode suggests the kind of opportunity seeking and assertive style suggested by Mintzberg's (1973) interpretation of an entrepre-

neurial strategy-making mode. The generative mode, where autonomous organization members experiment, take risks, and intrapreneur, is reminiscent of Miller and Friesen's dimensions of innovation and expertise, and Burgelman's (1983) notion of internal venturing via autonomous strategic initiative. Consistent with Hart's (1992) suggestion that his pure types can be combined, we suggest that entrepreneurial strategy making is a distinctive strategy-making mode that combines features of a command mode—bold, directive, opportunity-seeking style—with aspects of the generative mode—risk taking and experimentation. This is consistent with prior theory and research related to entrepreneurial strategy making and reflects the entrepreneurial orientation dimensions identified by Lumpkin and Dess (1996).

The preceding comments notwithstanding, there is still some uncertainty regarding whether entrepreneurial strategy making exists independent of other related organizational phenomena. This uncertainty arises from the fact that entrepreneurial-type behavior in organizations is often empirically examined or theoretically discussed as a contributing element in a larger, coherent organizational gestalt. Mintzberg (1973) describes the entrepreneurial strategy-making mode in terms of a host of theoretically coherent managerial, organizational and enviromental attributes. Similar treatments of entrepreneurial processes in organizations can be found in the writings of, for example, Miller (1988), Zahra (1993b), and Cornwall and Perlman (1990). Collectively, this literature suggests that an entrepreneurial strategy-making process may be subsumed by or parallel to other related processes which are difficult to disentangle in an organizational context. In the interests of resolving this issue, it is hypothesized:

Hypothesis 1: An entrepreneurial strategy-making process in an important strategy-making mode that an organization may exhibit.

Phase 2: Strategy and environment as moderators of the ESM–performance relationship

Drawing on the literature, two variables which would appear to have a strong moderating effect on the ESM–performance relationship are the environment and strategy. The environment poses an element of uncertainty to organizations (Lawrence and Lorsch, 1967; Duncan, 1972) which has been characterized along a number of dimensions such as unpredictability, dynamism and heterogeneity. Khandwalla (1987), for example, found that firms competing in high-tech or dynamic environments successfully coped with these difficult conditions through risk taking, innovative behavior, and proactive strategies and tactics. Miller and his colleagues have also investigated the relationship between the environment and entrepreneurial activities. Miller, Droge, and Toulouse (1988) found that environmental uncertainty was positively associated with strategic product innovation and Miller and Friesen (1982), in a study of 52 business firms, found that environmental dynamism and heterogeneity were positively associated with a firm's entrepreneurial posture and innovation. Similarly, in Miller's (1983) study, environmental heterogeneity, dynamism, and hostility were significantly and positively related to pioneering, innovation, and risk taking. This relationship was borne out by a variety of firms, including owner-managed firms, firms with high planning orientations, and firms characterized by decentralized, organic structures. Covin and his colleagues had similar findings but also explored performance implications. In these studies (Covin and Slevin, 1989; Zahra and Covin, 1995), firms which competed in hostile environments and adopted an entrepreneurial posture enjoyed superior performance. It can be argued that Zahra and Covin's definition of hostility as 'high levels of competitive intensity, a paucity of readily exploitable market opportunities, tremendous competitive-, market-, and/or product-related uncertainties, and a general vulnerability to influence from forces and elements external to the firm's external environment' (1995: 48) includes elements of uncertainty and heterogeneity.

Developing contingency hypotheses

Taken together, we contend that uncertain and multifaceted environments often necessitate a strong entrepreneurial orientation in strategy making. Such environments characteristically pose numerous strategic challenges for the occupying firms (Miller and Friesen, 1984; Zahra, 1993b). In particular, passive or nonaggressive behaviors in such environments often lead to deteriorating

performance because bases for competitive advantage, industry structure, and product performance standards are generally short lived or in a constant state of flux (Karagozoglu and Brown, 1988). Under such challenging circumstances, product–market superiority is typically achieved through competitive aggressiveness which distances the firm from its industry rivals (Covin and Covin, 1990). Therefore, we suggest:

Hypothesis 2: Environmental uncertainty will moderate the relationship between entrepreneurial strategy making and performance: among firms with a strong emphasis on entrepreneurial strategy making, greater environmental uncertainty will be associated with higher performance.

Hypothesis 3: Environmental heterogeneity will moderate the relationship between entrepreneurial strategy making and performance: among firms with a strong emphasis on entrepreneurial strategy making, greater environmental heterogeneity will be associated with higher performance.

Strategy is another important variable that has been found to moderate the ESM–performance relationship (e.g., Covin, 1991; Covin and Adler 1989). Two of the generic strategies identified by Porter (1980) include overall cost leadership and differentiation. The cost leadership strategy is the type pursued by Miles and Snow's (1978) defenders or Hambrick's (1985) 'efficient misers.' A cost leadership strategy suggests an internal orientation whereby a firm concentrates on product efficiencies and cost control in order to be the lowest cost producer relative to competitors. Cost savings are sometimes achieved by tactics such as minimizing expenditures on innovation and advertising and offering no-frills products to customers seeking cost savings rather than brand image. For cost leadership strategies, Porter suggests 'common organizational requirements' such as tight cost controls, structured sets of organizational responsibilities, incentives based on meeting strict quantitive targets, and frequent, detailed control reports (Porter, 1980: 40). Resources expended on activities such as experimentation, risk taking, and environmental scanning and monitoring may be detrimental to effectively implementing a low-cost strategy. Thus, an entrepreneurial approach to strategy making may work at cross-purposes with a cost leadership strategy, the result being that each negates the potential benefit of the other. Therefore, it is hypothesized:

Hypothesis 4: A cost leadership strategy will moderate the relationship between entrepreneurial strategy making and performance: among firms with a strong emphasis on entrepreneurial strategy making, lower performance will result from greater use of a cost leadership strategy.

Differentiation strategies (Porter, 1980) endeavor to offer customers unique products or services. Differentiators are similar to Miles and Snow's (1978) prospectors and are characterized by risk taking and a proactive external orientation. Miller (1986) identified two distinct types of differentiation: marketing and innovative. Marketing differentiators are characterized by 'salesmanship' and are similar to Miller and Friesen's (1984) mature giants or Kim and Lim's (1988) marketing differentiators. Marketing differentiation is characterized by extensive advertising, image management, and intensive marketing such as offering attractive features, convenience, and service guarantees. Miller (1992) describes innovative differentiators as 'pioneering', similar to adaptive and innovative-type firms found in previous research (Miller and Friesen, 1984). Innovative differentiation is characterized by creativity in product development, original applications of new technologies, up-to-date innovations, and quality design. Overall differentiation strategies appear to fit well in a context of entrepreneurial strategy making given the apparent similarity of purposes and means. Thus, we hypothesize:

Hypothesis 5: A marketing differentiation strategy will moderate the relationship between entrepreneurial strategy making and performance: among firms with a strong emphasis on entrepreneurial strategy making, higher performance will result from greater use of a marketing differentiation strategy.

Hypothesis 6: An innovative differentiation strategy will moderate the relationship between entrepreneurial strategy making and performance: among firms with a strong emphasis on

entrepreneurial strategy making, higher performance will result from greater use of an innovative differentiation strategy.

Developing configuration hypotheses

Several theorists researching contingent relationships have argued that multivariate configurations of strategy and environment with organizational processes may offer more useful or complete explanations of complex organizations than those provided by simple bivariate descriptions (Hambrick, 1985; Miller, 1986, 1987; Miller and Mintzberg, 1984). Organizational configurations or gestalts represent an elaboration or extension of contingency approaches into multivariate combinations that express complex interrelations which may have more predictive power than bivariate contingencies (Dess, Newport, and Rasheed, 1993). Miller (1988) investigated configurations by examining multiple interactions among variables and found the highest performance among organizations whose alignment of strategy, environment and structure was consistent with the normative contingency literature. High performance among firms exhibiting simple bivariate relationships was not supported in his study. In Hypotheses 2 and 3 above, the moderating role of environment is hypothesized. Hypotheses 4, 5, and 6 address the moderating role of strategy. However, the configuration perspective would suggest that firms which are configured consistently with normative theory on many constructs would enjoy superior performance to those which are consistent on only two constructs. Therefore, we hypothesize that firms which have both environments and their strategies consistent with the normative guidelines associated with entrepreneurial strategy making will enjoy higher performance. Thus:

Hypothesis 7a: Among firms with a strong emphasis on entrepreneurial strategy making, greater use of a cost leadership strategy in uncertain environments will be associated with lower performance.

Hypothesis 7b: Among firms with a strong emphasis on entrepreneurial strategy making, greater use of a cost leadership strategy in heterogeneous environments will be associated with lower performance.

Hypothesis 8a: Among firms with a strong emphasis on entrepreneurial strategy making, greater use of a marketing differentiation strategy in uncertain environments will be associated with higher performance.

Hypothesis 8b: Among firms with a strong emphasis on entrepreneurial strategy making, greater use of a marketing differentiation strategy in heterogeneous environments will be associated with higher performance.

Hypothesis 9a: Among firms with a strong emphasis on entrepreneurial strategy making, greater use of an innovative differentiation strategy in uncertain environments will be associated with higher performance.

Hypothesis 9b: Among firms with a strong emphasis on entrepreneurial strategy making, greater use of an innovative differentiation strategy in heterogeneous environments will be associated with higher performance.

RESEARCH METHOD

The first phase of the research consists of an exploratory factor analysis to determine the underlying dimensions of organizational strategy making. In the second phase, moderated regression analysis is used to test hypotheses concerning the peformance implications of relationships between generic strategies, environment and the strategy-making process.

Sample

The sample in this research is a judgement sample, a type of purposive sampling used in exploratory research in which the researcher selects a sample to meet specific criteria (Emory and Cooper, 1991; Kerlinger, 1986). The objective was to target a heterogeneous sample of nondiversified firms. Additionally, firms were selected in which a member of its top management team served on the Business Advisory Board of one of the two universities that sponsored the research. Since our research methodology required a high level of involvement, (i.e., on-site interviews with the CEO/President and completion of lengthy questionnaires by multiple members of each participating firm's top management team), this was a practical consideration.

Given the sampling criterion, the sample was heterogeneous regarding factors such as firm size, industry, and ownership. The participating firms included, for example, a small venture capital firm, a privately held engineering firm, a manufacturer of gardening equipment, and a medium-sized food distributor. Variation in the sample has the potential to increase the generalizability of the findings. However, the nonrandom nature of the sample limits the extent to which the findings are applicable to a given firm or industry.

The final sample consisted of firms located in two large metropolitan areas in the southwestern United States. Forty-two of 53 firms initially contacted by mail granted on-site interviews. Responses from 34 firms and 98 executives were included in the data analysis. However, since two of the firms had only single respondents, these two were dropped in order to obtain organization-level measures and help reduce common method variance. The final sample included 96 executives from 32 firms. Participating executives were also interviewed on a variety of issues including decision-making processes, the role of the CEO, and perceptions of industry conditions.

Research instrumentation

Entrepreneurial strategy making was measured using a modification of Hart's (1991) instrument. Hart's instrument was based on two dimensions that are 'central to conceptualizing and understanding strategy-making processes: (1) top management "intentionality," and (2) organizational actor "autonomy"' (1991: 104). He used these dimensions to develop four generic modes of strategy making. The instrument—which related to strategy-making practices and processes, CEO style, and general management orientation—consists of 25 items and associated 5-point Likert scales ranging from 1 'Strongly Disagree' to 5 'Strongly Agree.'

The environment portion of the survey used Miller's (1983) measures of dynamism, unpredictability and heterogeneity. The three dynamism and two unpredictability items used 7-point semantic differential-type scales anchored by descriptive phrases. Since unpredictability and dynamism are considered to be 'the key components of the overarching construct of uncertainty' (Miller, 1988: 291), the dynamism and unpredictability variables were combined into a composite index of environmental uncertainty. The heterogeneity portion consisted of three items (relating to customer buying habits, competition, and technological requirements) and used a 7-point scale. The use of managerial perceptions of environment has been supported by a number of studies based on the relevance of such perceptions to the formulation of strategy (Downey and Slocum, 1975), as well as on their accuracy with respect to objective measures of environmental conditions (Bourgeois, 1985; Dess and Keats, 1987).

The measure of Porter's generic strategies was conducted using a 7-item scale similar to the scale developed by Miller (1988). The scale asks questions regarding the importance of specific competitive tactics and includes two cost leadership items, two innovative differentiation items and three marketing differentiation items. The scale is a 5-point Likert-type scale and responses range from 1 'Not At All Important' to 5 'Extremely Important.'

Performance was measured by obtaining individual responses to three performance indices assessed with a 7-point Liket type scale ranging from 1 'Low Performer' to 7 'High Performer.' The three categories include sales growth, profitability and return on investment, and overall company performance. The questionnaire asked executives to 'assess your organization's performance OVER THE PAST FIVE YEARS relative to your competitors.' Prior research has indicated that subjective measures of performance can be consistent with objective measures, thus enhancing reliability and validity (Dess and Robinson, 1984; Venkatraman and Ramanujam, 1987).

Data analysis

For Phase 1, an exploratory factor analysis using the principal factors method with promax rotation was used to identify underlying dimensions of strategy-making and internal organizational processes. Factor analysis has the ability to produce descriptive summaries of data matrices, which aid in the detection of meaningful patterns among a given set of variables. In Phase 2, a moderated hierarchical regression analysis approach (Cohen and Cohen, 1983) was used. Moderation suggests that the relationship between two variables depends on a third variable. This technique is particularly useful for testing both two-way and

three-way interactions among the variables of interest.

Control variables

Both organizational size (Blau and Schoenherr, 1971) and industry type (Hitt and Tyler, 1991) may affect the complexity and style of strategy-making processes. In order to investigate potential confounding due to the possible influence of size and industry, these variables were used as controls in the analysis. The log of number of employees was used as a measure of firm size. The sample was also broadly classified into two industry categories: service and manufacturing (dummy coded as 1 and 0).

RESULTS

Phase 1 results

Phase 1 explores whether entrepreneurial strategy making is a distinct strategy-making process. The rotated principal factors solution is shown in Table 1. Using the Kaiser criterion (i.e., eigenvalues >1) seven significant factors emerged from the factor analysis. However, an examination of the slope of a plot of the characteristic roots in a scree test (Cattell, 1965) indicated a significant gap between factors four and five and a flattening trend thereafter. In addition, the four factors that explained the greatest amount of variance suggested a straightforward interpretation which led us to converge on the four-factor solution reported in Table 1.

Overall, 24 of the 25 strategy-making process variables had significant factor loadings (i.e., $\geq \pm 0.40$) on at least one of the four factors. Loadings such as these may be considered consistent with a conservative criterion. Both Hair *et al*. (1979) and Kim and Mueller (1978) consider factor loadings of 0.30 to be significant. An examination of the reference axis matrix provided support for the independence of the factors (Kim and Mueller, 1978), i.e., the degree of correlation among the factors was never larger than 0.31. Kaiser's Measure of Sampling Adequacy (MSA), which measures the extent to which variables are appropriate for factor analysis, was 0.78 overall, indicating a very satisfactory level (0.80 is considered 'meritorious' (Kaiser and Rice, 1974)).

The interpretation and labeling of the underlying dimensions of each factor were straightforward and intuitively appealing. The first factor—'Participative SMP'—includes variables such as 'business planning involves everyone in the organization' (V4) and 'consensus and cooperation across departments and functional areas' (V17 and V24) that are clearly indicative of a participative management style. Two variables with significant negative loadings—'suppression of conflict' (V15) and 'CEO insists on putting mark on everything' (V25)—may be considered the opposite of participation.

The second factor—'Entrepreneurial SMP'—includes variables that suggest strategy making characterized by innovation, experimentation, risk taking, and assertiveness. Variables loading significantly on this factor include 'very dynamic and entrepreneurial' (V14) which suggests an overall entrepreneurial orientation. The variable 'people are encouraged to identify new, innovative approaches or products' (V21) connotes innovativeness, and 'people are willing to take risks' (V12) indicates a risk-taking perspective. Risk taking and proactiveness are also inferred by the 'encouraged to experiment' (V21) variable and by a significant negative loading on the variable 'failure is to be avoided' (V20) which suggests a predisposition to enter markets early and assertively with new products or services. Another variable, 'people are treated the same regardless of rank or status' (V13), may indicate an orientation that encourages autonomy. Thus, we believe our results provide support for the proposition that an entrepreneurial orientation is a salient strategy-making process within organizations.

The third factor—'Adaptive SMP'—suggests an external orientation focused on adapting to customer needs, and responding to cues and feedback from the environment. Among the variables loading significantly on this factor are 'we spend time with customers and key stakeholders, listening to what they say' (V5), 'business and product planning involves customers and suppliers' (V6) and 'continually adapts by making appropriate changes based upon feedback' (V3). The importance of effective adapting is suggested by a concern with 'long-term potential' (V22) and by making decisions 'at the level where the most accurate information is available' (V10).

The fourth factor—'Simplistic SMP'—includes several variables that indicate a well-established

Table 1. Results of factor analysis of strategy-making process variables

Variable	Factor 1 Participative SMP	Factor 2 Entrepreneurial SMP	Factor 3 Adaptive SMP	Factor 4 Simplistic SMP
1. There is a clear blueprint for this organization's strategy that was set some time ago and has changed very little.	0.11	–0.11	–0.15	0.42[a]
2. Strategy, for this organization, is primarily provided by the president/chief executive and a few of his/her fellow top executives.	–0.42	–0.33	0.31	0.30
3. Our organization continually adapts by making appropriate changes in its strategy based upon feedback from the marketplace.	0.20	0.16	0.41	–0.18
4. Business planning in our organization is ongoing, involving everyone in the process to some degree.	0.81	–0.04	–0.02	–0.06
5. We spend as much time as possible with customers and other key stakeholders, listening to what they have to say about the organization.	0.06	0.02	0.44	0.05
6. Our business and product planning process involves customers, suppliers, and providers of funds.	–0.08	0.07	0.51	–0.16
7. Business and product planning in this organization is largely an internal process, seeking to contain the amount of information leaking to the outside.	–0.23	0.05	–0.04	0.36
8. There is a clear and consistent set of values in this organization that governs the way we do business.	–0.01	0.09	0.09	0.59
9. This organization has a characteristic 'management style' and a common set of management practices.	0.13	–0.24	0.24	0.51
10. Decisions in this organization are usually made at the level where the most accurate information is available.	0.19	0.10	0.44	0.21
11. Most people in this organization have input into the decisions that affect them.	0.50	0.07	0.11	0.04
12. Most people in this organization are willing to take risks.	–0.07	0.61	0.03	0.03
13. Most people in this organization are treated pretty much the same, regardless of rank or status.	–0.04	0.44	–0.22	0.49
14. People in this organization are very dynamic and entrepreneurial.	–0.11	0.70	0.26	–0.02
15. Conflict in this organization is often suppressed rather than dealt with openly.	–0.51	–0.13	–0.11	0.09
16. Specific work roles and expectations are clearly defined in this organization.	0.56	–0.27	0.18	–0.18
17. Cooperation and collaboration across functional roles are actively encouraged.	0.68	–0.03	0.09	0.01
18. People with unpopular views are given a fair hearing in this organization.	0.58	0.01	0.04	0.23
19. Working in this organization is like being part of a team.	0.43	0.27	0.01	0.28
20. Failure is something to be avoided in this organization at all cost.	–0.01	–0.40	0.02	0.02
21. People are encouraged to experiment in this organization so as to identify new, more innovative approaches or products.	0.05	0.43	0.41	–0.08
22. Long-term potential is valued over short-term performance in this organization.	–0.05	–0.04	0.49	0.15
23. The way we do things in this organization is well suited to the business we are in.	0.30	0.12	0.14	0.44
24. Decisions concerning business strategy are made on a consensus basis, involving people from many departments.	0.55	–0.07	–0.25	0.09

Table 1. Continued

Variable	Factor 1 Participative SMP	Factor 2 Entrepreneurial SMP	Factor 3 Adaptive SMP	Factor 4 Simplistic SMP
25. The chief executive of our organization insists on placing his/her mark on virtually every major initiative.	–0.43	–0.32	0.03	0.07
Eigenvalue	4.74	3.04	2.96	2.98
Percentage of common variance explained	47.0	30.4	29.6	29.8
Percentage of total variance explained	18.8	12.2	11.8	11.9

[a]Factors with loadings ≥±0.40 are underlined.

but limited strategy-making process (Miller, 1993). The idea of a 'characteristic management style and practices' (V9) and 'a blueprint set some time ago that has changed very little' (V1) corresponds to the emphasis on a routine way of conducting business or narrow focus on a dominant element of strategy. Managers using a simplistic approach develop a bias toward a 'one best way' style of doing business suggested by the variable 'clear and consistent set of values that governs' (V8). Another variable, 'the way we do things is well suited to the business we are in' (V23), suggests an entrenched approach to strategy making that focuses on traditional solutions and routines.

It might be noted that these four dimensions of the strategy-making process not only have face validity, but they are also consistent with four of the five key dimensions of top management style identified by Khandwalla (1976/77). Briefly, based on a well-researched review of the management literature, Khandwalla concluded that there are at least five independent dimensions of top management style: risk taking, technocracy, organicity, participation, and coercion. Khandwalla described the risk-taking dimension of top management style as reflecting elements similar to those identified with the 'Entrepreneurial SMP' factor. The technocracy dimension of top management style was described in terms similar to the current 'Simplistic SMP' factor (with a low technocracy emphasis being consistent with a high simplistic SMP score, and vice versa). The 'Adaptive SMP' factor resembles Khandwalla's characterization of the organic dimension of top management style. Finally, the construct of participation is clearly evident in both the current research results and Khandwalla's typology. (The coercion dimension of top management style has no direct analog in the current research.) Importantly, just as minimal overlap is observed among the four strategy-making process dimensions in the current research, Khandwalla's operationalization of his theoretically derived management style dimensions yielded scales with very low average intercorrelations. This fact corroborates the argument made above that the four empirically derived dimensions observed in the current research are likely to be independent constructs.

To further ensure that these factors represented valid constructs, additional criteria were applied to the statistical analysis. The unit of analysis in this research is the organization. Multiple respondents were used to ensure that responses closely represented organizational viewpoints. Since a construct such as 'SMP' should represent an organizational-level construct, it was decided, *a priori*, that only factors which exhibit a significant *F*-ratio in a comparison of between-firm vs. within-firm variance should be included in the analysis. Otherwise, it could be argued that the measurement of the SMP construct reflected as much of the 'individual differences' of the participating executives (e.g., experience, functional responsibility, education) as the construct itself. Prior theory and research provide support for the important influence of TMT characteristics on strategy and performance outcomes (Hambrick and Mason, 1984; Murray, 1989).

To test this, the responses of CEOs were compared with those of all other executives using one-way ANOVA. The intent was to determine if there was more agreement among executives within individual firms on the dimensions than that which existed *across* firms. If this were so,

Table 2. Results of one-way analysis of variance for dimensions of strategy-making processes

Construct	Source	d.f.	SS	MS	*F*	Prob.
Participative	Between	32	55.3	1.73	3.83	0.000
	Within	63	28.4	0.45		
Entrepreneurial	Between	32	43.4	1.36	2.67	0.000
	Within	63	32.0	0.51		
Adaptive	Between	32	36.0	1.12	1.96	0.011
	Within	63	36.0	0.57		
Simplistic	Between	32	33.8	1.05	1.65	0.046
	Within	63	40.4	0.64		

$N = 96$

it would be reasonable to assume that the measures of SMP were actually representing organizational constructs rather than individual differences. As indicated in Table 2, all four of the dimensions of internal organizational processes exhibit significant *F*-ratios suggesting that agreement among all other executives as a group was different than argeement among CEOs. The differences, therefore, can be ascribed to their place of work and not to the positions they hold. A similar principle was also used in the analysis of performance conducted in Phase 2: CEO responses were used to represent the entrepreneurial strategy-making variable and the responses of other executives were used for the performance, strategy, and environment measures. This arrangement serves to minimize common method variance.

Phase 2 results

In Phase 2, the moderating influence of strategy and environment on the entrepreneurial strategy making–performance relationship was tested. Factor scores for the ESM factor developed in Phase 1 were used in the regression analysis. Cronbach's alpha for the variables loading ($\geq \pm 0.40$) on the entrepreneurial SMP factor was 0.64. To minimize the potential effects of common method variance, the responses of CEOs were used to represent the entrepreneurial strategy-making variable and responses of other executives (averaged to obtain a firm level score for each firm) were used for strategy, environment, and performance variables. This resulted in a sample size of $N = 32$ for the regression analysis. Table 3 presents the descriptive statistics and Pearson correlations for the variables.

There are several results shown in the correlation matrix that warrant further discussion. First, the low correlations between entrepreneurial strat-

Table 3. Descriptive statistics and correlations[a]

Variables	Means	S.D.	1	2	3	4	5	6	7	8
1. Entrepreneurial strategy making	0.23	0.58								
2. Uncertainty	3.86	0.63	–0.07							
3. Heterogeneity	3.97	1.21	–0.03	0.18						
4. Cost leadership	3.55	0.86	–0.27	0.16	0.21					
5. Marketing differentiation	3.06	0.45	0.02	0.54	0.17	0.36				
6. Innovative differentiation	2.70	0.69	0.13	–0.01	0.00	–0.17	–0.00			
7. Sales growth	5.52	1.09	0.08	–0.22	–0.04	–0.09	–0.18	0.17		
8. Profitability/ROI	5.08	1.62	0.05	–0.03	0.05	–0.26	–0.07	0.27	0.40	
9. Overall performance	5.50	1.38	0.10	–0.14	0.09	–0.18	0.01	0.38	0.59	0.74

[a]$N = 32$. Correlations greater than 0.36 are significant at $p < 0.05$.

egy making and the three performance variables are consistent with prior research which has shown that, in the short run, the strength of the relationship between entrepreneurial behavior and firm performance tends to be weak (e.g., Covin, Slevin, and Schultz, 1994). While an entrepreneurial strategy-making process is often adopted in pursuit of competitive advantage, it is the fit between this strategic element and its organizational and environmental contexts which appears to promote performance, not the existence of such a process *per se* (Zahra, 1993b; Naman and Slevin, 1993).

Second, the correlation between cost leadership and profitability/ROI is negative, albeit insignificant ($r = -0.26$, $p > 0.05$). While one might expect that reductions in cost structure would promote short-term profitability, the current cost leadership scale assesses the presence of such a strategy rather than the *change* in a firm's cost structure. If the latter were the case, a positive correlation between this strategy scale and profitability might be expected. However, since the cost leadership scale assesses this strategic attribute rather than the change in this attribute, the negative correlation with profitability is not counterintuitive as it may initially appear.

Finally, Table 3 shows that a cost leadership strategy is positively and modestly correlated with a marketing differentiation strategy ($r = 0.36$, $p < 0.05$) and negatively but minimally correlated with an innovative differentiation strategy ($r = -0.17$, $p > 0.05$). What is particularly noteworthy here is the implication that cost leadership is not inherently antithetical to a differentiation strategy. This result is consistent with prior empirical research (e.g., Miller, 1988) and suggests the possibility that similar interaction effects between these strategies and entrepreneurial strategy making could theoretically emerge in the analyses of the current data.

To assess the reliability of the self-reported performance measures, archival data for a 5-year period from a subsample of 10 publicly held firms was analyzed. The correlation between secondary data for sales growth and the self-report sales growth data from our study was 0.754 ($p = 0.01$). Additionally, the correlations between the self-report measure of profitability/return on investment were significant for secondary data measures of return on sales ($r = 0.576$, $p = 0.08$) and approached significance for return on total assets ($r = 0.527$, $p = 0.12$) for the 5-year period. These results suggest that the self-report measures from the study converged with archival measures of performance.

A moderated hierarchial regression analysis was utilized following the method described by Cohen and Cohen (1983: 320–323). For both the two-way and three-way interactions, size and industry were entered into the regression equation first, then the ESM variable was entered, followed by the specific environment or strategy variable being analyzed. Then, a second regression equation was calculated using the interaction terms and the change in R^2 was evaluated.

The results of the two-way and three-way moderated hierarchial regression analysis are summarized in Tables 4 and 5. Hypotheses 2 and 3 stated that environmental uncertainty and heterogeneity would positively moderate the performance of firms emphasizing entrepreneurial strategy making. Table 4 shows that neither uncertainty nor heterogeneity has a statistically significant moderating effect and, in both cases, the direction of the effect is equivocal (i.e., it varies with the dependent variable being examined). Hypothesis 4 stated that a cost leadership strategy would be negatively related to the performance of entrepreneurial firms. The results indicate that cost leadership and entrepreneurial strategy making interactively impact only the overall company performance variable, but this interaction effect is opposite of the hypothesized direction. Hypotheses 5 and 6 predicted that entrepreneurially oriented firms using either marketing differentiation or innovative differentiation strategies would be positively related to firm performance. Table 4 indicates that the results of the moderated regression analysis are not significant for either type of differentiation strategy. Therefore, none of the hypotheses that predicted significant two-way interactions of strategy or environment with entrepreneurial strategy making was supported.

Table 5 reports results of the three-way interactions of strategy, environment, and entrepreneurial strategy making. Hypothesis 7 stated that peformance would be lower when a firm with an entrepreneurial orientation used a cost leadership strategy in an uncertain or heterogeneous environment. Table 5 indicates that there is a significant three-way interaction between entrepreneurial strategy making, cost leadership, and uncertainty with two of the performance variables, but in the

Table 4. Results of moderated regression analysis: Two-way[a]

	Sales growth		Profitability/ROI		Overall performance	
Variables	*b*	R^2	*b*	R^2	*b*	R^2
Size	–0.17		–0.19		–0.01	
Industry	–0.04		0.39		0.05	
Entrepreneurship	–0.86		3.55		0.03	
Uncertainty	–0.28	0.05	0.13	0.04	–0.26	0.02
Entrepreneurship × Uncertainty	0.26	0.05	–0.94	0.08	0.02	0.02
Size	–0.22		–0.35		–0.15	
Industry	–0.18		0.54		0.13	
Entrepreneurship	–1.05		4.63		2.97	
Heterogeneity	–0.19	0.05	0.06	0.06	0.12	0.02
Entrepreneurship × Heterogeneity	0.27	0.06	–1.01	0.15	–0.60	0.06
Size	–0.25		–0.15		–0.02	
Industry	–0.11		0.50		0.40	
Entrepreneurship	–3.50		–2.69		–8.65	
Cost leadership	–0.42	0.03	–0.64	0.09	–0.95	0.04
Entrepreneurship × Cost leadership	0.99	0.10	0.68	0.11	2.33*	0.20
Size	–0.16		–0.27		–0.12	
Industry	–0.06		0.51		0.16	
Entrepreneurship	–2.27		1.25		–1.60	
Marketing differentiation	–0.57	0.03	0.09	0.06	–0.20	0.02
Entrepreneurship × Marketing differentiation	0.79	0.05	–0.42	0.06	0.58	0.02
Size	–0.08		–0.02		–0.13	
Industry	–0.13		0.66		0.39	
Entrepreneurship	–1.03		–2.18		–2.91	
Innovative differentiation	0.25	0.08	0.60	0.18	1.08	0.21
Entrepreneurship × Innovative differentiation	0.44	0.10	0.74	0.20	1.16	0.27

[a]Regression weights shown are unstandardized coefficients obtained at the final step.
$N = 32$. $*p < 0.05$.

opposite direction from what was hypothesized. The interaction of cost leadership and heterogeneity was positive, but not statistically significant. Therefore Hypothesis 7 is not supported.

Hypothesis 8 predicted that entrepreneurial firms pursuing a marketing differentiation strategy in an uncertain or heterogeneous environment would enjoy higher performance. Table 5 indicates strong support for this contention. The use of a marketing differentiation strategy in a heterogeneous environment is statistically significant and positive for both the profitability/ROI and overall company performance measures. Higher performance is also indicated for marketing differentiation in an uncertain environment with profitability/ROI as the dependent variable. Hypothesis 9 stated that entrepreneurial firms following an innovative differentiation strategy would also be associated with higher performance. This was supported for firms in an uncertain environment (for sales growth and overall performance), as well as for innovative differentiators in a heterogeneous environment (for overall performance).

The results reported here indicate a general lack of support for the hypotheses that predicted contingent relationships based on two-way interactions. However, configurations of strategy and environment with entrepreneurial strategy

Table 5. Results of moderated regression analysis: Three-way[a,b]

	Sales growth		Profitability/ROI		Overall performance	
Variables	*b*	R^2	*b*	R^2	*b*	R^2
Size	0.25		0.22		0.30	
Industry	0.10		0.49		0.23	
Entrepreneurship	27.76		39.89		21.04	
Cost leadership	–1.67		1.00		–0.99	
Uncertainty	–0.74	0.05	2.76	0.08	0.43	0.05
Entrepreneurship × Cost × Uncertainty	2.33†	0.31	2.67†	0.28	1.85	0.33
Size	–0.07		–0.27		–0.08	
Industry	0.11		0.36		–0.02	
Entrepreneurship	14.69		20.05		21.16	
Cost leadership	1.96		0.99		0.58	
Heterogeneity	2.13	0.05	1.16	0.09	1.02	0.05
Entrepreneurship × Cost × Heterogeneity	1.19	0.24	0.95	0.17	1.76	0.32
Size	–0.19		–0.19		–0.05	
Industry	0.09		0.70		0.34	
Entrepreneurship	41.08		94.95		52.59	
Marketing differentiation	1.31		3.17		0.66	
Uncertainty	0.78	0.05	2.90	0.05	0.76	0.02
Entrepreneurship × Marketing differentiation × Uncertainty	3.46	0.15	7.48*	0.36	4.42	0.18
Size	–0.36		–0.68		–0.49	
Industry	–0.21		–0.02		–0.42	
Entrepreneurship	26.53		70.78		77.74	
Marketing differentiation	0.91		13.57		13.50	
Heterogeneity	0.41	0.05	8.24	0.06	8.38	0.02
Entrepreneurship × Marketing differentiation × Heterogeneity	2.35	0.21	4.74*	0.40	5.69**	0.43
Size	–0.05		–0.01		–0.04	
Industry	0.15		0.55		0.47	
Entrepreneurship	40.61		27.34		43.73	
Innovative differentiation	5.96		6.36		14.64	
Uncertainty	4.36	0.11	5.14	0.13	10.78	0.17
Entrepreneurship × Innovative differentiation × Uncertainty	4.09†	0.30	2.49	0.24	4.20†	0.44
Size	–0.08		–0.19		–0.23	
Industry	0.14		0.62		0.02	
Entrepreneurship	–15.91		17.34		30.21	
Innovative differentiation	0.27		2.54		2.06	
Heterogeneity	–0.15	0.11	1.12	0.18	0.60	0.21
Entrepreneurship × Innovative differentiation × Heterogeneity	–0.86	0.19	0.99	0.36	2.23†	0.40

[a]Two-way interactions included in the regression analysis are not shown here in order to save space.
[b]Regression weights shown are unstandardized coefficients obtained at the final step.
$N = 32$. †$p < 0.10$; *$p < 0.05$; **$p < 0.01$

making—the three-way interactions—were supported for both marketing and inovative differentiation strategies. There was also statistical significance (two out of six equations) for the three-way interactions associated with cost leadership, but in the direction *opposite* of that hypothesized.

DISCUSSION

This study endeavored to examine the relationship between entrepreneurial strategy making and performance. Some theorists have argued that entrepreneurship will be positively associated with performance (e.g., Covin and Slevin, 1991), while others have claimed that an entrepreneurial approach to strategy making will detract from performance (e.g., Hart, 1992). We suggested that an essential key to understanding the ESM–performance relationship is to analyze the context in which it occurs. In Phase 1, we predicted that ESM would emerge as a salient strategy-making mode that organizations utilize. In Phase 2, we hypothesized that the relationship between ESM and performance is contingent on strategic and environmental factors, and may best be explained by investigating complex configurations.

The present study provides strong support for Phase 1 and somewhat mixed support for Phase 2. In Phase 1, the entrepreneurial strategy-making process which was derived through factor analysis was found to be consistent with the underlying concepts of decision making and behavior that have been frequently suggested in the entrepreneurial process literature (Covin and Slevin, 1991; Lumpkin and Dess, 1996; Miller, 1983; Mintzberg, 1973). Also, the significant one-way *F*-tests, as earlier stated, provide support for entrepreneurial strategy making as an organization-level construct. The entrepreneurial SMP factor was also independent of the three other SMP factors in the analysis: participativeness, adaptiveness, and simplicity. We believe that this finding has theoretical implications in that it suggests, for example, that an entrepreneurial approach to strategy making may exist independently of the level of participation or degree of adaptiveness that a firm may use in its strategy-making process. Thus, unlike Hart (1992) or Bourgeois and Brodwin (1984), who maintain that entrepreneurial dimensions are subsumed by other strategy-making modes, our findings suggest that entrepreneurial strategy making represents a distinct strategy-making process characterized by experimentation, innovativeness, risk taking, and proactive assertiveness.

In Phase 2, we found that entrepreneurial strategy making was most strongly associated with performance when it was combined with *both* the appropriate strategy and environmental conditions. This finding is consistent with Miller (1988) and others who suggest a configurational framework—as opposed to a contingency approach—for the purpose of further developing normative and descriptive theory. Lenz (1980), for example, in a study of savings and loan associations concluded that 'neither environment, strategy nor organizational structure is sufficient to explain differences in performance. . . organizational performance is determined, in part, by the particular coalignment administrators are able to achieve' (1980: 220–221). The findings reported here support the notion that multivariate configurations may be better predictors of firm performance.

Contrary to our hypotheses, however, entrepreneurial strategy making, when matched with high environmental uncertainty as well as a low cost strategy, was also associated with high performance. One might interpret this finding as suggesting that, even when competing on the basis of cost, it may be advisable to proactively monitor the environment, take some risks, and innovate. Perhaps entrepreneurial processes serve as a means of encouraging the use of state-of-the-art process technologies that further lower costs and enhance quality. Such is the nature of several recent practices which have become rather common among many leading-edge organizations. Under names such as 'core process redesign' 'business process improvement,' and 'reengineering' (Hammer and Champy, 1993), such activities can be innovative, proactive, and serve to dramatically enhance a firm's cost position relative to its competitors. Our finding, which suggests that an entrepreneurial strategy-making process is associated with higher performance when accompanied by a cost leadership strategy, is also consistent with Hamel and Prahalad's (1989) observation that successful firms 'build layers of advantage' by combining distinct bases for competitive superiority in their strategic initiatives. A cost leadership strategy and an entrepreneurial strategy-making process are, arguably, dis-

tinct bases on which competitive advantage is sought (albeit at the strategy content vs. the strategy-making process levels). As argued by Miller and Friesen (1984), Covin and Slevin (1989), Lumpkin and Dess (1996), and many others, firms often adopt an entrepreneurial posture in their strategy-making processes as a means to achieve competitive advantage through proactive strategic repositioning and product/market revitalization efforts. A cost leadership strategy is also widely regarded as a potentially effective yet independent (of entrepreneurial posture) means to achieve competitive advantage (Porter, 1980). Importantly, the pursuit of a cost leadership strategy is not inimical to entrepreneurial strategy making. Therefore, companies that exhibit both strategic characteristics are positioned to leverage multiple layers of advantage. This may explain why firms with cost leadership strategies *and* entrepreneurial strategy-making processes excelled in the current sample.

In contrast, it might be argued that differentiation strategies and entrepreneurial strategy-making processes are more congruent strategic constructs. For example, in his study of the competitive strategies of firms with entrepreneurial vs. conservative strategic postures (where strategic posture was operationalized along the same innovation, risk-taking and proactiveness dimensions used in the current study to define an entrepreneurial strategy-making process), Covin (1991) found that differentiation tactics like high price and high product quality were most pronounced among the entrepreneurial firms. This observed congruence between differentiation and entrepreneurial posture suggests that both strategic elements may contribute to a singular basis of competitive advantage. If these two strategic constructs do, in fact, contribute to a singular basis of competitive advantage, superior performance would not be expected to result from the combinations of these factors as multiple bases of advantage will not be realized. In other words, firms with high scores on both factors would not be expected to significantly outperform firms with high scores on one or the other factor. Consistent with this possibility, differentiation strategies and an entrepreneurial strategy-making process did not interact to predict firm performance in the two-way interactions among the sample firms.

It is interesting to speculate about why so many three-way interaction effects were found to be significant while so many of the two-way effects were not. One obvious rationale is that configurations of attributes—that is, organizational gestalts—are more predictive of firm success because they, by definition, take into account more of the variables that can affect firm success. However, this explanation does not consider the specific variables examined as part of the three-way interaction effects in the current research. Moreover, one might conclude from the preceding explanation that all three-way interactions among variables that are critical contingencies within an organizational system context should, therefore, be more predictive of firm success than any two-way combinations of these same variables. But we know that this will not always be the case.

The presence of so many significant three-way interaction effects among the current study's variables, including similar 'direction' effects for disparate competitive strategy variables, may be at least partially attributable to the fact that high scores on all of the competitive strategy variables (i.e., the differentiation and cost leadership variables) represent, in essence, the presence of a basis for competitive advantage by the firm (Porter, 1980). Such a competitive advantage presence would, arguably, be most beneficial to a firm when (1) the environment is challenging such that a preponderance of the firms operating therein would not necessarily be expected to excel and (2) the firm is inclined to actively exploit this basis of advantage as demonstrated by the existence of an aggressive strategic posture. The first condition would be met among firms high on the environmental uncertainty and heterogeneity scales, and the second condition would be met by firms with entrepreneurial strategy-making processes. In other words, high scores on all three elements of the observed three-way interaction terms can be theoretically defended as the optimal positions to promote firm performance. This is, in fact, what our results show because any positive and significant betas associated with three-way interaction terms imply that high scores across all three contributing variables are positively associated with the dependent (performance) variable in question. The preceding argument may also partially explain why so many of the two-way interaction effects, which do not reflect a competitive strategy element, were not significant.

These findings clearly suggest that to further

understand the relationships between ESM and organizational and environmental factors, future research should investigate the processes by which entrepreneurial behavior enhances a firm's competitive position and performance. Such research may involve, for example, more fine-grained (Harrigan, 1983) methodologies (i.e., intensive field research, case studies) than the present study. Along these lines, Burgelman (1983) explored the implications of formal (induced) and informal (autonomous) entrepreneurial activities. In his study of six internal corporate venturing projects in a large high-tech firm, he found that the 'motor for corporate entrepreneurship resides in the autonomous strategic initiatives of individuals at the operational levels in the organization' (1983: 241). Such fine-grained methodologies could also provide insight into the role of culture and, in the context of the resource-based model of the firm, complex social processes (e.g., Barney, 1992) associated with the elements of an entrepreneurial posture.

Another limitation, as well as another opportunity for future research, relates to our conceptualization of strategy. As suggested earlier, entrepreneurial strategy making is likely to lead to revised or extended concepts of low cost leadership. Entrepreneurially oriented firms may address cost reduction via aggressive technology policy (Zahra and Covin, 1993) or radical innovativeness (Hage, 1980) aimed at reengineering processes and systems to achieve a low-cost advantage. It is well known that such processes can improve differentiation strategies as well in terms of quality and quick response. This serves to further support a growing literature that provides both strong theoretical rationale (Hill, 1988; Jones and Butler, 1988) as well as empirical support (White, 1986; Kim and Lim, 1988) for combining Porter's (1980) generic strategies. Thus, future research could investigate new approaches to configuring sources of competitive advantage.

A limitation of the present research is its cross-sectional design. Future research needs to investigate the organizational and performance implications of entrepreneurial strategy making over time. The present study, of course, implicitly assumes that the culture, processes, and structures associated with an ESM are enduring and stable over time. However, investigating how such behavior evolves over time and its relationship to environment, strategy, structure, processes, and performance necessitates longitudinal analysis. One of the few studies to have addressed this issue is Zahra and Covin's (1995) research, consisting of three different data bases, which found that the relationship between ESM and performance strengthens over time.

Finally, many would agree that research exploring the relationship between entrepreneurial activities and performance is very timely given the competitive conditions faced by firms of all sizes in today's economy. The present study has used a factor analytic approach to identify the dimensionality and independence of entrepreneurial strategy making and suggests the need for a configurational approach when modeling this construct. Further research is needed to refine measures, explore the underlying processes associated with entrepreneurial behavior—ideally with longitudinal designs—and recognize the multidimensional and configurational nature of entrepreneurial strategy making and its outcomes.

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