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PROFILES OF MANAGERIAL ACTIVITIES IN SMALL FIRMS

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This paper addresses the contingency issues of managerial activities and reports the results of a study that configures such activities in small firms. In a survey of CEOs and top executives, data on planning, organizing, and controlling activities as well as entrepreneurial orientation and environmental turbulence were collected and used in the development of a taxonomy. Findings demonstrate that (1) small firms can be classified based on perceived differences in strategy, structure, and the environments they face, and (2) they display managerial and structural consistency when faced with similar contextual situations. The taxonomy developed in this study suggests that four distinct configurations describe the managerial profiles among small firms. Each profile and its corresponding contingency characteristics are discussed and managerial and research implications elaborated.

INTRODUCTION

There has been a tendency to study small business management in terms of planning, organizing, staffing, and controlling activities. The majority of studies seems dedicated to planning, including information gathering and processing, (e.g., Bracker and Pearson, 1985; Cragg and King, 1988; Chrisman and Leslie, 1989; Chrisman *et al.*, 1985; Fann and Smeltzer, 1989; Gable and Topol, 1987; Nahavandi and Chesteen, 1988; Robinson and Pearce, 1984; Schrader, Mulford, and Blackburn, 1989), organizing and staffing (Gatewood and Feild, 1987; Olson, 1987; Smith and Gannon, 1987), and control activities of management (Boag, 1987; Pearson, Bracker, and White, 1990; Riggs and Bracker, 1986; Rinholm and Boag, 1987).

While such studies provide detailed knowledge of individual management functions, they ignore other realities of managerial process—such as task environment, organizational configuration, and managerial characteristics—by artificially focusing attention on one or two functions, sometimes in association with a firm's performance. D'Amboise and Muldowney (1988) draw attention to the weaknesses associated with the studies of small business success and growth and recommend that future research uses a greater integrative approach to delineate detailed, holistic configurations. We maintain that studies of small business need not be limited to attributes of its planning, organizing, and controlling functions. We see a need to study a firm's managerial functions under specific situations and the structural adjustments made under varying growth conditions. In the quest to find a middle ground between the status quo of small business research and a grand general theory, the authors further recommend that small business studies consider a wide variety of environmental, organizational, and managerial attributes that potentially contribute to a firm's success and growth. It is hoped that such studies will eventually result in the development of mid-range theories (Pinder and Moore, 1979), shed light on the

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diversity of managerial approaches in small business, and contribute to further understanding of small business management practices under a variety of situations.

Consistent with the recommendation made by D'Amboise and Muldowney (1988), a growing number of researchers (e.g., Covin and Slevin, 1989; Fombrun and Wally, 1989; Miller and Toulouse, 1986a, 1986b; Pearce, Robbins, and Robinson, 1987; Robinson and Pearce, 1985) have attempted to examine interactions among attributes representing managerial orientation, task environment and managerial functions (planning, organizing, controlling) in small firms. However, these studies have focused primarily on a subset of possible attributes and none directly confronted the contingency issues raised by D'Amboise and Muldowney.

The present study is an attempt to address those issues articulated by D'Amboise and Muldowney (1988) and follow the configurational approach recommended in the genre. Specifically, the purpose of the current study is twofold:

1. to investigate the proposition, held by configurational theorists, that managerial activities (e.g., information gathering, information processing, organizing, controlling) applied by presidents and CEOs are distinctly and significantly different across small firms; and
2. to investigate certain contingency factors—such as task environment, entrepreneurial orientation, and past growth history of the firm—reported by other researchers and reflected in the literature review, that predominantly influence the choice of managerial activities in small firms.

The study begins with a literature review and the underlying rationale for the investigation. This is followed by a discusison of the research methodology—including measurement description, sampling technique, and data collection—and data analysis. The paper concludes with the examination and interpretation of results and their implications for small business management.

LITERATURE REVIEW

Much has been written on the determinants of success in small firms. Undoubtedly, a key contributor to the continued success and expansion of small firms is managerial activities pursued by the CEOs and presidents (Ackoff, 1970; Mintzberg, 1973; Miller and Friesen, 1978). These activities typically reveal the CEO's predisposition toward information gathering, information processing, and the use of elaborate planning and control systems.

There are several reasons why it would be appropriate to investigate the managerial activities of CEOs in small firms. First, it is in agreement with the 'upper echelons perspective' advanced by organizational theorists that a firm's strategic, structural choices and performance levels are influenced by top managers' characteristics (Hambrick and Mason, 1984; Hambrick, 1987; Norburn and Birley, 1988). Second, it is consistent with the trend in entrepreneurship research that focuses on the CEO's *behaviors* and *activities* instead of his or her personal characteristics (Gartner, 1988; Stevenson and Jarillo, 1990). Third, empirical evidence suggests that the CEO's choice of managerial activities is strongly related to his or her personality (Miller and Dröge, 1986; Miller and Toulouse, 1986a, 1986b). Therefore, the use of managerial activities as a predictor meets the requirement of those researchers who identify entrepreneurship with the CEO's dominant organizational personality (e.g., Collins and Moore, 1970; Shapero, 1975). Fourth, managerial activities have a greater applicability in understanding of *managerial skills* relevant to the success of small firms (D'Amboise and Muldowney, 1988).

Managerial activities have been studied by a number of authors, primarily in larger organizational settings (e.g., Burns and Stalker, 1961; Galbraith, 1973; Khandwalla, 1977; Lawrence and Lorsch, 1967; Mintzberg, 1979; Woodward, 1965). They have been conceptualized in terms of structural/control aspects (e.g., centralization, formalization, specialization, cost control) and informational/decision-making aspects (e.g., scanning, analyzing, forecasting, collaborating). The conceptualization has resulted in a number of typologies intended to cover various organizations. Mintzberg's (1979) five structural configurations—*simple structure*, *machine bureaucracy*, *professional bureaucracy*, *divisionalized form*, and *adhocracy*—is a good example of this genre.

However, most proposed typologies characterize small, developing firms as simply struc-

tured, high centralized organizations with little formalization. Yet, existing empirical evidence demonstrates that managerial activities in small firms may possess greater degrees of complexity than commonly believed (Burns and Stalker, 1961; Carter and Williams, 1957; Hage and Aiken, 1970; Lawrence and Lorsch, 1967; Litwak, 1961; Thompson, 1961; Wilson, 1966). Existing research indicates that small firm managers differ from their counterparts in larger organizations in use of information (Fann and Smeltzer, 1989; Smeltzer, Fann, and Nikoliasen, 1988), reliance on outside consultants (Bracker and Pearson, 1985; Chrisman and Leslie, 1989; Chrisman *et al.*, 1985; Nahavandi and Chesteen, 1988), planning activities (Cragg and King, 1988; Gable and Topol, 1987; Pearce, Robbins, and Robinson, 1987; Schrader *et al.*, 1989), comprehensive decision making (Smith *et al.*, 1988), staffing and organizing (Gatewood and Feild, 1987; Olson, 1987; Smith and Gannon, 1987), and managing and controlling operations (Boag, 1987; Pearson, Bracker, and White, 1990; Riggs and Bracker, 1986; Rinholm and Boag, 1987).

Some empirical studies have looked at managerial activities in configurational settings where multivariate relations between what managers do and a number of contingencies (situational factors) are evaluated. Miller and his colleagues found significant multivariate relations between managerial activities and environmental context, strategy content, and the financial aspects of firms' growth (Miller and Dröge, 1986; Miller, Dröge and Toulouse, 1988; Miller and Toulouse, 1986a, 1986b). Similarly, Covin and Slevin (1989) revealed significant multivariate relationships between bureaucratic and organic managerial activities, firms' strategic posture, and performance under various environmental conditions. Further, Fombrun and Wally (1989) demonstrated that managerial activities in high-growth firms vary systematically by firms' strategic orientation and the degree of product diversity.

Although multivariate, the above studies predominantly have investigated directional relationships between managerial activities and firms' performance measures moderated by subsets of organizational/environmental influences. The current study, however, will extend the body of research further by identifying and evaluating patterns of relations among managerial activities, organization structure, and environment, using taxonomic procedures. As recognized and recommended by Hambrick (1984), McKelvey (1975), Miller and Friesen (1984), and Pinder and Moore (1979), developing a taxonomy would allow natural configurations to surface among the strategy, structure, and environment of small firms and crystallize important differences among types of firms. In addition, as suggested by D'Amboise and Muldowney (1988), developing a taxonomy would further the understanding of contingency relations among a firm's task environment, entrepreneurial orientation, and growth variables.

Patterned after studies by Miller and Friesen (1978, 1980), Gartner, Mitchell, and Vesper (1989), and Hambrick (1983), the current study pertains to the taxonomy development in small firms. As such, the research questions can be framed in two basic hypotheses concerning (1) the perceived common characteristics of small firms that survive and adapt to their environments and (2) the configuration of these characteristics that leads to consistency (harmony) with the environments.

Hypothesis 1: Small firms that survive and adapt to the rigors of their environments display similar managerial and structural characteristics.

Hypothesis 2: Small firms that survive their environments are driven toward a configuration that dictates consistency between their managerial and structural characteristics and the environmental contexts.

METHODOLOGY

In this section, construct conceptualization, variable specification, sampling, and data collection will be discussed.

Managerial activities

This construct is broadly defined to encompass *planning*, *organizing*, and *controlling* activities of executives in small firms. Planning is characterized by *information gathering* and *information processing*. The information gathering (defined in terms of *scanning* and *futurity*) and information processing (defined in terms of *analysis* and

interaction with others) were operationalized using definitions in Miller (1987a, 1987b). These variables have been successfully used by other researchers to delineate strategy making in organizations. Research by Miller (1987a, 1987b) and Miller and Toulouse (1986a, 1986b) found evidence of interdependence between scanning, analysis, futurity, and structural dimensions of the firm. Measures of scanning, futurity, analysis, and interaction were adopted from Miller (1987a, 1987b) and Miller and Dröge (1986).

Organizing is described in terms of *decentralization* and *specialization*. As small firms grow, their CEOs face the challenges of large-scale operations and administrative complexity. In response, these CEOs depart from simple and highly centralized structures—where decisions are made more informally, intuitively, and individually—to more decentralized, specialized, and interactive structures. Decentralization and specialization have been empirically researched and their explanatory richness established within the small firm's domain (Miller, 1987a, 1987b, 1988a; Miller and Dröge, 1986; Miller *et al.*, 1988; Miller and Toulouse, 1986a, 1986b).

Finally, the concept of control is represented by two variables: *formality* and *cost control*. Miller and Dröge (1986) and Miller *et al.* (1988) found these variables explanatory in the cost control mechanisms of small firms. The measures of decentralization, specialization, formality, and control were modeled after similar scales in Miller and Dröge (1986).

Contingency constructs

As far as small firms are concerned, the three contingency factors—*entrepreneurial orientation*, *environmental turbulence*, and *past growth performance*—seem to influence managerial activities the most. A firm's entrepreneurial orientation dictates its competitive orientation. Some authors have attributed the firm's entrepreneurial tendency to the personality and sociocultural characteristics of its CEO or top managers (Collins and Moore, 1970; Kets de Vries, 1977; Miller and Friesen, 1983; Shapero, 1975; Toulouse, 1980). Others have referred to the environmental and structural features of the firm as the force behind entrepreneurial activities (Burns and Stalker, 1961; Hage and Aiken, 1970; V. Thompson, 1961; J. Thompson, 1967). Still, others have emphasized the firm's decision-making and strategy factors as the main influence behind its entrepreneurship (Ackoff, 1970; Mintzberg, 1973; Miller and Friesen, 1978). Recent empirical studies by Miller (1987a) and Miller *et al.* (1988) suggest that a firm's proactive, innovative, and risk-taking tendencies can be strongly associated with its managerial activities. Likewise, McKee *et al.* (1989) found systematic associations between certain managerial activities and the Miles and Snow (1978) typology of the firm.

In the current study, entrepreneurial orientation is defined as the firm's degree of *proactiveness* (aggressiveness) in its chosen product-market unit (PMU) and its willingness to *innovate* and create new offerings. This definition is consistent with the conceptual schemes developed by Miller and Friesen (1984) and supported empirically by Morris and Paul (1987), Miller (1988b), Covin and Slevin (1989, 1990), Davis, Morris, and Allen (1991), Karagozoglu and Brown (1988), and Miles and Arnold (1991). The measures of proactiveness and innovativeness used in the present study were taken from Miller (1983) and Miller and Friesen (1982).

Of critical importance to the survival and continued growth of small firms is the degree of *environmental turbulence*. Because of their size, small firms are presumed to be rather sensitive to changes in their operating environments. Although their small size makes them flexible and responsive to environmental changes, small firms are also challenged by unfavorable and hostile environments. Keats and Hitt (1988) found that environmental instability (turbulence) strongly affects the firm's structure. That is, firms that operate in unstable, and thus uncertain, environments develop a simpler structure.

The environmental turbulence construct is defined in terms of *dynamism*: unpredictable environmental changes; *hostility*: environmental threats to the firm's vitality; and *heterogeneity*: diversity of the firm's environments. Environmental hostility has been found to be an effective explanatory variable in studying entrepreneurial orientation (Covin and Slevin, 1989, 1990; Miller, 1983), innovativeness (Miller and Friesen, 1984), organizational structure, and financial performance (Covin and Slevin, 1989, 1990). Likewise, environmental dynamism and diversity have been reported to influence both strategy and structure

(Miller,1987a, 1987b, 1988a; Miller and Friesen, 1983). Dynamism, hostility, and heterogeneity were measured in this study using scales from Miller (1983) and Miller and Friesen (1982).

The role of a firm's past growth performance as an important contextual construct has been studied and reported in small business literature (Fombrun and Wally, 1989; Hambrick and Crozier, 1985). Greiner (1972) reported the importance of employment growth in the development of participatory decision making in organizations. Hambrick and Crozier (1985) found that successful, high-growth companies are more likely to use decentralized, participatory task teams and 'flat organizational structures'.

Further, successful firms with continued growth display increasing needs for specialized personnel and decentralized structure. Hambrick and Crozier (1985) observed that growing firms require substantive expertise in many areas and the most successful firms secure the needed skills for expansion before they get there. Clifford (1973) and Strauss (1974) noted that jobs in growing firms can quickly outgrow current employee skill levels and thus such firms need to hire technical staff to meet the challenge. And Hofer and Charan (1984) and Olson (1987) recommended that top management in growing firms need to develop or hire personnel with specialized skills, decentralize organizational structure, and learn to trust subordinates' abilities.

In addition to the development of more complex, decentralized structure and increased specialization, growing firms must pay greater attention to the methods of coordination, both formal and informal. Hambrick and Crozier (1985) pointed out that decision-making 'logjams', developed in high growth situations, entail more formal planning, control, and compensation systems. High growth also brings about increasing needs for resources. This requires greater availability of critical resources within the organization as well as adequate systems for allocating them. Hambrick and Crozier (1985) observed that successful growing firms devise and coordinate systems to tap critical resources such as big company expertise on boards of directors.

As the above research indicates, past growth seems to influence firm's managerial activities. Thus, decisions on centralization, formalization, specialization, coordination, and control are more likely to be made in light of firms' continued growth. Growth was measured by using the actual change in (1) the number of employees over a 5-year period and (2) the dollar sales volume over a 4-year span. Absolute changes in employment and sales volume were deemed to be better indicators of growth than relative measures (percentages) since proportions exhibit deceptively large amount of increases relative to low magnitudes of change among very small firms. Further, employment and sales were chosen over profit measures because of the nonuniformity of accounting procedures, heavy reinvestment, and the pay-scale of owner-managers in privately held, small firms (Dess and Robinson, 1984; Cooper, Woo, and Dunkleberg, 1989).

The data

The study data were collected as part of a longitudinal investigation of firms in a large midwestern state. The data collection took place in the fall of 1990. The sampling frame was drawn from a population of small established firms operating within the state and with the following characteristics: (1) ownership—private; (2) age—more than 3 years; (3) annual sales—between $500,000 and $500,000,000; (4) number of employees—between 10 and 500; and (5) industry affiliation—construction, manufacturing, services, and wholesaling.

A sample of 1000 firms, meeting the above characteristics, were drawn from the Dunn & Bradstreet Market Identifiers File of 25,000 firms using the systematic random sampling procedure. The CEOs of the selected firms were then sent a preinterview notification mailer informing them (1) of their selection as part of a state-wide telephone survey and (2) that they would be contacted by an interviewer within a week. Telephone interviews were used for the reasons of flexibility, speed, data quality. By telephone, interviewers could elaborate on questions and probe for complete answers, hence increased accuracy and response rate.

Of the 518 CEOs who were reached by telephone, 303 completed the interview. Another 67 agreed and completed the questionnaire in a mail form. In total, 370 firms were included in this study. Responses received from those who completed the mail version of the questionnaire were not significantly different.

Over 98 percent of respondents were either owners or investors of their firms; 85 percent reported to no one else in the organization. The selected firms represented more than 60 different four-digit SICs across construction (67), manufacturing (112), services (89), and wholesale (102) industries. They reported that, on the average, 91.5 percent of their business activities concentrated in a single SIC code.

The average self-reported sales volume and number of employees in the sampled firms grew from \$2.9 million to \$6.5 million and from 21.5 employees to 34.2 employees over 4-year and 5-year periods respectively. The standard deviations for sales volume were \$5.4 million to \$22.6 million and for the number of employees were 28 to 46.3 for the periods. The average age of the sampled firms was 27.4 years, ranging between 3 and 97 years, with a standard deviation of 21.2 years. Table 1 displays means, standard deviations, and reliability measures of the study variables. The scale reliabilities are also compared with the reported measures from the reference studies. The alpha measures, ranging between 0.58 and 0.88 with a 0.75 average, are in agreement with those of reported studies and most exceed the levels set by Van de Ven and Ferry (1979: 78–82).

ANALYSIS

Data analysis was carried out in two steps. A tentative taxonomy of small firms was first developed using a two-stage clustering procedure. The resultant taxonomy was then tested for its statistical significance.

Taxonomy development

The two-stage clustering procedure, recommended by Punj and Stewart (1983), was based on a split sample of 357 firms, consisting of formation ($n_1 = 213$) and holdout ($n_2 = 144$) subsamples. The results identified *four* clusters of firms along eight managerial activities in the formation subsample. The statistical significance of each cluster was then tested using the procedure reported in Miller and Friesen (1984: 273–274). All four-cluster solutions were significant for the formation and holdout subsamples.

The adequacy of the four-cluster solution was further evaluated using the combined sample of firms (combining subsamples was justified since the cluster solutions were significant and highly similar in variable scores across both groups). The results of one-way multivariate analysis of variance (MANOVA) showed that the four-cluster solution was highly significant (Wilk's $F = 49.80$, d.f. = 3,354, $p \leq 0.000$) in the total sample. Further, univariate F-tests were conducted on each clustering variable. The results (reported in Table 2) indicate statistically significant differences ($p \leq 0.000$) for all variables across four clusters, except dynamism.

The internal validity of the four-cluster solution was evaluated by conducting a split-sample multiple discriminant analysis. Discriminant analysis was first run on the formation subsample using the eight managerial activity variables. The resultant discriminant scores were then used to reclassify the firms in this sample into their original clusters. Over 90 percent of the firms were reclassified accurately. To validate the internal stability of the clusters, the discriminant scores were also used to reclassify firms in the holdout subsample. Over 93 percent of firms were accurately classified. The reclassification rate was 92.18 percent for the total sample, indicating a 269 percent increase in accuracy over what one would obtain on the basis of chance alone (25 percent). Finally, the index of discrimination (I^2) was computed using the procedure by Peterson and Mahajan (1976). Managerial activities accounted for almost 90 percent ($I^2 = 0.895$) of the variations across the four clusters.

To evaluate the discriminating power of contingency variables, stepwise multiple discriminant analysis was used. Five contingency variables (hostility, heterogeneity, proactiveness, innovativeness, and employment size) were included in the final discriminant equations. Scores from these variables correctly classified 43.34 percent of the firms into the four clusters, indicating a 73 percent increase in accuracy over what could be expected by chance (25 percent). The index of discrimination (I^2) was substantially lower for contingency variables. These variables explained only 35 percent ($I^2 = 0.349$) of the variance across the four cluster.

Table 1. Means, standard deviations, and reliabilities

Variables	Mean[a]	S.D.	Cronbach alpha	
			Sample	Reference
Information gathering				
Scanning	3.95	1.32	0.72	0.75[b]
Futurity	3.93	1.41	0.77	0.75[b]
Information processing				
Analysis	2.58	1.18	0.68	0.74[b]
Interaction	3.29	1.49	0.82	0.85[c]
Organization				
Decentralization	15.12	6.03	0.88	0.82[c]
Specialization	4.21	3.37	0.83	0.80[c]
Control				
Formality	4.64	3.05	0.65	0.65[c]
Cost control	3.93	1.53	0.80	0.78[c]
Entrepreneurial orientation				
Proactiveness	4.64	1.36	0.72	0.81[d]
Innovativeness	3.12	1.53	0.58	0.77[d]
Environmental turbulence				
Dynamism	3.93	1.02	0.68	0.74[d]
Hostility	3.34	0.90	0.75	0.55[d]
Heterogeneity	3.97	1.57	0.81	0.84[d]
Size and growth				
Number of employees	43.9	83.9	–	–
Employee growth (5-year)	13.6	26.8	–	–
Dollar sales (million)	9.7	55.0	–	–
Sales growth (4-year)	2.9	9.1	–	–
Average reliability			0.75	0.76

[a] The mean values are based on multiitem, seven-point scales except for 'decentralization', where a five-point summated scale was used.
[b] Reported in Miller (1987a and 1987b).
[c] Reported in Miller and Dröge (1986).
[d] Reported in Miller (1983) and Miller and Friesen (1982).

DISCUSSION

The findings presented in the previous section clearly support the stated hypotheses that (1) small firms are perceived differently in terms of strategy, structure, and environments they face and (2) they display managerial and structural consistency when faced with similar contexts. The taxonomy developed in this study suggests four distinct configurations pertaining to managerial profiles among small firms. To reflect profile similarities and differences, the mean scores of managerial activities and contingency variables are depicted in Table 2, ranked in Table 3, and discussed below. Further, each profile and its demographic characteristics are compared in Table 4.

Profile I (29 percent of sample)

Firms in Profile I are highly centralized (top-down) in decision making. They are least engaged in the collection and evaluation of external (i.e., market and industry) or internal (i.e., cost and operating efficiency) information. Decision making seems to be short term and impulsive, centered at the CEO level. There is little need for formalized operating procedures. Consequently, these firms use few written work rules, job descriptions, or other managerial control devices.

Table 2. Cluster means of managerial activities and contingency variables

Variables	Cluster I	Cluster II	Cluster III	Cluster IV	$\bar{x}$[a]	*F*
Managerial activities						
Information gathering						
Scanning	−0.807	0.227	−0.177	0.901	−0.004	68.32[b]
Futurity	−0.979	0.041	0.257	0.931	−0.017	99.97[b]
Information processing						
Analysis	−0.504	−0.496	0.657	0.707	−0.018	61.74[b]
Interaction	−0.586	−0.564	0.674	0.925	−0.013	101.57[b]
Organization						
Decentralization	−0.436	−0.223	0.822	0.080	−0.010	31.00[b]
Specialization	−0.481	−0.221	1.009	−0.019	−0.004	46.70[b]
Control						
Formality	−0.239	−0.676	0.667	−0.648	−0.010	59.28[b]
Cost control	−0.928	0.208	0.087	0.808	−0.010	74.33[b]
Contingency variables						
Entrepreneurial orientation						
Proactiveness	−0.342	0.087	0.111	0.304	0.015	6.19[b]
Innovativeness	−0.333	−0.022	0.030	0.462	0.001	8.77[b]
Environmental turbulence						
Dynamism	−0.226	−0.043	0.052	0.061	−0.053	1.46
Hostility	−0.262	0.187	0.151	0.112	0.036	3.98[c]
Heterogeneity	−0.162	−0.138	0.141	0.315	0.008	4.23[c]
Size and growth						
Number of employees	−0.342	−0.278	0.961	−0.070	0.011	31.41[b]
Dollar sales (million)	−0.133	−0.204	0.575	−0.047	0.014	9.47[b]

[a] All mean values are standardized *Z* scores.
[b] $p \leq 0.001$
[c] $p \leq 0.01$

The CEOs perceive their environments as extremely placid with the lowest levels of dynamism, hostility, and diversity among profiles. This perception could be a reflection of the CEOs' lack of information rather than environmental realities since they gather and process little external information. The perception may also feed on the lowest entrepreneurial orientation among the firms sampled. Compared with other profiles, firms in this group display the lowest degree of proactiveness and innovativeness. Together, the low perception of environmental diversity and low entrepreneurial orientation may indicate a limited and narrow product or service mix. Eighty-three percent of firms in Profile I are in business services and manufacturing (Table 5). They have the smallest size and growth in the number of employees. Their sales volume and growth are the second smallest among profiles (Table 4).

Profile II (31 percent of sample)

The CEOs in Profile II value information and emphasize the collection of external (i.e., market and industry) as well as internal (i.e., cost and operating efficiency) information. However, their perceived lack of emphasis on analysis and consensus seeking suggests a short-term and impulsive decision-making orientation. Decision making is centered at the top management level and the amount of formalization in terms of written work rules, job controls, and other operating procedures is the lowest among profiles. However, these firms widely use internal cost control mechanisms, second highest among pro-

Table 3. Ranking of managerial activities and contingency variables across clusters[a]

Variables	Cluster I	II	III	IV
Managerial activities				
Information gathering				
Scanning	4	2	3	1
Futurity	4	3	2	1
Information processing				
Analysis	4	3	2	1
Interaction	4	3	2	1
Organization				
Decentralization	4	3	1	2
Specialization	4	3	1	2
Control				
Formality	2	4	1	3
Cost control	4	2	3	1
Contingency variables				
Entrepreneurial orientation				
Proactiveness	4	3	2	1
Innovativeness	4	3	2	1
Environmental turbulence				
Dynamism	4	3	2	1
Hostility	4	1	2	3
Heterogeneity	4	3	2	1
Size and growth				
Number of employees	4	3	1	2
Dollar sales (million)	3	4	1	2

[a] The ranking of managerial activities and contingency variables across clusters reflects the magnitude of mean scores reported in Table 2, with rank 1 as the highest.

Table 4. Profile's demographic characteristics

Average per profile[a]	Profile I	II	III	IV
Average number of employees	24.50	24.60	77.00	69.50
Average employment growth[b]	6.64	9.05	30.40	23.40
Sales volume (million)	$4.26	$2.80	$13.70	$11.78
Average sales growth (million)[b]	$1.47	$0.99	$8.02	$5.23
Profit margin	8.05%	5.80%	4.57%	5.10%
Employee turnover	0.85	11.67	10.40	15.22

[a] The demographic characteristics are average measures across all firms in each profile.
[b] The employment and sales growth are averaged over the last 5 years.

Table 5. Cross-tabulation of firms by profile and industry affiliation

Industry	Profile I	II	III	IV
Construction	14	27	12	14
	14%	*24%*	*17%*	*19%*
Wholesale	25	31	24	19
	25%	*28%*	*33%*	*26%*
Business services	29	22	12	19
	29%	*20%*	*17%*	*26%*
Manufacturing	31	32	24	22
	32%	*28%*	*33%*	*29%*
Total	99	112	72	74

$\chi^2 = 8.25$; d.f. = 9, not significant.

files. Specialization in terms of technostructure, support staffers, and division of work is the second lowest with firms in this group compared with other groups.

The CEOs perceive environments as less dynamic and less diverse compared with other profiles. However, environmental hostility is perceived to be the highest among profiles. Firms in this group tend to be somewhat entrepreneurial. They display better than average proactiveness and about average innovativeness. This suggests, perhaps, a predicament for firms that are willing to innovate products, services, or processes, but lack necessary resources or know-how to make that happen. Firms' size and growth, in terms of dollar sales and the number of employees, are somewhat smaller in Profile II. However, it seems that firms in this group are the most productive (sales per employee) of all (Table 4). The majority of firms (56%) in Profile III are in manufacturing and wholesaling (Table 5).

Profile III (18 Percent of Sample)

Firms in this configuration are characterized by high levels of specialization and decentralization. The CEOs are highly supportive of specialization. As such, they have a tendency to delegate authority and to empower their lower managers to make various decisions compared with other small firms. They interact with others and emphasize consensus building and rational decision-making.

CEOs in Profile III are analyzers and are moderately active in long-term planning; however, they have little use for the external scanning of environments, including the scanning of customers, competitors, and industry technologies. Managerial control is emphasized via the use of formalized operating procedures such as written work descriptions, business plans, and organizational charts.

From a contingency perspective, firms in Profile III face environments that are more dynamic and unpredictable, more hostile and diverse than average. Their entrepreneurial outlook is more proactive than average while their innovativeness is about average compared with other profiles. Firms in Profile III are also the largest in terms of dollar sales and the number of employees. They have experienced the highest growth in sales and employees in the past 5 years (Table 4). The majority (two-thirds) are in manufacturing and wholesale industries (Table 5).

Profile IV (24 percent of sample)

Firms in Profile IV can be characterized as fervent gatherers and analyzers of internal and external information. They have deliberate, long-term planning horizons. They are moderately specialized and maintain very formalized operating procedures with extensive cost control systems. While the decision making is rational and centralized, it is highly collaborative and seeks consensual input from subordinate managers. This resembles a 'divisionalized form' organization wherein lower-level managers work together to make routine operating decisions subject to upper-level management approval.

The perceived environments faced by firms in Profile IV are highly dynamic, hostile, and multifaceted. As a result, firms in this group are highly entrepreneurial. They display the highest level of proactiveness and innovativeness among all profiles. They also enjoy relatively good size, in terms of dollar sales and the number of employees, growth level, and productivity (sales per employee) (Table 4). Almost 30 percent of firms in Profile IV are in manufacturing (Table 5).

CONCLUSIONS AND IMPLICATIONS

The study findings show that (1) there are configurations (profiles) that encompass common managerial, structural, and environmental factors in small firms and that (2) small firms' managerial and structural characteristics are consistent with their environments. Concerning the first hypothesis, the four-cluster solution clearly identified distinct behavioral differences in the management of firms' operations by CEOs. As such, each profile exhibited distinctive characteristics in terms of information gathering, information processing, structural complexity, and use of control mechanisms.

In support of the second hypothesis, the measures of contingency factors were significantly related to the patterns of managerial activities identified. The results of MANOVA and multiple discriminant analysis showed the significant ability of the contingency variables (except for dynamism and sales size) in predicting a firm's membership in a given managerial profile. The amount of interdependence among managerial and contextual variables signifies harmony between the two and furthers our understanding of contingency relations among small firms' task environment, entrepreneurial orientation, and growth measures.

The firms, characterized in four distinct profiles in this study, portray certain features shared in Mintzberg's typology of organizational structure (1979) and Miller and Friesen's entrepreneurial configurations (1984, Ch. 7). Firms in Profile I resemble Mintzberg's 'simple structure' and Miller and Friesen's 'simple firm' archetypes. These firms are typically young and small with little growth ; they use minimum planning and control; they are highly centralized and operate in homogeneous environments.

Firms in Profile IV are the opposite in planning, organizing, and control activities. These firms approach the typology of 'adhocracy' in Mintzberg (1979), 'organic' in Miller and Friesen (1984) and Burns and Stalker (1961), and 'plastic' in Lawrence and Lorsch (1967). They tend to operate in environments that are highly dynamic, diverse, and hostile. To meet the challenges of their environments, these firms operate entrepreneurially, become decentralized with little formality, delegate authority to lower management levels, engage in scanning and analysis of environments, and promote interaction via internal communication among personnel.

Firms in Profile III resemble Mintzberg's 'divisionalized form' and Miller and Friesen's 'planning firms'. Given their relative large size, these firms are more specialized, somewhat bureaucratic and yet entrepreneurial. Their structure characterizes high formality and decentralization of activities with a certain degree of cost control. They face environments that are similar to those of Profile IV; that is, dynamic, diverse, and competitive (Table 3).

Profile II does not conform to any particular archetype characterized in Mintzberg (1979) or Miller and Friesen (1984). Firms in this profile are hybrids of firms in Profiles I and IV. From scanning, futurity, formality, productivity, and cost control perspectives, these firms resemble those in Profile IV (organic); that is, they search environments for opportunities and plan for the future. However, they are less analytic, interactive, specialized, and innovative, and more centralized and intuitive, and face stable, predictable environments, similar to firms in Profile I (Table 3). Perhaps, these firms are in transition and are striving to become 'organic' later on.

The identification of different profiles of managerial activities has several implications both for executives and researchers. The profiles can be used diagnostically to uncover differences in firms' strategy-making activities and the strategic focus of certain structural and operational characteristics. As recognized by Hambrick and Mason (1984), Hambrick (1987), and Norburn and Birley (1988), organizational performance is ultimately influenced and guided by top managers. As such, surveys of executive staff can uncover important differences in managerial roles and responsibilities, skills and creative talents, and opinions and value judgments that potentially affect the firm's strategic and operational effectiveness as well as its direction of growth. Moreover, the adequacy of a firm's managerial activities can be evaluated by benchmarking the performance and characteristics of similar firms in reference profiles (configurations) and identifying the contextual factors that affect them.

Although it is reported that proportions of firms per profile are from certain activities such as manufacturing, wholesaling, or services, the caveat is that the configurations do not relate to

any particular industrial sector. The result of the χ^2 test in Table 5 clearly shows that the two are independent and as such profiles of managerial activities are not industry specific.

The research implication of the study is in growth management and entrepreneurship. The ability to discern managerial activities in their contextual setting has a potential to enhance the exploratory power of research on organizational performance and effectiveness. Further investigation of contingency factors should enable researchers to determine the extent of interdependence between managerial activities and contextual variables. Although the contingency variables in this study accurately predicted the firm's membership across profiles, they explained only 35 percent of variance in managerial activities. Thus, the 65 percent unexplained variation clearly indicates that there exist other unidentified contextual factors that affect managerial activities in small firms.

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