

STRATEGIC MANAGEMENT OF SMALL FIRMS IN HOSTILE AND BENIGN ENVIRONMENTS

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This paper reports the results of a study designed to investigate the effective strategic responses to environmental hostility among small manufacturing firms. Data on environmental hostility, organization structure, strategic posture, competitive tactics, and financial performance were collected from 161 small manufacturers. Findings indicate that performance among small firms in hostile environments was positively related to an organic structure, an entrepreneurial strategic posture, and a competitive profile characterized by a long-term orientation, high product prices, and a concern for predicting industry trends. In benign environments, on the other hand, performance was positively related to a mechanistic structure, a conservative strategic posture, and a competitive profile characterized by conservative financial management and a short-term financial orientation, an emphasis on product refinement, and a willingness to rely heavily on single customers.

While the performance levels of small firms have traditionally been attributed to managerial factors (Albert, 1981; Stegall, Steinmetz and Kline, 1976), external environmental factors may have a strong impact on small firm viability and growth. General economic conditions as well as fiscal and regulatory influences are commonly acknowledged as determinants of small firm creation and success (Cooper, 1979; Boskin, 1984; Chilton, 1984). Recent research has shown that industry structure may have a powerful effect on the performance of new business ventures (Sandberg, 1986). More general environmental dimensions such as level of industry stagnation and dynamism may also affect small firm performance (Peterson, 1985; Miller and Toulouse, 1986).

An environmental dimension which, by definition, serves as a threat to small firm viability and performance is hostility. Hostile environments are characterized by precarious industry settings, intense competition, harsh, overwhelming business climates, and the relative lack of exploitable opportunities. Non-hostile or benign environ-

ments, on the other hand, provide a safe setting for business operations due to their overall level of munificence and richness in investment and marketing opportunities (Khandwalla, 1976/77; Miller and Friesen, 1983). Surviving and competitively flourishing in a hostile environment is difficult for large, established firms (Hall, 1980). The adverse impact of environmental hostility probably presents an even greater threat to small firms due to their limited resource bases and relative inabilities to survive the consequences of poor managerial decisions. Because of the continuing trend toward greater environmental hostility in many domestic manufacturing industries, learning to compete effectively in hostile environments will become a top priority for increasing numbers of small manufacturing firms.

This paper reports the results of a study in which the overall strategic orientation, the competitive tactics, and the organizational attributes of small manufacturing firms in hostile and benign environments were examined. The purpose of this study was to identify and contrast

the strategic postures and organization structures associated with high performance in both hostile and benign environments.

HYPOTHESES

Organization structure and environmental hostility

Although references to the concept of environmental hostility have been scattered throughout the organization theory literature for 30 years (March and Simon (1958) were perhaps the first theorists to refer to this concept), empirical research that broadly addresses the relationship between organization structure and environmental hostility is limited to a small number of studies.

Hall (1980) conducted an in-depth investigation of the 'survival strategies' of 64 large manufacturing firms in eight industries which were experiencing adverse, 'hostile' trends. In addition to drawing a number of conclusions concerning the effective business strategies of firms in such environments, Hall briefly addressed organization structure issues. Specifically, he noted that high-performing firms typically reacted to increased hostility by creating internal administrative structures which allowed them effectively and efficiently to manage any necessary strategic repositioning. The example of General Motors' organizational restructuring efforts in response to the need to 'down-size' their products was cited. Since structural issues were not the principal focus of Hall's study, he did not elaborate on the organizational implications of a hostile environmental context.

In an unpublished manuscript cited in Lawrence and Lorsch (1967: 191-195), Fouraker described a series of experiments he had conducted on the impact of threatening environmental contexts on several dimensions of organizational structure. His findings suggest that threatening environments, operationally defined in terms of resource scarcity and competitive intensity, cause organizations to place more emphasis on discipline and authority (i.e. control issues) and to become more hierarchical. Research conducted by Pfeffer and Leblebici (1973) on 38 small manufacturing firms supports Fouraker's findings. Pfeffer and Leblebici studied the effect of competitive inten-

sity on organization structure. Their findings suggest that 'the extent of competition in the environment is positively associated with frequency of reporting, the extent to which decision procedures are specified in advance and weakly associated with a relatively taller organizational structure' (1973: 268).

Mintzberg wrote:

Hostility affects structure through the intermediate variables of the predictability of work, in that hostile environments are unpredictable ones. But of greater interest is its relationship with the intermediate variable of speed of response, since very hostile environments generally demand fast reactions by the organization (1979: 269).

Considerable evidence suggests that 'organic' structures permit rapid organizational response to changing external forces in unpredictable environments, while 'mechanistic' structures are better suited to predictable environments where rapid organizational responses are not typically required (Burns and Stalker, 1961; Lawrence and Lorsch, 1967). As such, one would expect that organic structures will be effective for firms operating in hostile environments, whereas mechanistic structures will be relatively more effective for firms in benign environments. This expectation is supported by research conducted by Khandwalla (1977).

Khandwalla (1977) examined the relationship between organization structure, environmental context, and firm performance in 103 large Canadian firms. He found that high-performing firms in industries characterized by intense, diverse, and shifting competitive pressures (i.e. hostile industries) adopted organic structures, while high-performing firms in industries with minimal competitive pressure (i.e. benign industries) adopted more mechanistic structures. Although caution must be exercised when generalizing to small firm settings the findings of research studies based on samples of large firms, Khandwalla's results in combination with Mintzberg's theory-based assertions support the following hypothesis:

H1: An organic structure will be more positively related to firm performance for small firms in hostile environments than small firms in benign environments.

Strategic posture and environmental hostility

Strategic posture can be broadly defined as a firm's overall competitive orientation. A firm's entrepreneurial-conservation orientation is indicative of its strategic posture. The entrepreneurial-conservation orientation of a firm is demonstrated by the extent to which the top managers are inclined to take business-related risks, to favor change and innovation in order to obtain a competitive advantage for their firm, and to compete aggressively with other firms (Miller, 1983). Entrepreneurial firms are those in which the top managers have entrepreneurial top management styles, as evidenced by the firms' strategic decisions and operating management philosophy. The strategic orientations of these firms are roughly similar to those of Miles and Snow's (1978) prospector firms and Mintzberg's (1973) entrepreneurial organizations. Conservative firms are those in which the top management style is decidedly risk-averse, non-innovative, and reactive. The strategic orientations of these firms approximate those of Miles and Snow's (1978) defender firms and Mintzberg's (1973) adaptive organizations.

An entrepreneurial strategic posture may be particularly beneficial to small firms in hostile environments. These environments, as previously noted, contain fewer opportunities and are more competitive than benign environments. Accordingly, it might be expected that successful firms in hostile environments will gear their competitive efforts to the prevailing conditions by aggressively trying to gain or maintain a competitive advantage. Such an advantage will more likely result from the proactive, innovative, and risk-taking efforts of entrepreneurial firms than the passive and reactive efforts of conservative firms.

In benign environments, on the other hand, the relationship between an entrepreneurial strategic posture and small firm performance may be much weaker and possibly negative. Entrepreneurial behaviors entail more risk than conservative behaviors. The assumption of this risk may be necessary for survival in hostile environments. In benign environments firms are faced with a much greater level of munificence, and consequently are not typically forced to engage in uncertain, resource-consuming endeavors in order to main-

tain viability. Thus, while an entrepreneurial posture may just as easily result in a sustainable competitive advantage in a benign environment as in a hostile environment, such a posture may not be essential for superior performance, and could possibly represent an unwarranted risk for smaller firms.

A small number of studies have focused on the relationship between environmental hostility and firms' entrepreneurial-conservative orientations. Miller (1983) studied the correlates of entrepreneurial behavior in a sample of 52 large, diverse Canadian firms. He operationally defined entrepreneurial orientation in terms of innovation, proactiveness and risk-taking. He hypothesized that environmental hostility requires entrepreneurial efforts because only through such efforts can firms effectively cope with the adverse forces prevalent in such environments. Miller found a positive, significant correlation ($r = 0.26$, $p < 0.10$) between environmental hostility and entrepreneurial orientation.

In a separate study, Miller and Friesen examined the performance consequences of the relationship between environmental hostility and entrepreneurial behavior. Their sample consisted of 50 large Canadian firms and 88 large U.S. firms. They argued that 'extensive risk taking, forceful proactiveness and a strong emphasis on novelty can be very hazardous when competitive or economic conditions are becoming more taxing [i.e. hostile]' (1983: 233). Contrary to the arguments made here, Miller and Friesen hypothesized that 'relative to samples of poor performers, samples of successful firms will show . . . more *negative* [emphasis added] correlations between increases in environmental hostility and increases in innovation' (1983: 223). Innovation was operationally defined in terms of the entrepreneurial attributes of product and technological innovation, top management risk-taking, and proactiveness. The results of their data analysis differed for the U.S. and Canadian samples, with the Canadian sample largely supporting their hypothesis while the U.S. sample contradicted their hypothesis.

In Khandwalla's (1977) study of 103 large Canadian firms, the relationship between top management style, environmental context, and firm performance was examined. Among other things, Khandwalla found that a conservative top

management style is effective for smaller firms in benign environments, while an entrepreneurial style is effective for smaller firms in hostile environments. These findings, while appearing to bear directly on the current discussion, must be interpreted with caution because of the way Khandwalla operationally defined entrepreneurial and conservative style. Specifically, he clustered together 5 management style dimensions, then labeled two of the resulting clusters entrepreneurial style and conservative style. Therefore, Khandwalla's measures of entrepreneurial and conservative style encompass more than just risk-taking, innovation, and proactiveness.

Collectively, these findings seem to warrant the following hypothesis:

H2: An entrepreneurial strategic posture will be more positively related to firm performance for small firms in hostile environments than small firms in benign environments.

METHODS

The sample

A research questionnaire was mailed to the senior-most managers of 1225 single-industry, independently owned firms. A follow-up letter was sent to all nonresponding firms, resulting in a sample of 344 firms, a response rate of 28.1 percent. All of the firms are either clients, members, or affiliates of three Pittsburgh-based organizations which share the purpose of promoting entrepreneurship and economic development in the western Pennsylvania area. A comparison of the early-responding firms (those that responded before the follow-up letter was sent) with the late-responding firms (those that responded after the follow-up letter was sent) showed that these groups did not differ in terms of number of employees, sales revenue, years in business, or any of the key variables in this study (i.e. environmental hostility, strategic posture, organization structure, and firm performance).

From the sample of 344 firms, 161 were chosen for this study. The average number of employees for these firms is 73. The average annual sales revenue is \$8.2 million. Approximately 25 different industries are represented in this subsample.

The 161 firms included in this study were selected on the basis of three criteria. First, all of these firms are primarily involved in manufacturing activities. Most of the studies cited in the preceding literature review investigated manufacturing-type firms. This same type of firm was chosen for this study in order to increase the probability that any inconsistent findings are primarily attributable to differences in the sizes rather than types of firms in the samples. Second, all of these firms have between 5 and 500 employees. As such, they can all be classified as small firms. Finally, all of these firms have been in business for at least 5 years. Therefore, they have all survived the most critical years for small firms (Pickle and Abrahamson, 1976) and their business practices presumably approximate those of established firms rather than new ventures.

The great majority of the 183 firms excluded from this study were omitted because they are either the wrong type of firm (e.g. service, wholesale) or too young to be considered 'established'. Very few of the excluded firms have more than 500 employees, and none of these firms would generally be regarded as large.

The measures

Measures of environmental hostility, organization structure, strategic posture, and financial performance were employed in this research. With the exception of the financial performance measure, which is described in detail below, all of these measures are included in the Appendix.

Environmental hostility

A three-item scale, developed by Khandwalla (1976/77), was used to measure environmental hostility. The respondents' ratings on these three items were averaged to arrive at a single environmental hostility index for each firm. The higher the index, the more hostile the firm's environment. This scale has a mean of 4.13, a standard deviation of 1.32, a range of 1.0 to 7.0, and an inter-item reliability coefficient of 0.73.

Organization structure

Organization structure was limited to a seven-item scale which measures organicity—that is, the extent to which organizations are structured

in organic versus mechanistic manners. This scale was also developed by Khandwalla (1976/77). The respondents were asked to indicate on seven-point Likert-type scales the extent to which each item of the measure characterizes the structure of their firms. Each firm's mean rating on these seven items was used as that firm's organicity index. The higher the index, the more organic the firm's structure. This scale has a mean value of 5.07, a standard deviation of 1.10, a range of 1.29 to 7.0, and an inter-item reliability coefficient of 0.80.

Strategic posture

A nine-item scale was used to measure strategic posture. This scale contains items that focus on innovation, proactiveness, and risk-taking. As previously noted, an entrepreneurial strategic posture is characterized by frequent and extensive technological and product innovation, an aggressive competitive orientation, and a strong risk-taking propensity by top management. A conservative strategic posture is characterized by minimal technological and product innovation, a cautious competitive orientation, and a weak risk-taking propensity by top management. These three components of strategic posture (innovation, proactiveness, and risk-taking) were argued by Miller to comprise a basic, unidimensional strategic orientation:

In general, theorists would not call a firm entrepreneurial if it changed its technology or product-line ('innovated' according to our terminology) simply by directly imitating competitors while refusing to take any risks. Some proactiveness would be essential as well. By the same token, risk-taking firms that are highly leveraged financially are not necessarily entrepreneurial. They must also engage in product-market or technological innovation (1983: 780).

Therefore a scale was developed to assess strategic posture in terms of the firm's reliance on these three activities (see Appendix). The first three items of this scale assess the firm's tendency toward innovation; the second three items assess the firm's proactive orientation; the third three items assess the firm's risk-taking propensity. The specific items of this scale were either adapted from existing instruments (items 1, 2, 3, 7 and 8 are adapted from Miller and Friesen, 1982 and Khandwalla, 1976/77) or are original

items (items 4, 5, 6 and 9). The respondents were asked to characterize their firms' strategic posture in terms of these nine items. The mean ratings on these items were used as the firms' strategic posture scores. The higher the score, the more entrepreneurial the strategic posture.

Because the items of this scale focus on different aspects of strategic posture (i.e. innovation, proactiveness, and risk-taking), they were factor-analyzed in order to assess their dimensionality or 'factorial validity'. As noted by Allen and Yen (1979), factorial validity is a form of construct validity. High loadings on a single factor would suggest that, although the items focus on different aspects of strategic posture, they are empirically related and constitute a distinct, unidimensional strategic orientation. All of the items loaded above 0.5 on a single-factor (average loading = 0.66), indicating that it is appropriate to combine these items in a single scale. This scale has a mean of 4.33, a standard deviation of 1.23, a range of 1.22 to 6.78, and an inter-item reliability coefficient of 0.87.

Financial performance

Financial performance was measured with a modified version of an instrument developed by Gupta and Govindarajan (1984). The respondents were first asked to indicate on a five-point Likert-type scale, ranging from 'of little importance' to 'extremely important', the degree of importance their firm attaches to each of the following financial performance criteria: sales level, sales growth rate, cash flow, return on shareholder equity, gross profit margin, net profit from operations, profit to sales ratio, return on investment, and ability to fund business growth from profits. The respondents were then asked to indicate on another five-point Likert-type scale, ranging from 'highly dissatisfied' to 'highly satisfied', the extent to which their firm's top managers are currently satisfied with their firm's performance on each of these same financial performance criteria. These 'satisfaction' scores were multiplied by the 'importance' scores in order to compute a weighted average performance index for each firm. This scale has a mean value of 11.57, a standard deviation of 4.06, a range of 3.78 to 23.33, and an inter-item reliability coefficient of 0.88.

This subjective measure of performance was chosen over objective data for several reasons. First, small firms are 'notorious for their inability and unwillingness to provide desired information' (Fiorito and LaForge, 1986: 11). It was therefore felt that more complete financial information could be obtained with a subjective measure. Furthermore, objective financial data on the sampled firms were not publicly available, making it impossible to check the accuracy of any reported financial performance figures. Second, assuming that accurate financial data were reported, such data on small firms are difficult to interpret. Cooper (1979: 326), for example, noted that operating losses or low profits in small, growth-oriented firms may not be indicative of poor management if the reason for this apparent poor performance is heavy investment in product and market development. Third, absolute scores on financial performance criteria are affected by industry-related factors (Miller and Toulouse, 1986). As such, directly comparing the objective financial data obtained for small firms in different industries would be misleading.

The analytical technique

The hypotheses suggest that the relationships between the independent variables (organization structure and strategic posture) and firm performance are contingent upon the level of hostility in the environment. According to Schoonhoven (1981), Darrow and Kahl (1982) and others, moderate regression analysis is an appropriate technique for testing hypothesized contingency relationships since it allows interaction terms, which are implied in all contingency relationships, to be directly examined.

Although other analytical techniques, such as analysis of variance or dummy variable regression, could have been used to test the hypotheses, moderated regression analysis was chosen for two reasons. First, moderated regression analysis, according to Arnold (1982: 170), 'provides the most straightforward and the most general method for testing [contingency hypotheses in which an interaction is implied]'. Second, moderated regression analysis is regarded as a conservative method for identifying interaction effects in the sense that interaction terms are tested for significance only after other independent variables are entered into the regression equation. As

such, interaction effects are found to be significant only if they explain a significantly greater portion of the variance in the dependent variable than that portion already explained by the other independent variables.

In moderated regression analysis the statistical significance of interaction effects is tested by regressing the dependent variable on two (or more) main variables (one being the independent variable, the other the hypothesized moderator variable) and the cross-product of those main variables (Sharma, Durand, and Gur-Arie, 1981). The form of the moderated regression equation employed in this research was $Y = a + bX + cZ + dXZ$, where Y is the dependent variable (financial performance), X is the theoretically defined independent variable (either organization structure or strategic posture), Z is the theoretically defined moderator variable (environmental hostility), and XZ is the interaction term. If the addition of the interaction term significantly increases the power of the regression equation to explain the variance in the dependent variable, then an interaction or contingency effect can be said to exist. Furthermore, a positive and significant interaction term coefficient (d) would imply that the positive influence of X on Y is greater when Z is large than when Z is small. A negative and significant interaction term coefficient would imply the opposite.

RESULTS

Table 1 presents the results of the moderated regression analysis. This table shows that the interactive influence of organization structure and environmental hostility on firm performance is significant at the $p < 0.05$ level, and the interactive influence of strategic posture and environmental hostility on firm performance is significant at the $p < 0.005$ level. Furthermore, the interaction term regression coefficients have positive signs, implying that the relationships are consistent with the hypotheses. Specifically, the data suggest that:

1. Small firms with high organicity indices (i.e. organic structures) generally perform best in hostile environments, whereas small firms with low organicity indices (i.e. mechanistic

Table 1. Moderated regression analysis of organization structure, strategic posture, and environmental hostility with firm performance as the dependent variable^a ($n = 161$)

Variables included	Cumulative <i>R</i> -squared	Unstandardized regression coefficients ^b	<i>F</i> -ratio for individual variables	df
Organic structure	0.0000	0.0120	0.0015	1,159
Organic structure		0.0794	0.0760	1,158
Environmental hostility	0.1323	-1.1190	21.6494***	1,158
Organic structure		-1.3329	3.7015	1,157
Environmental hostility	0.1620	-2.9837	11.8354	1,157
OS × EH		0.3772	4.9967*	1,157
Strategic posture	0.0134	0.3814	1.9349	1,159
Strategic posture		0.3782	2.1800	1,158
Environmental hostility	0.1450	-1.1146	21.8575***	1,158
Strategic posture		-1.8255	5.3087	1,157
Environmental hostility	0.1941	-3.3406	17.6887	1,157
SP × EH		0.5375	8.5884**	1,157

^a Organization structure and environmental hostility are not significantly correlated ($r = 0.050$, $p > 0.1$), nor are strategic posture and environmental hostility ($r = -0.003$, $p > 0.1$).

^b Unstandardized regression coefficients are reported because, unlike standardized regression coefficients, they are not affected by changes in the points of origin of the main variables (organization structure, strategic posture, and environmental hostility). See Southwood (1978) for details.

* $p < 0.05$; ** $p < 0.005$; *** $p < 0.001$.

structures) generally perform best in more benign environments.

- Small firms with high strategic posture indices (i.e. entrepreneurial firms) generally perform best in hostile environments, whereas small firms with low strategic posture indices (i.e. conservative firms) generally perform best in more benign environments.

Table 1 also shows that neither organization structure (i.e. organicity) nor strategic posture are significant independent predictors of firm performance. Organization structure explains less than 1 percent of the variance in firm performance, while strategic posture explains only slightly more than 1 percent of the variance in performance. Environmental hostility, on the other hand, is a highly significant ($p < 0.001$) predictor of performance, explaining about 13 percent of the variance in performance. The negative regression coefficient for environmental hostility implies, as might be expected, that this factor has a negative impact on performance. Collectively, the figures shown in Table 1 suggest that while organization structure and strategic

posture may not have strong independent effects on performance, the fit between these variables and the level of hostility in the environment may contribute to the performance differences of higher- and lower-performing firms.

Because of the modest amount of performance variance explained by the regression equations in general, and interaction terms in particular, a reliability analysis was performed on the data. Specifically, the sample was randomly split in half and the same analyses were run for these subsamples as for the entire sample. This was performed ten times. In each case the overall regression equation remained statistically significant ($p < 0.05$ or less) and, consistent with the hypotheses, the interaction terms had positive regression coefficients. Using a simple nonparametric sign test, the probability that 20 positive interaction term coefficients (10 for the organicity–hostility interaction and 10 for the strategic posture–hostility interaction) would appear in the 10 regression runs if the data did not generally support the hypotheses is less than 0.001. Therefore, the findings presented in Table 1 hold consistently throughout the data.

The data analysis results do not warrant the conclusion that small, high-performing firms in hostile and benign environments necessarily have distinct structural and strategic posture attributes. However, the findings do suggest general differences in the effective strategic management of small firms in these environments. This conclusion was corroborated through an examination of several other variables examined in this study.

A measure was included in the research questionnaire which assessed the firms' reliance on various business practices and competitive tactics. The respondents were asked to rate the extent to which they agreed or disagreed that various statements were descriptive of their firms' current overall business strategy. The rating scales for these statements ranged from 'strongly disagree' (= 1) to 'strongly agree' (= 5). The zero-order correlations between performance and the ratings given to several of these statements differed for small firms in hostile and benign environments. For example, the statements in Table 2 were significantly correlated with performance for small firms in hostile environments (those with hostility indices greater than the mean value of 4.13, $n = 77$), but not small firms in benign environments (those with hostility indices less than the mean, $n = 84$). The statements in Table 3 were significantly correlated with performance for small firms in benign environments, but not small firms in hostile environments.

Each of these correlation analysis findings is theoretically defensible. The positive correlations between performance and emphasizing long-term profitability, capital investments, and high product prices in hostile environments are consistent with Hall's (1980) research findings. Hall observed that high-performing firms in hostile environments frequently adopt clearly defined, long-term orientations coupled with high product prices.

The utility of adopting a long-range orientation and high product prices may not be as great for small firms in more benign environments. Digman (1986: 338) asserted that 'small firms should strive to excel in short-term, not long-term planning'. Similarly, Cohn and Lindberg (1972: 2) argued that 'the smaller quantities of goods purchased, fewer salesmen, lower inventory levels, smaller outlays for advertising and promotion, and similar characteristics of small businesses seldom justify the risk or costs imposed by long-range plans'. Many small-firm management theorists have also argued that there are no generally superior price setting strategies for small firms (e.g. Baumbach, Lawyer and Kelley, 1973; Pickle and Abrahamson, 1976). Accordingly, it is understandable that emphasizing the short-term goal of immediate profitability was significantly correlated with performance in benign environments while emphasizing high prices was not.

Miller and Friesen's (1982, 1983), as well as

Table 2. Performance-Policy Correlations: Small Firms in Hostile Environments

	Correlation coefficient	Significance level
We emphasize long-term capital investments	0.22	0.05
We emphasize long-term profitability	0.28	0.01
We offer our products/services at a high price relative to our competitors	0.30	0.01
We actively attempt to predict industry trends	0.21	0.05

Table 3. Performance-Policy Correlations: Small Firms in Benign Environments

	Correlation coefficient	Significance level
We have a highly leveraged financial position	-0.23	0.05
We emphasize immediate profitability	0.19	0.05
We emphasize the development and refinement of existing products/services	0.31	0.01
We actively attempt to minimize our dependence on any single customer	-0.22	0.05

Khandwalla's (1977), studies strongly suggest that environmental scanning efforts aimed at forecasting the industry environment are particularly critical to firms facing hostile environments. However, actively attempting to predict industry trends may be of lesser importance to firms in more benign environments. These environments are, by definition, characterized by less competitive intensity and are frequently less dynamic than hostile environments. Therefore, industry monitoring efforts may not be as strongly associated with performance in benign environments as they would arguably be in more hostile environments. Indeed, this is suggested by the fact that the forecasting of industry trends was significantly correlated with performance only in more hostile environments.

The importance of conservative financial management is generally acknowledged in the small-firm management literature. Most successful small firms have low to moderate debt positions, while poorer-performing small firms are often forced to assume riskier, more leveraged financial positions (Cohn and Lindberg, 1974). The same may not be true of small firms in hostile environments. It is possible that a conservative, risk-averse financial posture may cause small firms in hostile environments to shy away from making the capital investments needed to develop or maintain a competitive advantage. This reasoning could account for the presence of a significant (negative) correlation between performance and financial leverage in benign environments and the absence of a significant correlation between these variables in more hostile environments.

The significant correlation between performance and emphasizing the development and refinement of existing products in benign environments is consistent with Cohn and Lindberg's assertion regarding effective small firm innovation and product R&D practices:

Because the risks of failure of original products is great and can cause more serious losses for small companies than large companies, small firms should lean more toward evolution than invention in product development (1972: 3).

In hostile environments, on the other hand, the absence of a significant correlation between these variables may be attributable to the possibility that a more aggressive emphasis on innovation is warranted in these settings. Consistent with this

point, Hall (1980) found that heavy investment in new product (vs existing product) research and development was characteristic of many high-performing firms in hostile environments.

Finally, research by Gardner (1983) may provide a clue to why attempting to minimize dependence on any single customer was significantly (and negatively) correlated with performance in benign environments, but not hostile environments. In a study of small manufacturing firms, Gardner found that it was common for these firms to 'survive by having a close relationship with a relatively small number of customers who account for a very large portion of their sales volume' (1983: 61). Such strong dependence on a few large accounts would represent a particularly substantial risk for small firms in hostile environments given the inherent uncertainties of these environments. Therefore, it is not too surprising that the correlations between performance and dependency on single customers differed for small firms in hostile and benign environments.

Collectively, these findings concerning the individual business practices and competitive tactics further suggest that diverse and dissimilar strategic management practices appear to be characteristic of small, high-performing firms in hostile and benign environments.

DISCUSSION AND CONCLUSION

The data indicate that the business practices and organizational responses of effective small firms in hostile and benign environments may differ in many ways. The attributes which appear to contribute to high performance among small firms in hostile environments are an organic structure, an entrepreneurial strategic posture, and a competitive profile characterized by a long-term, goal-oriented approach to management, high product/service prices, and a concern for maintaining an awareness of industry trends. In benign environments, on the other hand, the attributes which appear to promote performance include a more mechanistic structure, a more conservative strategic posture, and a competitive profile characterized by conservative, risk-averse financial management, an emphasis on immediate profitability and the development and refinement of existing products and services, and a strong

dependence, if necessary, on individual customers for the firm's sales revenues.

The apparent managerial implication of these findings is that small firms in hostile and benign environments should strive to adopt the attributes associated with high performance in those settings. However, the drawing of any such strong implication from this research must be done with caution in light of three important considerations.

First, the data analysis merely shows that certain strategic management practices are more strongly related to performance among small firms in hostile environments than among small firms in benign environments (or vice-versa). The analysis does not suggest that poorer-performing firms will never engage in the practices typically associated with better performance in a given environmental setting. Likewise, it is certainly possible for small firms to perform well in hostile or benign environments without engaging in the practices identified in this study as associated with high performance in those environments.

Second, there is no objective basis for determining when a benign environment becomes a hostile environment. As such, the use of a mean split of the environmental hostility scale as the basis for operationally defining hostile and benign environments was largely arbitrary. Although the results of the correlation analysis were easily explained using existing theory and research, it must be recognized that these results may have been influenced by this imprecise methodological decision.

Third, while the results of the moderated regression analysis were statistically significant and consistent with the hypotheses, neither complete regression equation explained more than 20 percent of the variance in firm performance. The purpose of this analysis was to determine whether environmental hostility has a moderating influence on the organization structure-performance and strategic posture-performance relationships, rather than to identify the best predictors of performance for the sampled firms. However, the fact that the regression equations did not explain large portions of the variance in performance suggests that other organizational context variables (e.g. organization culture, industry structure) may be equally or more important than organization structure and strategic posture in predicting small firm performance in hostile and benign environments.

The finding that several of the correlations between performance and specific business practices differed in magnitude in hostile and benign environments raises an interesting possibility concerning the inability of organization structure and strategic posture to explain large variations in performance. Performance is, presumably, a function not only of a firm's organization structure and strategic posture, but also of the fit between these variables and the firm's business practices and competitive tactics. Furthermore, the interrelationships between the business practices and competitive tactics themselves would arguably have an impact on performance. As such, it seems reasonable to suggest that the internal cohesiveness and consistency of a firm's strategic management practices, assessed in terms of the aforementioned relationships, would be more strongly linked to performance than would any small number of independently observed variables. While clearly beyond the intended scope of this paper, research along these lines would seem to be a step in the right direction.

In conclusion, the body of literature on small-firm management offers many valuable suggestions on how to effectively conduct business operations. These suggestions are frequently based on empirical research, wisdom gained through years of trial-and-error experience, and sound theorizing. Nonetheless, these *general* prescriptions, by definition, do not consider variations in the environmental setting which can moderate their effectiveness. As such, adhering too closely to general prescriptions can lead to poor performance and missed opportunities. This argument was recently made by Cooper, Willard and Woo (1986), who showed that, in certain industries, direct competition with larger competitors can be a more effective strategy for a small firm than the usually recommended niche strategy.

The findings of this study suggest that different organizational responses and business practices are appropriate for firms in hostile and benign environments. This is most likely true for large as well as small firms. However, a perusal of the literature on small-firm management can lead one to assume that small firms can effectively compete by adhering to business principles which are offered without regard for the individual firm's environmental context. The folly of this assumption is highlighted by the finding that

different strategic management practices were associated with high performance in different environmental settings. Clearly a critical analysis of environmental factors is central to the effective strategic management of firms of all sizes.

Given these conclusions, future research on small-firm management might fruitfully focus on differentiating effective and ineffective management practices in various organizational and environmental contexts. The findings of this study suggest that a particularly promising line of research may be an investigation into the impact on small firm performance of the relationships

between individual business practices and overall structural and strategic postures. Hopefully, such efforts will increase the level of sophistication and practical utility of the small firm strategic management paradigm.

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APPENDIX

The environmental hostility scale

How would you characterize the external environment within which your firm operates?

Very safe, little threat to the survival and well-being of my firm	1 to 7	Very risky, a false step can mean my firm's undoing
Rich in investment and marketing opportunities	1 to 7	Very stressful, exacting, hostile; very hard to keep afloat
An environment that my firm can control and manipulate to its own advantage, such as a dominant firm has in an industry with little competition and few hindrances	1 to 7	A dominating environment in which my firm's initiatives count for very little against the tremendous competitive, political, or technological forces

The organization structure scale

In general, the operating management philosophy in my firm favors . . .

Highly structured channels of communication and a highly restricted access to important financial and operating information	1 to 7	Open channels of communication with important financial and operating information flowing quite freely throughout the organization
A strong insistence on a uniform managerial style throughout the firm	1 to 7	Managers' operating styles allowed to range freely from the very formal to the very informal
A strong emphasis on giving the most to say in decision-making to formal line managers	1 to 7	A strong tendency to let the expert in a given situation have the most say in decision-making, even if this means temporary bypassing of formal line authority
A strong emphasis on holding fast to tried and true management principles despite any changes in business conditions	1 to 7	A strong emphasis on holding fast to tried changing circumstances without too much concern for past practice
A strong emphasis on always getting personnel to follow the formally laid down procedures	1 to 7	A strong emphasis on getting things done even if this means disregarding formal procedures



Tight formal control of most operations by means of sophisticated control and information systems	1 to 7	Loose, informal control; heavy dependence on informal relationships and norm of cooperation for getting work done
A strong emphasis on getting line and staff personnel to adhere closely to formal job descriptions	1 to 7	A strong tendency to let the requirements of the situation and the individual's personality define proper on-job behavior

The strategic posture scale

In general, the top managers of my firm favor . . .

A strong emphasis on the marketing of tried and true products or services	1 to 7	A strong emphasis on R&D, technological leadership, and innovations
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How many new lines of products or services has your firm marketed in the past 5 years?

No new lines of products or services	1 to 7	Very many new lines of products or services
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Changes in product or service lines have been mostly of a minor nature	1 to 7	Changes in product or service lines have usually been quite dramatic
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In dealing with its competitors, my firm . . .

Typically responds to actions which competitors initiate	1 to 7	Typically initiates actions which competitors then respond to
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Is very seldom the first business to introduce new products/services, administrative techniques, operating technologies, etc.	1 to 7	Is very often the first business to introduce new products/services, administrative techniques, operating technologies, etc.
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Typically seeks to avoid competitive clashes, preferring a 'live-and-let-live' posture	1 to 7	Typically adopts a very competitive, 'undo-the-competitors' posture
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In general, the top managers of my firm have . . .

A strong proclivity for low-risk projects (with normal and certain rates of return)	1 to 7	A strong proclivity for high-risk projects (with chances of very high returns)
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In general, the top managers of my firm believe that . . .

Owing to the nature of the environment, it is best to explore it gradually via timid, incremental behavior	1 to 7	Owing to the nature of the environment, bold, wide-ranging acts are necessary to achieve the firm's objectives
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When confronted with decision-making situations involving uncertainty, my firm . . .

Typically adopts a cautious, 'wait-and-see' posture in order to minimize the probability of making costly decisions	1 to 7	Typically adopts a bold, aggressive posture in order to maximize the probability of exploiting potential opportunities
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REFERENCES

- Albert, K. J. *Straight Talk about Small Business*, McGraw-Hill, New York, 1981.
- Allen, M. J. and W. M. Yen. *Introduction to Measurement Theory*, Brooks/Cole, Monterey, CA, 1979.
- Arnold, H. J. 'Moderator variables: a clarification of conceptual, analytic, and psychometric issues', *Organizational Behavior and Human Performance*, 29(2), 1982, pp. 143-174.
- Baumbach, C. M., K. Lawyer and P. C. Kelley. *How to Organize and Operate a Small Business*, 5th edition, Prentice-Hall, Englewood Cliffs, NJ, 1973.

- Boskin, M. J. 'The fiscal environment for entrepreneurship'. In Kent, C. A. (ed.), *The Environment for Entrepreneurship*, Lexington Books, Lexington, MA, 1984, pp. 59-68.
- Burns, T. and G. M. Stalker. *The Management of Innovation*, Tavistock, London, 1961.
- Chilton, K. W. 'Regulation and the entrepreneurial environment'. In Kent, C. A. (ed.), *The Environment for Entrepreneurship*, Lexington Books, Lexington, MA, 1984, pp. 91-116.
- Cohn, T. and R. A. Lindberg. *How Management Is Different in Small Companies*, AMA, Inc., New York, 1972.
- Cohn, T. and R. A. Lindberg. *Survival & Growth: Management Strategies for the Small Firm*, AMACOM, New York, 1974.
- Cooper, A. C. 'Strategic management: New ventures and small business'. In Schendel, D. E. and C. W. Hofer (eds), *Strategic Management: A New View of Business Policy and Planning*, Little, Brown and Company, Boston, 1979, pp. 316-327.
- Cooper, A. C., G. E. Willard and C. Y. Woo. 'Strategies of high-performing new and small firms: A reexamination of the niche concept', *Journal of Business Venturing*, 1, 1986, pp. 247-260.
- Darrow, A. L. and D. R. Kahl. 'A comparison of moderated regression techniques considering strength of effect', *Journal of Management*, 8, 1982, pp. 35-47.
- Digman, L. A. *Strategic Management: Concepts, Decisions, Cases*, Business Publications, Inc., Plano, TX, 1986.
- Fiorito, S. S. and R. W. LaForge. 'A marketing strategy analysis of small retailers', *American Journal of Small Business*, 10(4), 1986, pp. 7-17.
- Gardner, D. M. 'The marketing concept: its dimensions for the "big" small firm'. In Hills, G. E., D. J. Barnaby and L. R. Duffus (eds), *Marketing and Small Business/Entrepreneurship*, International Council for Small Business, Washington, DC, 1983, pp. 51-62.
- Gupta, A. K. and V. Govindarajan. 'Business unit strategy, managerial characteristics, and business unit effectiveness at strategy implementation', *Academy of Management Journal*, 27, 1984, pp. 25-41.
- Hall, W. K. 'Survival strategies in a hostile environment', *Harvard Business Review*, 58(5), September-October 1980, pp. 75-85.
- Khandwalla, P. N. 'Some top management styles, their context and performance', *Organization and Administrative Sciences*, 7(4), Winter 1976/77, pp. 21-51.
- Khandwalla, P. N. *The Design of Organizations*, Harcourt, Brace, Jovanovich, New York, 1977.
- Lawrence, P. R. and J. W. Lorsch. *Organization and Environment*, Richard D. Irwin, Homewood, Ill., 1967.
- March, J. G. and H. A. Simon. *Organizations*, John Wiley & Sons, New York, 1958.
- Miles, R. E. and C. C. Snow. *Organization Strategy, Structure and Process*, McGraw-Hill, New York, 1978.
- Miller, D. 'The correlates of entrepreneurship in three types of firms', *Management Science*, 29, 1983, pp. 770-791.
- Miller, D. and P. H. Friesen. 'Innovation in conservative and entrepreneurial firms: two models of strategic momentum', *Strategic Management Journal*, 3, 1982, pp. 1-25.
- Miller, D. and P. H. Friesen. 'Strategy-making and environment: the third link', *Strategic Management Journal*, 4, 1983, pp. 221-235.
- Miller, D. and J. M. Tolouse. 'Strategy, structure, CEO personality and performance in small firms', *American Journal of Small Business*, 10(3), 1986, pp. 47-62.
- Mintzberg, H. 'Strategy-making in three modes', *California Management Review*, 16(2), 1973, pp. 44-53.
- Mintzberg, H. *The Structuring of Organizations*, Prentice-Hall, Englewood Cliffs, NJ, 1979.
- Peterson, R. 'Creating contexts for new ventures in stagnating environments'. In Hornaday, J. A., E. B. Shils, J. A. Timmons and K. H. Vesper (eds), *Frontiers of Entrepreneurship Research*, Babson College Center for Entrepreneurial Studies, Wellesley, MA, 1985, pp. 258-283.
- Pfeffer, J. and H. Leblebici. 'The effect of competition on some dimensions of organizational structure', *Social Forces*, 52, 1973, pp. 268-279.
- Pickle, H. B. and R. L. Abrahamson. *Small Business Management*, John Wiley and Sons, New York, 1976.
- Sandberg, W. R. *New Venture Performance: The Role of Strategy and Industry Structure*, Lexington Books, Lexington, MA, 1986.
- Schoonhoven, C. B. 'Problems with contingency theory: Testing assumptions hidden within the language of contingency "theory"', *Administrative Science Quarterly*, 26, 1981, pp. 349-377.
- Sharma, S., R. M. Durand and O. Gur-Arie. 'Identification and analysis of moderator variables', *Journal of Marketing Research*, 18, 1981, pp. 291-300.
- Southwood, K. E. 'Substantive theory and statistical interaction: five models', *American Journal of Sociology*, 83, 1978, pp. 1154-1203.
- Stegall, D. P., L. L. Steinmetz and J. B. Kline. *Managing the Small Business*, Richard D. Irwin, Homewood, Ill., 1976.