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PIONEERS AND FOLLOWERS: COMPETITIVE TACTICS, ENVIRONMENT, AND FIRM GROWTH

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EXECUTIVE SUMMARY

Market pioneering—where a firm is first to offer a distinctively new product to the market—is a commonly recognized form of corporate entrepreneurship. As with other forms of corporate entrepreneurship, the linkage between market pioneering and firm performance has received limited empirical attention, much of which has yielded inconsistent results. Nonetheless, two conclusions regarding when and how pioneering relates to firm performance are revealed in the literature. First, theory and past research suggest that pioneering is an environment-specific phenomenon. That is, certain types of environments may be most likely to encourage or reward the actions of pioneers, while these same actions may meet with limited success in other environments. Second, theory and past research suggest that firm performance is affected by the fit between a firm's pioneer/follower status and its competitive tactics. In other words, market entry order moderates the effectiveness of a firm's competitive tactics such that certain tactics will be most effective when employed by market pioneers, while other tactics will be most effective when employed by market followers.

Considered jointly, the preceding observations suggest that insights might be gained regarding the effective management of market pioneering and market following by seeking to understand (a) how these phenomena are manifested in different industry environments and (b) what pioneers and followers do

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differently in these environments to promote their performance. The research described in this paper addresses these issues. In particular, this paper develops theory that describes how particular competitive tactics are thought to relate to firm sales growth rate among market pioneers and market followers in two distinct environmental settings. Hypotheses are developed based on the following research propositions:

> *P1:* In hostile environments, pioneers and followers will differentially benefit in achieving high sales growth rates from their reliance on relatively high prices, relatively broad product lines, relatively broad served (geographical) markets, relatively advanced process technologies, and relatively advantageous purchasing arrangements.
>
> *P2:* In benign environments, pioneers and followers will differentially benefit in achieving high sales growth rates from their reliance on relatively high quality products, relatively strong product warranties, relatively high advertising and promotion expenditures, relatively strong control over distribution channels employed, and relatively large numbers of distribution channels employed.

To test the hypothesized relationships, data were collected from the senior managers of 103 independent, nondiversified manufacturing firms operating in 75 industries. Cluster analysis, ANOVA, and correlational analysis were employed as the principal analytical techniques.

The results suggest that market pioneers grow neither more nor less rapidly than market followers. However, in hostile environments, pioneering may enable firms to break out of the dominant price-based mode of competition and grow in spite of charging high prices. This ability of pioneers to excel in hostile environments seems to be further facilitated by limiting product line breath to a small number of product offerings that provide a "tight fit" with market needs. Pioneers in hostile environments also appear to be relatively better served than followers from gaining a wide geographical distribution for their products. Followers in hostile environments, on the other hand, should seek to reduce their cost structures in order to effectively sustain low price strategies. The employment of advanced process technologies and the pursuit of "purchasing advantages" were actions which proved to be more advantageous for followers than for pioneers in hostile environments.

The managerial implications of this research applicable to benign environment firms are quite different. Other things being equal, relatively high prices may not be as detrimental to growth among followers in benign environments as they are among followers in more hostile environments. Benign environment followers may, in fact, be better off when they charge relatively high prices and compete on non-price bases. The results also suggest that, in benign environments, offering products with warranties superior to those of competitors may have a significantly more positive effect on sales growth among pioneers than followers. Moreover, employing a large number of distribution channels appears to benefit pioneers more than followers. However, among the sampled firms, benign environment pioneers that realized the greatest growth did not have extensive control over distribution channel members. Therefore, benign environment pioneers may grow more quickly if they target their distribution-related resources toward expanding their channels rather than toward controlling some smaller number these channels.

This study contributes to the pioneering literature by having corroborated several findings of the PIMS-based studies regarding tactical differences between pioneers and followers, and by having further documented the relevance of market entry order (or pioneer/follower status) as a moderator of the performance associated with particular competitive tactics. Moreover, by having examined the tactics-performance relationships of pioneers and followers in two distinct environmental settings, this study adds specificity and empirical support to the emerging theoretical paradigm that depicts pioneering as an environment-specific phenomenon. Finally, this study contributes to the literature on coping with hostility by having theorized about and empirically identified common and effective bases for competition under varying levels of environmental hostility. *© 1999 Elsevier Science Inc.*

INTRODUCTION

Conventional wisdom and mounting empirical evidence (e.g., Smart and Conant 1994; Zahra and Covin 1995) suggest that entrepreneurial firm-level behavior can be a path

to sustained competitiveness among established firms. Market pioneering is commonly identified as one potential manifestation of entrepreneurial behavior (e.g., Miller 1983; Covin and Miles forthcoming). Market pioneering represents a particular form or manifestation of entrepreneurial behavior whereby the organization proactively creates or is among the first to enter a new product-market arena that others have not recognized or actively sought to exploit. By engaging in pioneering the firm, in essence, takes the competition to a new arena where its first or early mover status is hoped to create some basis for sustainable competitive advantage. For example, the pioneering firm may be able to create the industry standard or define the benchmark against which later entrants are judged. Thus, firms that engage in pioneering are entrepreneurial by virtue of the fact that they exploit market opportunities in a preemptive fashion, redefining where and how the competitive game is played in the process.

Although some manifestations of entrepreneurial behavior may have inherent value to established firms, research suggests that market pioneering is not necessarily, or perhaps even typically, a good idea (e.g., Tellis and Golder 1996). Quite often, market pioneers are outperformed by later market entrants. Consequently, it is not clear whether either pioneering or following should generally be considered a normative strategic posture.

Upon reflection, perhaps the more practical consideration is not one of whether firms should generally seek to be market pioneers or market followers. Rather, the more meaningful question may be one of deciding how to best carry out a decision to pioneer or to follow. In other words, how do some firms pioneer effectively, and how do other firms follow effectively? Kerin, Varadarajan, and Peterson (1992) argue that the realization of high performance involves more than simply choosing to pioneer or to follow. They suggest that the tactics associated with pioneering and following can have a strong impact on the ultimate effectiveness of the market entry order decision. Specifically, Kerin, Varadarajan, and Peterson (1992) have stated that:

> The overall magnitude of positional advantages accruing to the first mover depends on the comprehensive competitive strategies employed by the pioneer and followers, in concert with entry timing. Breadth of served markets, product line width, pricing policies, R&D focus, capacity utilization, and resource commitments that reflect a firm's strategic posture are likely to attenuate or amplify the overall magnitude of the first mover's competitive advantage. (pp. 46–47)

In other words, for a pioneer or follower strategy to work, competitive tactics that fit the chosen market entry order strategy must be employed.

However, under different types of environmental conditions, it's unlikely that particular tactics will be uniformly good fits or poor fits with a given market entry order strategy. That is, there will not be one set of tactics that fit well with pioneer strategies in all environments, or another set of tactics that effectively support follower strategies in all environments. Rather, the best tactical determinants and discriminators of performance for pioneers and followers will likely vary with the environment. The following hypothetical example will help to illustrate this point.

Research suggests that pioneers, due to their competitively distinct status, are often in a position to charge premium prices for their products (e.g., Lambkin 1988; Bobrow and Shafer 1987). This situation typically affords pioneers the relative luxury of being less concerned than market followers over cost control issues. Market followers need to focus on cost containment more than pioneers because the former firms' products are, by definition, not as distinct. This relative lack of distinctiveness often forces follow-

ers into more of a price-based mode of competition. Because pioneers generally are not as compelled as followers to compete on a (low) price basis, the existence of a relatively advantageous cost structure is likely to be a significantly stronger predictor of firm growth among followers than among pioneers.

However, these expectations may be more reflective of reality among firms operating in, for example, hostile than those in benign environments. This is due to the fact that price-based competition is less typical in benign than hostile environments (e.g., Parker 1990; Potter 1994). In the absence of intense price-based competition, costs cease to be as much of a managerial concern. Therefore, while having a low cost structure may benefit followers significantly more than pioneers in hostile environments, such a structure may not provide as great a differential advantage to followers over pioneers in more benign environments. In short, it may be that relatively low operating costs benefit followers more than pioneers, but that such operating cost advantages are more apt to differentially relate to growth differences among pioneers and followers in hostile than in benign environments.

The preceding arguments suggest that studies of effective tactics for pioneers and followers should be conducted within clearly-defined and well-understood environmental contexts. Consistent with this point, this paper describes a research project in which the relationship between competitive tactics and firm performance among pioneers and followers was explored within two distinct environmental contexts—specifically, within hostile and within benign environments. The two research questions addressed by this study were:

(1) In hostile environments, which competitive tactics might be expected to differ in their relationship to performance among pioneers and followers, and how might they differ?
(2) In benign environments, which competitive tactics might be expected to differ in their relationship to performance among pioneers and followers, and how might they differ?

In order to answer these questions, literature was reviewed and theory developed regarding how firms compete in these distinct environmental contexts. Tactics were then selected for examination, and hypotheses generated concerning how these tactics might be expected to differentially benefit pioneers and followers. The following "Theoretical Framework" section of this paper describes the results of these efforts. A discussion of the sample, measures, and analytical techniques is then presented in the "Methods" section. The research findings are reported in the "Results" section. Finally, the "Discussion and Conclusions" section presents the implications and limitations of the study.

THEORETICAL FRAMEWORK

Bases for Competing in Differing Environments: A Preface and Qualification

Competitive tactics should not be expected to be equally prevalent nor equally associated with performance among firms operating in different environments. Consistent with this point, Anderson and Zeithaml's (1984) research, for example, revealed that (i) firms serving fast-growth markets are more apt than those serving slow-growth markets to indicate a reliance on high relative product quality (i.e., relative to competitors' product quality) as a basis for competition, and (ii) the relationship between relative

product quality and market share is more positive among firms serving fast-growth than slow-growth markets. These researchers did not find that an emphasis on high relative product quality does not contribute to performance gains in slow-growth markets, only that such an emphasis did not contribute to performance gains as much in slow-growth as in faster-growth markets. In short, Anderson and Zeithaml's (1984) research revealed that just because some tactics "work better" in some market contexts than others does not imply that these tactics will only contribute to firm success in narrowly-defined market contexts.

In a similar vein, the position taken in this paper is that the competitive tactics that are expected to best predict growth among pioneers or followers in one environmental context (i.e., either hostile or benign environments) will not necessarily be unrelated to growth among this same type of firm in the other environmental context. As argued above, for example, costs may be a greater concern among followers in hostile environments than among followers in benign environments, but this doesn't imply that costs are a non-issue to followers in benign environments. The following discussion simply highlights why one might expect a tactic's ability to predict firm growth to be most pronounced in a particular environmental setting.

Bases for Competing in Hostile Environments

Hostile environments pose constant threats to the viability of business operations (Zahra 1993; Miller 1994). The failure rate of companies in hostile environments tends to be high, and competitive intensity is often severe and exacerbated by price wars and minimal customer loyalty (Hall 1980). Not surprisingly, profit margins are characteristically low among firms in these environments (Potter 1994). Under such circumstances survival, rather than competitive excellence, is often viewed as a noteworthy accomplishment. However, as observed by Edelstein (1992), Hambrick and D'Aveni (1988) and many others, our knowledge regarding how to manage under conditions of environmental hostility is rather limited. This situation is due, in part, to the fact that managing in growth environments has been a much more popular research theme than the management of decline or stagnation (Aaker and Day 1986).

One common though incompletely tested prescription for managing in hostile environments is the adoption of aggressive, proactive, or, more generally, entrepreneurial competitive postures. For example, in a sample of ten European firms in four mature industries, Stopford and Baden-Fuller (1994) found that various types of corporate entrepreneurial activity were initiated in response to the hostile trends in the firms' environments. Stopford and Baden-Fuller suggested that entrepreneurial activity was essential to their sampled firms' survival, but they did not directly relate such activity to any measure of firm performance. Similarly, Zahra (1993: 324) has argued that "When rivalry is fierce, companies must innovate in both products and processes, explore new markets, find novel ways to compete, and examine how they will differentiate themselves from competitors." He observed in a sample of 102 firms in six industries that perceived environmental hostility is positively associated with business "redefinition" via venturing activities (although he too did not examine the effectiveness per se of such business redefinition in hostile environments).

The issue of growth in hostile environments was explored in a study conducted by Miller and Friesen (1983). In a sample of 88 U.S. firms, Miller and Friesen reported a significantly more positive correlation between hostility and the competitive dimension

of proactiveness in the more rapidly growing subsample of firms, relative to the less rapidly growing subsample of firms. However, Miller and Friesen's replication of this study in a sample of 40 Canadian firms yielded the opposite results, leading the authors to conclude that "hostility does not have any simple relationship to innovation" and that "much more research is needed on this question" (p. 229).

In order to identify competitive tactics which should differentially relate to firm growth among pioneers and followers operating in hostile environments, one needs to understand how successful firms typically compete in such settings. Of the 10 competitive tactics examined in the current research, theory and research point to the particular significance of relative price, relative product line breadth, geographic breadth of served markets, relative utilization of advanced process technologies, and relative purchasing advantage as critical bases for competitive advantage in hostile environments.

As mentioned earlier, price-based competition is often a defining characteristic of hostile environments. Potter (1994), for example, has described hostile environments as involving "inevitable price wars". In dealing with such competition in hostile environments, firms have been observed to follow two primary paths. First, firms sometimes try to distinguish themselves from competitors using a strategy of market differentiation whereby direct competition is avoided. Miller (1987), for example, in his study of 161 firms operating in multiple and diverse industries, found that market differentiation strategies were positively associated with perceived environmental hostility (but not with perceived environmental dynamism nor heterogeneity). A key attribute of market differentiation strategies, as operationalized by Miller (1987), is "prestige" pricing. By having a differentiated market offering, firms in hostile environments were able to rise above the price wars and use their high relative prices as means for creating and sustaining distinctiveness.

A second approach to competing in hostile environments was observed by Parker (1990) in her study of 106 firms in the textiles industry. Parker (1990) found that "efficiency" strategies, characterized by efforts to control costs (through reducing inventories, improving productivity, streamlining operations, etc.), were common strategic responses to the intense hostility of the textiles industry. Firms in such industries recognize the price-sensitive nature of their markets, and, therefore, having low cost structures is often viewed as critical to competitive success. Low cost structures enable firms to profitably sustain low-price strategies and, thereby, effectively compete on the basis of price in hostile environments (Porter 1980).

Among the variables likely to be associated with a firm's cost structure in the current research is "relative purchasing advantage". Having a relative purchasing advantage will help to reduce a firm's cost structure, thus contributing to a firm's ability to successfully compete on a (low) price basis in hostile environments.

Further, to the extent that long-term efficiencies achieved outweigh short-term acquisition costs, the relative use of advanced process technologies can also be expected to support a low cost structure, improving a firm's potential price-competitiveness in hostile environments. Consistent with this point, in Hall's (1980) study of "survival strategies" among 64 large manufacturing firms in eight hostile industries, effective cost leadership strategies were characteristically observed to be supported by investments in "modern, automated process technology". Similarly, in Edelstein's (1992) study of adjustment and decline among 44 firms in 12 hostile industries, cost inefficiency due to the existence of old or obsolete machinery and equipment was a much less frequently

cited problem among the firms that were growing than among the firms that were losing sales.

Edelstein's (1992) research also suggests that relative product line breadth is a discriminator of more and less successful firms in hostile environments. In particular, he found that rapidly growing firms in hostile environments had narrow product lines relative to those of their less successful counterparts. His explanation of this finding was that hostile environments demand a particularly "tight fit" between products and markets, implying that narrow product lines result when effective hostile environment firms prune or limit their product lines in an attempt to offer only those products with the greatest market success.

Finally, market breadth—that is, the geographic range of served markets—will likely correlate with competitive success in hostile environments. Specifically, the serving of broad geographical markets will enable firms to vie for a greater portion of total industry sales. This will be particularly advantageous in hostile industries where opportunities for growth are often severely limited (Potter 1994). Moreover, in hostile industries where scale economies exist, firms not subject to geographical market constraints may be able to reduce their cost structures through volume production (which often accompanies the serving of broad geographical markets (Porter 1990) and compete more effectively on a price basis. The aforementioned research by Edelstein (1992) corroborates the argument that serving broad geographical markets is important under hostile conditions. He reported that narrow market coverage, defined in part by limited geographic distribution coverage, was the perceived weakness most frequently mentioned by executives of the 44 hostile environment firms in his study.

To summarize, in hostile environments some key bases for competitive success appear to be product price, cost determinants which affect price, and achieving a tight product-market fit through selective product offerings. Additionally, the targeting of broad geographical markets should facilitate the circumvention of growth constraints inherent in more narrowly-defined markets and contribute to firm sales. Therefore, competitive tactics and practices which relate to these themes may be differentially related to growth among pioneers and followers. In the current research, these variables include relative price, relative product line breadth, relative market breadth, relative reliance on advanced process technology, and relative purchasing advantage.

Pioneering and Following in Hostile Environments

Based on the preceding literature review and theoretical assertions, it is proposed that:

> In hostile environments, pioneers and followers will differentially benefit in achieving high sales growth rates from their reliance on relatively high prices, relatively broad product lines, relatively broad served (geographical) markets, relatively advanced process technologies, and relatively advantageous purchasing arrangements.

The specific expectations underlying this proposition are detailed in the following arguments and hypotheses.

Relative price

Relative price has been frequently assessed in empirical studies of pioneering. Results generally indicate that pioneers charge higher prices than later market entrants (e.g.,

Lambkin 1988, 1992; Schmalensee 1982). This finding is consistent with the conventional wisdom guideline that new and distinct products should be priced at the high end of a reasonable range. Bobrow and Shafer (1987) have summarized many of the arguments supporting such a pricing strategy by pioneers:

> . . . some segments of a market will always be willing to pay the price; the company can cover development costs earlier in the life cycle; a safety margin exists to cover design and startup manufacturing cost overruns; and enough margin exists to support sales and marketing expenses. Also, price decreases are always easier to implement than price increases. (p. 164)

Thus, the distinctiveness of the pioneer's product offering may allow pioneers in hostile environments to command premium prices. On the other hand, followers will more likely be subject to price-based competition as their products will be, by definition, less distinct from those of competitors. By charging relatively high prices, followers in hostile environments may simply be encouraging customers to buy from other competitors. Thus, it is hypothesized:

> *H1:* In hostile environments, the relationship between sales growth rate and relative price is significantly more positive among pioneers than followers.

Relative product line breadth

One of the more replicated findings in the empirical studies of pioneering is that pioneers tend to have broader product lines than later entrants (e.g., Lambkin 1988; Moore, Boulding, and Goodstein 1991). Many of the studies which have found an order of entry effect on product line breadth have relied on the PIMS database, which has been criticized for the imprecise and potentially biased manner in which pioneers are therein identified (e.g., Kerin, Varadarajan, and Peterson 1992; Lieberman and Montgomery 1988). Nonetheless, it seems logical that pioneers may want to offer relatively broad product lines as a means to protect their market share. For example, by offering broad product lines pioneers may be able to quickly dominate the most attractive market segments and thereby discourage or preempt the entry of competitors into their markets (Robinson and Fornell 1985). Thus, the finding that pioneers offer broader product lines than later market entrants has face validity.

However, Edelstein's (1992) research indicates that growth in hostile environments may be associated with the existence of relatively narrow product lines. As such, a pioneer's growth in a hostile environment may be best promoted by employing a relatively narrow product line. Such a product line will likely facilitate the tight product-market fit that Edelstein (1992) argues is essential to growth in hostile environments. Conversely, followers, in their efforts to exploit remaining niches in hostile environments, may best ensure their growth by having a complete line of product offerings. This is not meant to imply that product-market fit is any less important among followers than pioneers. However, because pioneers are venturing into new product categories, the market demand for their products will be less assured. Consequently, product-market misfit may more likely surface among pioneers than followers when broad product lines are offered. It is hypothesized:

> *H2:* In hostile environments, the relationship between sales growth rate and relative product line breadth is significantly more positive among followers than pioneers.

Relative market breadth

Related to the preceding points, considerable incentive may exist for pioneers to "spatially preempt" later entrants through serving broad geographical markets. The serving of broad geographical markets represents a form of spatial preemption in that pioneers are afforded the opportunity to establish a market presence in the most attractive geographical locations prior to the entrance of competitors (Hauser and Shugan 1983). Such a market presence can discourage later entrants if the pioneer is able to create brand loyalty, control access to the market, quickly service market demand, or occupy the most lucrative differentiated product niches within the geographical market (Schmalensee 1978). Thus, there are reasons to believe that the geographical breadth of served markets will be greater for pioneers than followers.

The serving of broad geographical markets can expand a firm's growth opportunities beyond those available in more narrowly-defined geographic markets. Moreover, as suggested above, serving broad markets may be particularly beneficial to firms in hostile industries since attractive growth opportunities are typically scarce in these settings. If it is also true, as argued by Schmalensee (1978) and Hauser and Shugan (1983), that pioneering in new geographical markets can create "spatial preemption" advantages for the pioneer, then hostile environment pioneers may benefit more than followers from serving broad geographical markets. Thus, it is hypothesized:

> *H3:* In hostile environments, the relationship between sales growth rate and market breadth is significantly more positive among pioneers than followers.

Relative reliance on advanced process technology

Process technology investments and competencies have been theoretically and empirically linked to the practice of pioneering in the literature. Anecdotal evidence suggests that heavy investments in automation, state-of-the-art process technologies, or proprietary process technologies can signal a commitment by the pioneer to a particular product-market arena and, thereby, discourage later entrants (Zahra, Nash, and Bickford 1995). Further, process technology investments may help pioneers to sustain their competitive advantages. Specifically, unlike product technology investments, process technology investments are typically not as likely to eventually benefit competitors through reverse engineering efforts (Lieberman and Montgomery 1988). Therefore, one might expect to find a greater reliance on advanced process technologies among pioneers than later entrants.

Nonetheless, in hostile environments, reliance on such technologies may not create advantages of as great a magnitude among pioneers as among followers. This is, in part, because a principal incentive behind employing advanced process technologies is the reduction of a firm's production costs (Zahra, Nash, and Bickford 1995). Such costs will be a greater issue for followers that are competing on a price basis than pioneers whose product distinctiveness diminishes the significance of price as a competitive concern. Additionally, as asserted by Porter (1980, 1983), essential competencies for followers that are not typically as critical to industry leaders' success include an ability to rapidly reduce production costs, an ability to rapidly adapt to market demands, and an ability to continuously implement process improvements. Each of these competencies may be enhanced through investments in automation or state-of-the-art process technologies. Therefore, it is hypothesized:

H4: In hostile environments, the relationship between sales growth rate and utilization of advanced process technology is significantly more positive among followers than pioneers.

Relative purchasing advantage

Lastly, relationships with suppliers may characteristically differ between pioneers and later entrants such that pioneers are more likely to realize various forms of purchasing advantage. For example, by leveraging scale effects that frequently accrue to pioneers, these firms are often able to negotiate attractive price discounts and favorable terms of purchase (e.g., delivery contracts, payment schedules) with suppliers (Rao and Rutenberg 1979). Additionally, pioneers can sometimes benefit from scale-independent supply preemption factors which may only exist for short time periods. Low cost and/or long-term procurement contracts, for example, may be most readily available in the early stages of a market's evolution during which times suppliers are still learning their customers' price elasticities. Further, pioneers can occasionally secure exclusive rights to scarce supplies by virtue of their first mover status, thereby creating a basis for long-term competitive advantage (Lieberman and Montgomery 1988). Still, there is evidence that comprehensive cost advantages to pioneers may be negligible in industrial goods industries (Robinson 1988) and negative in consumer goods industries (Robinson and Fornell 1985) when direct costs are operationalized to include manufacturing and distribution expenses along with supply costs.

Similar to the preceding hypothesis involving followers' greater benefit from reliance on advanced process technology, the cost benefit associated with a purchasing advantage is likely to promote growth to a greater degree among followers than among pioneers. Certainly increases in gross margins attributable to the existence of a purchasing advantage could contribute to a pioneer's sales growth. Still, since price competition will more likely prevail among followers in hostile environments, it is these firms that should derive the greatest benefit from cost-reducing factors like a purchasing advantage that promote price competitiveness. It is hypothesized:

H5: In hostile environments, the relationship between sales growth rate and relative purchasing advantage is significantly more positive among followers than pioneers.

Bases for Competing in Benign Environments

As noted in a prior section, product differentiation was observed by Miller (1987) as a means by which firms in hostile environments sometimes compete. Indeed, both of the paths discussed above as strategies used by firms to effectively cope with hostility—that is, strategies based on product differentiation and strategies based on low costs—are documented by Hall (1980) in his study of 64 firms in 8 hostile industries. Both of these strategic orientations are well accepted in the strategic management literature (Porter 1980). Undoubtedly, given their generic nature, both of these strategic orientations will also be evident among many firms in benign environments.

It would, nonetheless, appear that the relative pervasiveness of these strategic orientations will differ among firms in hostile and benign environments. Specifically, given that hostile environments are often operationally defined as exhibiting tough price competition (e.g., Miller and Friesen 1984), one would expect competition based on costs

to be more prevalent than competition based on product differentiation. This expectation is consistent with the industry life cycle literature which acknowledges the dominance of price-based competition in mature industries (see Porter's (1980) review of strategic prescriptions by industry life cycle stage). As noted by Stopford and Baden-Fuller (1994), Edelstein (1992), and many others, mature industries often take on hostile characteristics. Therefore, the dominance of price-based competition in mature industries suggests that such competition will also typify hostile environments.

Benign environments have characteristics opposite those of hostile environments. In particular, benign environments are munificent settings characterized by relatively high profit margins, low competitive intensity, high customer loyalty, and a general tolerance for poor managerial decisions by industry and market forces. Not surprisingly, the failure rate of firms operating in benign environments tends to be relatively low. Moreover, market sensitivities to price are less significant in benign than in hostile environments. This is, in part, because demand often exceeds supply in the former environments, and, therefore, firms are less compelled to offer "competitive" prices. Consequently, bases of competition other than price tend to dominate in benign settings (Khandwalla 1977). Under the most benign conditions, a "live-and-let-live" philosophy characterizes the competition, so one's basis for competing tends to be a moot point. More typically in benign environments, however, product-based competition is pervasive. Firms seek to distinguish themselves from competitors on the basis of differentiated products, allowing premium prices to be charged and maximum value to be extracted from their lucrative markets. Thus, while costs appear to be a principal basis for success in hostile environments, reliance on differentiated products appears to be a more dominant basis of competition in benign environments.

Empirical support for the preceding argument tends to be more sketchy than that for the arguments surrounding bases of competition in hostile environments. This is largely because, although several studies have explicitly focused on the impact of environmental hostility on strategic behavior, few studies have examined strategic behavior in environments that were labeled benign. Nonetheless, growing industries often have benign attributes. (Harrigan (1980) notes that declining industries can also be benign. In general, however, growing industries will more characteristically exhibit benign attributes.) Therefore, the industry life cycle literature can be used to corroborate the espoused importance of product differentiation in benign environments.

In particular, three of the competitive tactics examined in the current research have been identified in the industry life cycle literature as critical to the creation of product differentiation and subsequent competitive success in growing industries. Product quality and reliability have long been recognized and advocated as bases for competitive differentiation in growing industries (e.g., Clifford 1965; Hofer 1975). Therefore, relative product quality and relative warranty strength may be particularly predictive of firm growth in benign environments. Similarly, advertising and promotion intensity has been found to differentiate between more and less rapidly growing firms in growth industries (e.g., Buzzell and Wiersema 1981; Thietart and Vivas 1984). Thus, benign environment firms may also be prone to rely on high advertising and promotion expenditures as part of their competitive strategies.

Still, differentiation-enhancing factors will only partially explain the performance differences likely to be observed between more and less successful firms in benign environments. Product distribution represents a second potentially significant category of variable likely to predict performance variations in these environments. Specifically,

the ability to reach and exploit the ubiquitous market opportunities afforded by benign environments will tend to distinguish between the more and less successful firms in these environments. Consistent with this argument, the industry life cycle literature has frequently acknowledged the significance of product distribution as a requisite strength for excelling in growing industries (e.g., Wasson 1974). Two distribution-related factors were examined in the current research: relative number of distribution channels employed and relative control over distribution channel members. Therefore, these variables are also expected to differentially relate to success among pioneers and followers in benign environments.

In summary, product differentiation-enhancing factors and distribution-related factors appear to be key bases for competitive success in benign environments. As such, competitive tactics and practices which relate to these themes may be differentially related to growth among pioneers and followers. In the current research, these variables include relative product quality, relative product warranty strength, relative advertising and promotion expenditures, relative distribution channel control, and relative number of distribution channels.

Pioneering and Following in Benign Environments

Based on the preceding literature review and theoretical assertions, it is proposed that:

> In benign environments, pioneers and followers will differentially benefit in achieving high sales growth rates from their reliance on relatively high quality products, relatively strong product warranties, relatively high advertising and promotion expenditures, relatively strong control over distribution channels employed, and relatively large numbers of distribution channels employed.

The specific expectations underlying this proposition are detailed in the following arguments and hypotheses.

Relative product quality

Largely consistent empirical results have been reported with respect to the relationship between market entry order and product quality. In particular, pioneers have often been shown to offer products of higher quality, on average, than those of later market entrants (e.g., Robinson 1988; Robinson and Fornell 1985; Miller, Gartner, and Wilson 1989). This may be because learning effects within a market can result in pioneers offering superior products. Additionally, because the act of pioneering often creates a favorable image for the firm, the perception of higher quality may be more readily attributed to known pioneers than to later entrants (Porter 1980).

Superior quality can contribute to product differentiation, which was argued to be a common basis for competition in benign environments. More important, the perception of superior quality by a pioneering firm's market can allay market apprehensions over purchasing novel products. Additionally, it's probable that superior quality may be instrumental in helping pioneers to retain customers once roughly comparable products become more widely available from competing (i.e., following) firms. Thus, even in the context of benign environments, which are forgiving by definition, pioneers may benefit more than followers by offering products of superior quality. It is hypothesized:

H6: In benign environments, the relationship between sales growth rate and relative product quality is significantly more positive among pioneers than followers.

Relative product warranty strength

If pioneers offer higher quality products than those of later market entrants, these pioneers may choose to contribute to the perception of quality by offering superior product warranties. Thus, although no direct examination of product warranties could be found in the empirical literature on pioneering, it is plausible that product warranty strength will be higher among pioneers than among later entrants. Such warranties can help to minimize buyer apprehension attributable to the prospect of purchasing a product that, at the time it's brought out, lacks a track record of reliability (Day 1990; Howard 1989). Similarly, superior warranties convey to the market the message that the manufacturer has confidence in its product offerings. This may be particularly essential for pioneering firms given the novelty of their products.

Thus, the extension of superior product warranties may disproportionately benefit pioneering firms in benign environments. As with superior quality, offering superior warranties is a means through which pioneers can effectively lessen the customers' risk associated with product purchase and, thereby, induce product trial. However, warranties are a more concrete basis for comparing firms than product quality, which is a more general, diffuse concept. So, strong warranties may create an even greater differential positive sales growth effect for pioneers. Further, the offering of superior warranties by pioneers will signal a commitment to continue serving the market. Such a signal of commitment by pioneers may be more impactful than an equivalent signal by followers. This is because commitment to the market is more likely to be an uncertainty among pioneers who, by virtue of their first-mover status, are less likely to know what they are getting into. Thus, it is hypothesized:

H7: In benign environments, the relationship between sales growth rate and relative product warranty strength is significantly more positive among pioneers than followers.

Relative advertising and promotion expenditures

In contrast to the relative consistency reported when the aforementioned competitive tactics have been examined in empirical studies of pioneering, there is much less consistency regarding the observed relationship between pioneering and relative advertising and promotion expenditures. For example, Buzzell and Farris (1977) and Fornell, Robinson, and Wernerfelt (1985) found that advertising and sales promotion expenditures are higher among early followers than the first entrants to a market. Conversely, Lambkin (1988) and Srinivasan (1988) reported that the pioneers in their studies had higher marketing expenditures than the later entrants. Presumably, the contrasting results reported in the literature are attributable to sample differences and/or the ways in which the marketing and pioneering variables have been operationalized in these studies. The inconsistency of these results notwithstanding, it is generally agreed that marketing expenditures, broadly defined, are an important marketing mix consideration without which any conceptual model of first mover advantage would be incomplete (Lieberman and Montgomery 1988; Kerin, Varadarajan, and Peterson 1992).

Although the strength and direction of the relationship between advertising and promotion expenditures and order of entry is equivocal, outspending competitors in this area may do more to help pioneers retain their share superiority than to help competitors overcome customer loyalty to the pioneer. This is plausible for two reasons. First, advertising and promotion expenditures tend to have a cumulative and long-term impact. Therefore, equivalent expenditures in this area by pioneers and followers may benefit pioneers to a disproportionate degree given the amplifying effects of the pioneer's longevity in the market. It follows that superior advertising and promotion expenditures by pioneers would have an even greater differential effect. Second, extensive advertising and promotion can enable pioneers to create product differentiation-based entry barriers which may only be overcome by followers if they devote significant resources to creating brand awareness and trial (Porter 1985). Because followers will have to invest so much money in advertising and promotion in order to overcome loyalty to the pioneer, the return per dollar invested by followers will likely be less than the return per dollar invested by the pioneer. In short, it is hypothesized:

> *H8:* In benign environments, the relationship between sales growth rate and relative advertising and promotion is significantly more positive among pioneers than followers.

Relative distribution channel control

Product distribution decisions may vary with a firm's pioneering status as well as moderate the effectiveness of pioneering activities. In the current research, two distribution-related matters were examined: relative control over distribution channel members and relative number of distribution channels employed. The relevance of these variables is implied in the pioneering literature by the significant findings and strong theoretical arguments regarding distribution. For example, Lambkin's (1988) research on pioneering revealed that pioneers tend to use a more extensive market distribution network than later entrants (distribution extensiveness was assessed in Lambkin's research using an broad index which combines the number, size, and geographic spread of customers). Similarly, Whitten's (1979) research on brand pioneering in the cigarette industry revealed that, for six of the seven new brand types studied, enduring sales advantages were associated with the ability of the pioneering firm to widely distribute its new product. Consistent with these results, Lieberman and Montgomery (1988) have argued that preemption of location through the rapid and extensive development of distribution systems is key to promoting a first-mover advantage. As such, it is plausible that, relative to later entrants, pioneers will tend to use more distribution channels and/or have more control over those channels employed.

Nonetheless, control over distribution channels may be more instrumental to the growth of followers than pioneers. In benign environments, the ubiquitous product-market opportunities create significant room for growth even among followers. A key strategic concern in these environments, as discussed earlier, is one's ability to reach prospective customers and, thereby, benefit from the munificence of the environment. A firm's distribution strategy and system will have a strong impact on this ability. Distribution channel control represents, among other things, a means for reaching a particular segment of or position in the market. In the case of followers, such control can take on disproportionate importance since it can ensure that followers are not adversely af-

fected by the pioneer's ability to tie up particular distribution channels using exclusive distribution arrangements. Pioneers, on the other hand, may derive less benefit from distribution channel control since their success tends to be less tied to marketing "push" strategies which are facilitated by controlling distribution channels (Kerin, Varadarajan, and Peterson 1992). It is hypothesized:

> *H9:* In benign environments, the relationship between sales growth rate and relative distribution channel control is significantly more positive among followers than pioneers.

Relative number of distribution channels

A final competitive tactic expected to differentially correlate with growth for pioneers and followers is relative number of distribution channels employed. As noted above, pioneers achieve sustainable bases for competitive advantage by quickly and widely distributing their products, thereby preempting the most attractive market segments and forcing followers to play catch up (Hauser and Shugan 1983). This can be accomplished either through selective distribution, in which a select number of channel members (less than all who would be willing) carry the product or intensive distribution in which the pioneer tries to get as many channel members as possible to carry the product. As a general rule, intensive distribution tends to be preferred when maximizing market coverage is the objective (Kotler 1991). Therefore, given the common desire of pioneers to quickly enter and, to the extent possible, saturate the market, intensive distribution strategies may be particularly effective among these firms. Conversely, and consistent with the preceding hypothesis, selective distribution may be preferred among followers since more control over channel members may be possible under this latter distribution arrangement. Thus, it is hypothesized:

> *H10:* In benign environments, the relationship between sales growth rate and relative number of distribution channels is significantly more positive among pioneers than followers.

Table 1 summarizes the anticipated bases for competitive success in hostile and benign environments. It also shows how the variables used to operationalize these bases for competitive success are hypothesized to relate to firm sales growth rate in hostile and benign environments.

METHODS

Sample

Data for this research were requested via a mailed questionnaire from 418 firms in Southwestern Pennsylvania. The heterogeneous industrial base of this geographical area (see DeAngelis 1989; *Harris Pennsylvania Industrial Directory* 1993) makes it particularly appropriate for studying managerial phenomena hypothesized to vary with the environment, as in this research.

The 418 firms were selected from the larger population of firms in the area—as identified by the Southwestern Pennsylvania Industrial Resource Center, a regional economic development organization—because they met four criteria judged to be essential for the study. First, the firms had to be manufacturing-based organizations. Thus,

TABLE 1 Summary of Hypotheses

Key Bases for Competitive Success	Hypothesized Correlation with Sales Growth Rate
Hostile environments	
Product price:	
– Relative price	H1: More positive among Pioneers
Breadth of products/markets:	
– Product line breadth	H2: More positive among Followers
– Market breadth	H3: More positive among Pioneers
Cost-related factors:	
– Advanced process technology	H4: More positive among Followers
– Purchasing Advantage	H5: More positive among Followers
Benign environments	
Differentiation-enhancing factors:	
– Product quality	H6: More positive among Pioneers
– Product warranty	H7: More positive among Pioneers
– Advertising & promotion	H8: More positive among Pioneers
Distribution-related factors:	
– Control over distribution channels	H9: More positive among Followers
– Number of distribution channels	H10: More positive among Pioneers

macro-industry effects are effectively controlled in the research through the elimination of multiple and diverse macro-industry groups (e.g., agriculture, mining, wholesale, and retail trade) from the sample. Additionally, since most of the existing related research has relied on samples of manufacturing firms, the use of such firms in the current research helps to ensure comparability of results. Second, the firms must have had 50 or more employees, as identified through secondary sources. Given the expectation of a negative relationship between pioneering and firm size (relative to larger firms, smaller firms often exhibit a stronger propensity to pioneer new products), this criterion excluded from the study very small firms (i.e., fewer than 10 employees) whose size could potentially confound the research results.

Third, only single (or primary) industry firms were chosen for the research. Diversified businesses, which can mix the pioneering and follower modes across their product lines, were excluded from the sample. Finally, the firms must have been free-standing businesses or divisions of larger corporations. This criterion was chosen because the research focuses on business-level (vs. corporate-level) strategic management issues.

Following the procedure described by Greer and Ireland (1992), two questionnaires were sent to the senior-most executives in each of the 418 firms. The senior-most executive (primary respondent) was asked to personally complete the questionnaire and to have a second senior executive with a good overview of the business and some strategy-making responsibility (secondary respondent) do the same. Telephone calls were made to all senior-most executives who had not responded by one month after the initial mailing. One hundred and seventy questionnaires (115 from the primary respondents and 55 from the secondary respondents) were eventually received from 115 of the contacted firms, for an organizational response rate of 27.5% (115/418). The current study focused on 103 of the 115 firms that returned the questionnaire. The twelve firms excluded from the current research were omitted because (1) necessary industry data were not available for these firms, (2) the firm failed to furnish essential performance

data and these data could not be found in secondary sources, or (3) the firm's size had dropped below the pre-established cut-off of 50 employees.

The secondary respondent data were used for corroboration purposes (as discussed later) and the primary respondents were treated as the "key informants" in this research, following the guidelines suggested by Huber and Power (1985). Specifically, to ensure that the respondents were familiar with the research issues and could respond accurately, the senior-most managers (CEOs, presidents, or division general managers) of the sampled firms were targeted for data collection as the primary respondents. As noted by Hambrick (1981), general managers are typically the most knowledgeable persons regarding their companies' strategic processes and overall business situations. Second, to minimize social desirability bias in the measurement of constructs, the respondents were reminded that there were no right nor wrong answers to the questions being asked of them, and they were guaranteed confidentiality. Third, to motivate the respondents to participate seriously in the study, all respondents were offered summaries of the results. Finally, the data were collected using carefully structured measures and a questionnaire that was reviewed by a sample of ten general managers (not included in the final sample), all of whom indicated that the measures were appropriately and unambiguously worded.

The 103 firms in the final sample operate in 75 different 4-digit SIC codes, with no single 4-digit SIC code represented by more than 6 firms. Sixty-four of the 103 firms are privately held, and 39 are publicly owned. Forty-seven of the sampled firms are parts (i.e., divisions or subsidiaries) of larger corporations, while 56 are independent, free-standing companies. The average number of employees and age of the firms in the sample are 794.71 employees (S.D. = 2,446.86) and 48.79 years (S.D. = 31.41), respectively. The firm age variable has a range of 5 to 125 years and skewness of 0.460. The firm size (employees) variable has a range of 50 to 21,000 and a skewness of 6.510. The large standard deviations for firm age and size are attributable to a small number of "outliers" whose advanced age or large size pull up the mean values of the age and size variables. These outliers are otherwise "normal" firms whose scores on the other variables are not predicted by their age or size. As such, these firms were retained in the analyses. Moreover, log transformations of the age and size variables yielded no significant differences in the analytical results. The non-transformed size and age data are included in all relevant tables (i.e., Tables 2, 3, and 4) for the sake of clarity.

A *t*-test comparison of the average number of employees, annual sales revenue, and age of the responding firms with these same data for the nonresponding firms (when available through secondary sources—*Harris Pennsylvania Industrial Directory* 1993, *Ward's Business Directory of U.S. Private and Public Companies* 1993, etc.) revealed no differences (i.e., $p > 0.10$) between these two groups. Thus, the sample appears to be representative of the population from which it was drawn on the basis of several key organizational attributes. Similarly, a *t*-test comparison of the early respondents (i.e., those firms that returned the questionnaire before being contacted a second time) and the late respondents (i.e., those firms that returned the questionnaire only after having been asked a second time) revealed no differences (i.e., $p > 0.10$) between these subgroups in terms of number of employees, annual sales revenue, age, or any of the research variables assessed in this study. These results further suggest the absence of response bias if it is assumed that the latter subgroup of firms would not have responded had they not been contacted a second time.

TABLE 2 Research Variable Summary Statistics

Variable	Mean	Standard Deviation	Cronbach Alpha Coefficient
Sales growth rate (%)	0.00	12.68	NA
Pioneering	3.58	1.32	0.79
Hostility	4.29	0.99	0.71
Relative price	5.03	1.39	0.73
Product quality	5.01	1.21	0.68
Product warranty	3.77	1.65	NA
Product line breadth	4.36	1.63	0.89
Advertising & promotion	2.94	1.41	0.89
Distribution channel control	4.00	1.46	NA
Number of distribution channels	3.33	1.59	NA
Market breadth	5.50	1.94	0.91
Advanced process technology	3.87	1.43	0.79
Purchasing advantage	3.62	1.24	0.75
Size (employees)	794.71	2446.86	NA
Age (years)	48.79	31.41	NA

Measures

The measures employed in this research assessed firm (sales) growth rate, firm size (number of employees) and age, pioneering/following, environmental hostility level, and the 10 competitive tactics on which the hypotheses are based. Table 2 shows the mean, standard deviation, and Cronbach α coefficient (where appropriate) for each research variable. Table 3 is the zero-order correlation matrix for these variables.

The α coefficients for all multi-item scales exceed the minimum standard suggested by Nunnally (1970). Moreover, an examination of the data furnished by the 55 two-respondent firms revealed a high degree of interrater agreement on how the respondents rated the research variables. For each variable, there is a correlation between the two respondents that is significant at the $p < 0.05$ level or better, and the average interrater correlation across the research variables is $r = 0.57$. Additionally, *t*-tests comparing the primary and secondary respondents' mean scores on each research variable revealed no significant differences between these two groups at the $p < 0.05$ level. (The data furnished by the primary respondent—the senior-most executive in each firm—were used in the analyses.) Overall, the level of interrater agreement on the key variables in this research is encouraging.

Firm growth rate

Effective management under hostile environmental conditions is often assessed in terms of a firm's ability to grow. Sales growth rate, in particular, is considered an appropriate performance criterion in hostile environments. As argued by Edelstein (1992: 99), "Since a fundamental characteristic of hostile environments is intensifying competition in a market characterized by flat demand, the ability of a firm to maintain—or increase—its sales level and market share in the face of increasing challenge from both domestic and foreign competitors must be viewed as a critical indicator of its short term survival and adjustment." One can make an equally compelling argument that sales growth rate is an appropriate performance criterion for firms in benign environments. In these latter environments, sales growth rate is often used as a measure of the firm's ability to exploit

TABLE 3 Correlation Matrix

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Sales growth rate (%)															
2. Pioneering	0.06														
3. Hostility	−0.03	−0.25***													
4. Relative price	0.03	0.16*	−0.26***												
5. Product quality	−0.00	0.28***	−0.15	0.26***											
6. Product warranty	0.09	0.24**	0.12	−0.06	0.14										
7. Product line breadth	−0.12	0.31***	−0.16	0.23**	0.15	0.20**									
8. Advertising and promotion	0.13	0.36****	−0.24**	0.06	0.08	0.16	0.33****								
9. Dist. channel control	−0.06	0.30***	−0.09	0.17*	0.14	0.27***	0.17*	0.18*							
10. No. of dist. channels	−0.06	0.16	−0.16*	−0.14	0.04	0.17*	0.22**	0.22**	0.39****						
11. Market breadth	−0.09	0.29***	−0.22**	0.31***	0.35****	0.13	0.27***	−0.03	−0.00	0.05					
12. Advanced process tech.	0.08	0.34****	0.11	−0.17	0.35****	0.25**	0.17*	0.20**	0.09	0.16*	0.10				
13. Purchasing advantage	0.16	0.24**	0.06	−0.12	0.28***	0.37****	0.16*	0.23**	0.25**	0.13	0.10	0.42****			
14. Size (employees)	−0.06	0.11	−0.17*	0.14	0.06	−0.02	0.11	0.00	0.03	0.05	0.08	0.04	0.03		
15. Age (years)	−0.07	0.13	−0.09	0.14	0.05	0.03	0.07	0.05	0.01	−0.14	−0.03	−0.08	−0.08	0.23**	

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$; **** $p < 0.001$.

product-market opportunities (see Castrogiovanni 1991). Given the current study's categorization of firm environments along the benign-to-hostile dimension, it seemed particularly appropriate to measure firm performance in terms of sales growth rate. This decision is further validated by the fact that sales growth rate is not consistently nor strongly affected by firm-specific fixed effects, as are many commonly-used profitability measures, like ROI. Such effects can, to various degrees, "contaminate" firm performance measures (see, for example, Jacobson 1990). Moreover, Capon, Farley, and Hoenig's (1990) meta-analysis of performance-related studies revealed that sales growth rate is a generally-accepted performance indicator that's positively and robustly associated with other measures of firm financial success.

Firm sales growth rate was measured as the firm's latest three-year average rate of growth (vs. absolute value of growth) in sales revenue. Actual sales revenue figures were collected directly from the responding firms, and these figures were corroborated with secondary data whenever possible. In instances where both self-reported and secondary sales revenue data were available (i.e., among the independent, publicly-owned firms in the sample), the self-reported data were identical to the secondary data or the self-reported data were rounded figures that approximated the secondary data.

Because of the differing growth rates of the industries represented in the sample, the three-year average growth rate of the firm's principal industry (as calculated from the U.S. Department of Commerce's *Annual Survey of Manufactures*) was subtracted from the firm's growth rate. This industry-controlled relative growth rate figure was then used as the dependent variable in the hypothesis testing. Importantly, since the self-reported sales revenue data corresponded highly with the secondary sales revenue data, relying on the same data source for the independent and dependent variables—a potential source of common methods error—is not a significant concern in the current research.

Pioneering/following

Golder and Tellis (1993: 159) define a market pioneer as "the first firm to sell in a new product category" where a product category is defined as "a group of close substitutes such that consumers consider the products substitutable and distinct from those in another product category." These themes of being first-to-market and distinctive are similarly reflected in Carpenter and Nakamoto's (1989) definition of a pioneer as a firm which is first to introduce a "competitively distinct" product to the market. Therefore, a 4-item, 7-point scale which incorporated these themes was developed to assess the construct of pioneering (see Appendix). Higher mean scores on this measure ($\alpha = 0.79$) indicate a greater propensity to pioneer new and distinct products, whereas lower mean scores indicate a stronger follower orientation. (In the interests of brevity and simplicity, this is referred to as the "pioneering" scale rather than the "follower-to-pioneer" scale.)

Pioneering behavior, or the lack thereof, is often exhibited as a consistent strategic practice among single-industry firms, at least in the short-to-medium term (Bobrow and Shafer 1987). That is, non-diversified, single-industry firms tend to characteristically view themselves as exhibiting greater or lesser overall degrees of product-market leadership/followership relative to their industry rivals. This observation suggested that the construct of pioneering need not be operationalized as a nominal variable (i.e., a clear pioneer or a clear follower). Rather, pioneering could be conceptualized as an overall strategic posture, similar to the way corporate entrepreneurship has been conceptualized and assessed in empirical studies (e.g., Miller 1983; Smart and Conant 1994), and

placed on a continuum along which varying levels of following-pioneering activity can be plotted.

Due to the sampled firms' small average size and largely private ownership status, relevant secondary data were simply not available as bases for assessing the construct validity of the study's more subjective measures. Nonetheless, it was possible to test for response consistency (a surrogate for internal reliability) by collecting data on measures expected to correlate with this study's principal variables. Regarding the pioneering scale, response consistency was assessed by examining this scale's correlation with the theoretically-related construct of competitive proactiveness. As described by Venkatraman (1989), Miller and Friesen (1984), and others, proactiveness is a fundamental dimension of strategic behavior reflected in a propensity to shape one's environment by introducing new products and technologies ahead of competitors and by assuming an overall leadership role within one's industry or particular product-market domain. Pioneers, as described and operationalized in this study, are competitively proactive. Therefore, positive and significant correlations were expected between the pioneering scale and the two proactiveness measures.

One proactiveness measure was assessed on a 7-point, Likert-type scale ranging from, "In dealing with its competitors, my business unit typically responds to actions which competitors initiate" (=1) to "In dealing with its competitors, my business unit typically initiates actions to which competitors then respond" (=7). The other proactiveness measure, also assessed on a 7-point, Likert-type scale, was worded, "In dealing with its competitors, my business unit is very seldom the first business to introduce new products/services, administrative techniques, operating technologies, etc." (=1) to "In dealing with its competitors, my business unit is very often the first business to introduce new products/services, administrative techniques, operating technologies, etc." (=7). Consistent with expectations, these two measures are correlated at the $r = 0.47$ ($p < 0.001$) and $r = 0.57$ ($p < 0.001$) levels, respectively, with the pioneering scale.

Perceived environmental hostility

This construct was measured with a 6-item, 7-point scale (see Appendix). Higher mean scores on this measure ($\alpha = 0.71$) indicate greater perceived environmental hostility, whereas mean lower scores indicate a more benign or munificent environment.

As with the previous measure, response consistency was assessed by examining the hostility scale's association with a theoretically-related variable. Hostility, as commonly conceptualized and operationalized in this research, is partially manifested in low industry profit margins. Therefore, it was expected that a decline in the average profitability (ROS) of the firms' primary industries over the latest three-year period would be associated with the respondents' perceptions of their environments' hostility levels. Consistent with this expectation, the hostility index is significantly and negatively correlated with the change in industry profit margins ($r = -0.40$, $p < 0.001$), as reported by the respondents.

Competitive tactics

Research has revealed a number of competitive tactics that appear to vary with a company's market entry order or pioneering status. Quite often the empirical literature on pioneering has contrasted the marketing mixes of pioneers vs. later market entrants (e.g., Parry and Bass 1990; Moore, Boulding, and Goodstein 1991) or examined how

successful pioneers differ from unsuccessful pioneers in terms of these marketing mix variables (e.g., Golder and Tellis 1993; Lambkin 1992). In addition, several studies of pioneering suggest that factors which impact a firm's overall cost structure—like internal "operations" variables—can significantly moderate the effectiveness of, or co-vary with, market entry order (e.g., Robinson and Fornell 1985; Flaherty 1983). Therefore, the competitive tactics examined in the current research included several marketing mix variables as well as variables that may affect a firm's cost structure.

The competitive tactics instrument employed in this research is composed of 22 statements to which the respondent was asked to indicate his/her level of agreement, ranging from "Strongly Disagree" (=1) to "Strongly Agree" (=7). These 22 statements formed the basis for the 10 single- and multi-item scales shown in the Appendix. As with the pioneering and perceived environmental hostility scales, scores on the multi-item competitive tactics scales were computed as the mean scores on the scale items. The competitive tactics scales assess the following constructs: relative price ($\alpha = 0.73$), product quality ($\alpha = 0.68$), product warranties (single-item scale), product line breadth ($\alpha = 0.89$), advertising and promotion ($\alpha = 0.89$), distribution channel control (single-item scale), number of distribution channels (single-item scale), market breadth ($\alpha = 0.91$), advanced process technology ($\alpha = 0.79$), and purchasing advantage ($\alpha = 0.75$). Consistent with much of the empirical literature on pioneering, these competitive tactics were assessed relative to the competition in order to control for industry differences in strategic behavior (e.g., DeCastro and Chrisman 1995).

The set of competitive tactics examined in this research was chosen to (1) include key variables which, as demonstrated in the "Theoretical Framework" section, have been shown to be associated with pioneering in previous research (e.g., product price, product quality, market breadth), (2) reflect the "4 P's" of marketing strategy (product, price, promotion, and placement), which underlie firms' efforts to create and sustain superior market positions (Kotler 1991), and (3) operationalize the fundamental bases for competitive advantage—differentiation and overall cost leadership—commonly recognized in the competitive strategy literature (Porter 1980, 1985).

Analytical Techniques

Multiple regression analysis employing 3-way interaction terms (i.e., pioneering score $\times$ hostility score $\times$ competitive tactic score) was considered as a means to test the hypotheses. However, this analytical technique was rejected for two reasons. First, the theory developed earlier does not imply that opposite effects will exist in hostile and benign environments regarding how competitive tactics should correlate with firm growth among pioneers and followers. However, such "opposite" effects are what 3-way interaction terms are constructed to uncover. Thus, 3-way interaction terms are designed to identify relationships in data that were not hypothesized to exist. Second, multicollinearity among the independent variables would make it difficult to accurately interpret any regression analysis results. (For example, the pioneering variable is correlated at the $r = 0.80$ level with the pioneering $\times$ hostility cross-product/interaction term.) Such multicollinearity "masks" the magnitude of the effects of variables entered late into a regression equation. This is particularly problematic since 3-way interaction terms should be entered after all other independent variables are entered, thus controlling for the effects of these other variables on the dependent variable.

Thus, an analytical approach that involved the use of cluster analysis, subgroup

analysis, and correlational analysis was judged to be more appropriate and employed in the current research. Specifically, the hypotheses could be tested by first dividing the sample into four subgroups of firms: pioneers in hostile environments, followers in hostile environments, pioneers in benign environments, and followers in benign environments. A 2×2 framework (with pioneering and hostility as its axes) had to be created for hypothesis testing purposes. However, since the pioneering and hostility constructs were assessed in this research using continuous rather than categorical scales, judgment was required in sorting the firms into the subgroups.

Two techniques were considered as bases for sorting the sampled firms into the four cells of the 2×2 framework. First, a mean or median split on the pioneering and hostility scales would allow the sample to be divided into the four cells of a pioneering-hostility 2×2. However, segmenting a sample on the basis of scale mean or median values is often regarded as unnecessarily "arbitrary". Therefore, Ward's method of hierarchical cluster analysis was used to sort the sampled firms into subgroups. This technique allows cases to be clustered according to natural division points in the data and takes into account interrelationships among the clustering variables (Everitt 1974). The cluster solution was not limited to four groups. Nonetheless, as noted below, the clustering algorithm produced a four-cluster solution which represented the natural underlying structure of the data and which conveniently provided the 2×2 framework needed for the analysis. Importantly, the absence of outliers in the database, to which clustering algorithms can be particularly sensitive, helped to minimize concerns over the possibility of nonrepresentative or otherwise invalid cluster analysis results.

Once the sample was divided into the subgroups using cluster analysis (with pioneering and environmental hostility as the clustering "input" variables), a modified Fisher Z-transformation statistic, advocated by Schmidt, Hunter, and Pearlman (1981), was used to test the hypotheses by comparing the correlations between firm sales growth rate and the individual competitive tactics for relevant clusters of firms.

RESULTS

A careful examination of changes in the squared euclidean distance between various cluster solutions revealed that a four-cluster solution best fits the data. The appropriateness of this solution was corroborated through a visual inspection of the dendrogram which depicts the points at which cluster separations occur. Table 4 shows the means and standard deviations for several of the key research variables in each of the four clusters, as well as the results of statistical tests for differences across the clusters.

There are several noteworthy points regarding Table 4. First, the four clusters have mean pioneering scores of approximately 2, 5, 3, and 4, respectively. Thus, there is a range of pioneering represented across the four clusters rather than two distinct pioneer clusters and two distinct follower clusters. However, when the pioneering scores within each cluster are examined in conjunction with the hostility scores, the results become more interpretable. Specifically, the two clusters with the highest hostility scores (clusters 1 and 4) have very similar hostility scores (both around 5.0); the same is true of the two clusters with the lowest hostility scores (clusters 2 and 3 both have hostility scores of about 3.5). Importantly, in the hostile environment clusters of 1 and 4 as well as in the benign environment clusters of 2 and 3 the mean pioneering scores differ by more than two points. As such, while there is a range of pioneering represented across the four clusters, when one examines pioneering scores within an environmental setting

TABLE 4 Cluster Means and (Standard Deviations): Pioneering, Hostility, Sales Growth Rate, Size, and Age

	Cluster 1 Hostile Env. Followers (n = 21)	Cluster 2 Benign Env. Pioneers (n = 26)	Cluster 3 Benign Env. Followers (n = 23)	Cluster 4 Hostile Env. Pioneers (n = 33)	Overall F-value	Contrast t-values			
						Hostile vs. Benign Env.	Pioneers vs. Followers	Hostile Env.: Pion. vs. Fol.	Benign Env.: Pion. vs. Fol.
Pioneering	1.88 (0.47)	5.04 (0.81)	2.95 (0.45)	3.96 (0.82)	92.56**	−8.45**	−16.45**	−11.93**	11.36**
Hostility	4.97 (0.74)	3.58 (0.41)	3.36 (0.69)	5.08 (0.57)	57.57**	12.32**	−1.30	−0.57	1.32
Sales growth rate (%)	−4.01 (13.67)	−0.45 (14.88)	1.02 (12.55)	2.21 (9.91)	1.10	−0.47	−0.94	−1.76*	−0.41
Size (employees)	270.90 (394.66)	1342.88 (2510.76)	1254.87 (4354.36)	375.42 (518.26)	1.36	−1.88*	−0.19	−0.84	0.09
Age (years)	45.48 (33.13)	60.46 (28.38)	46.87 (30.72)	43.03 (32.05)	1.71	−1.51	−0.90	0.28	1.53

* $p < 0.10$; ** $p < 0.001$.

(thus controlling for environment), there is a clear difference in propensity to pioneer between the two clusters of firms. Cluster 1 firms are hostile environment followers; cluster 2 firms are benign environment pioneers; cluster 3 firms are benign environment followers; and cluster 4 firms are hostile environment pioneers. The fact that the pioneering scores of the firms in hostile environments are, on average, lower than those of the firms in benign environments is consistent with the negative and significant correlation between pioneering and hostility ($r = -0.25$, $p < 0.01$) reported in Table 3.

A second noteworthy point regarding Table 4 is the absence of an overall sales growth rate difference across the four clusters. Moreover, there is no sales growth rate difference between the hostile environment and benign environment clusters, or between the pioneering firm and following firm clusters. These results suggest two conclusions. First, the procedure used to control for industry growth rate among the sampled firms has worked. Relative to their industry averages, hostile environment firms perform no worse than benign environment firms. It can also be concluded that, among the sampled firms, pioneers grow neither more nor less rapidly than followers. This result is supportive of the literature which argues that pioneering is not inherently superior to followership as a means for promoting firm performance (e.g., Mitchell 1991; Golder and Tellis 1993).

A final noteworthy point regarding Table 4 is that, as shown, there are no overall size nor age differences across the four clusters of firms (although the firms in the hostile environment clusters are, on average, somewhat smaller ($p < 0.10$) than the firms in the benign environment clusters). This result suggests that controlling for size and age differences will be unnecessary when testing the hypotheses.

Table 5 shows the scores of the competitive tactics in each of the four clusters as well as contrast t-values for relevant between-cluster comparisons. To summarize some of the key findings pertaining to pioneering in hostile environments, the results in Table 5 suggest that pioneers score significantly higher than followers in terms of product warranty strength, advertising and promotion intensity, control over distribution channels, utilization of advanced process technology, and purchasing advantage factors. The results in Table 5 suggest that, in more benign environments, pioneers are more likely than followers to employ strategies based on high prices, superior quality products, broad product lines, broad geographical market coverage (i.e., served markets), and advanced process technologies. Thus, in both hostile and benign environments, the pioneers in the sample exhibited a greater tendency than the followers to rely on advanced process technologies. Table 5 also shows that number of distribution channels employed (relative to one's competitors) did not differ between the pioneers and the followers in either environmental setting. Interestingly, as indicated above, the majority of the competitive tactics examined (8 of the 10) were differentially relied upon by pioneers and followers in one environmental setting or the other, but not both. This result supports the premise of this research that the competitive strategies employed by pioneers and followers will vary with the environmental setting in which these firms operate.

The results of the analyses conducted to test the hypotheses are presented in Table 6. In particular, this table shows the zero-order correlations between firm sales growth rate and the various competitive tactics in each cluster. This table also shows the F-values that result from applying the aforementioned modified Fisher Z-transformation statistic (see Schmidt et al. 1981) to particular pairs of correlation coefficients. This statistic is used to determine if pairs of correlation coefficients are significantly different, as implied by the individual hypotheses. For example, hypothesis 1 stated that in hostile environ-

TABLE 5 Cluster Means and (Standard Deviations): Competitive Tactics

	Cluster 1 Hostile Env. Followers (n = 21)	Cluster 2 Benign Env. Pioneers (n = 26)	Cluster 3 Benign Env. Followers (n = 23)	Cluster 4 Hostile Env. Pioneers (n = 33)	Overall F-value	Contrast t-values			
						Hostile vs. Benign Env.	Pioneer vs. Followers	Hostile Env.: Pion. vs. Fol.	Benign Env.: Pion. vs. Fol.
Relative price	4.97 (1.34)	5.71 (1.30)	4.83 (1.72)	4.68 (1.09)	3.12*	−1.57	−1.06	0.85	2.02**
Product quality	4.52 (1.49)	5.47 (1.01)	4.87 (1.22)	5.05 (1.05)	2.69*	−1.65	−2.42**	−1.62	1.79*
Product warranty	3.24 (1.67)	3.88 (1.66)	3.30 (1.64)	4.33 (1.51)	2.80**	0.59	−2.60**	−2.44**	1.26
Product line breadth	4.15 (1.74)	5.00 (1.42)	3.77 (1.58)	4.39 (1.63)	2.57*	−0.35	−2.31**	−0.54	2.70***
Advertising and promotion	2.12 (1.50)	3.48 (1.28)	3.15 (1.34)	2.91 (1.33)	3.96**	−2.89***	−2.00*	−2.09**	0.75
Dist. channel control	3.19 (1.78)	4.35 (1.38)	3.96 (1.30)	4.27 (1.26)	3.22**	−1.48	−2.60**	−2.74***	0.96
No. of dist. channels	2.95 (1.82)	3.54 (1.53)	3.52 (1.68)	3.27 (1.44)	0.66	−1.31	−0.53	−0.72	0.04
Market breadth	4.81 (2.49)	6.44 (0.74)	5.15 (2.16)	5.45 (1.86)	3.39**	−1.69*	−2.45**	−1.02	2.73**
Advanced process tech.	3.08 (1.40)	4.29 (1.33)	3.41 (1.15)	4.35 (1.44)	5.62***	−0.50	−4.03****	−3.40***	2.31**
Purchasing advantage	3.00 (1.34)	3.73 (1.28)	3.58 (1.05)	3.96 (1.17)	2.78**	−0.72	−2.29**	−2.84***	0.44

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$; **** $p < 0.001$.

TABLE 6 Zero-order Correlations between Sales Growth Rate and the Individual Competitive Tactics

	Cluster 1 Hostile Env. Followers (n = 21)	Cluster 2 Benign Env. Pioneers (n = 26)	Cluster 3 Benign Env. Followers (n = 23)	Cluster 4 Hostile Env. Pioneers (n = 33)	F-values: Correlation Comparisons[#]	
					Hostile Env.: Pion. vs. Fol.	Benign Env.: Pion. vs. Fol.
Hostile environment Hypotheses						
H1: Relative price	**−0.49***	−0.12	0.36*	**0.45*****	**3.26*****	1.64
H2: Product line breadth	**0.19**	−0.09	−0.06	**−0.49*****	**2.39****	0.10
H3: Market breadth	**−0.38***	−0.01	−0.24	**0.23**	**2.14****	0.79
H4: Advanced process tech.	**0.51***	0.11	−0.33	**−0.17**	**2.39****	1.51
H5: Purchasing advantage	**0.34**	0.15	0.15	**−0.15**	**1.72****	0.00
Benign environment Hypotheses						
H6: Product quality	−0.29	**0.29**	**−0.06**	−0.02	0.95	**1.16**
H7: Product warranty	0.43*	**0.15**	**−0.29**	−0.10	1.86*	**1.51***
H8: Advertising & promotion	0.06	**0.29**	**−0.07**	0.09	0.11	**1.23**
H9: Dist. channel control	0.08	**−0.45****	**−0.7**	0.03	0.18	**1.30***
H10: No. of dist. channels	0.06	**0.10**	**−0.31**	−0.20	0.91	**1.40***

[#] One-tail tests are used to assess the statistical support for the hypothesized relationships; two-tail tests are reported in association with any statistically significant and unhypothesized results. The **boldface** figures are the relevant ones for the hypothesis tests. * $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

ments the relationship between sales growth rate and relative price is significantly more positive among pioneers than followers. As indicated by the significant F-value (3.26, $p < 0.01$) associated with the comparison of the relevant correlation coefficients (i.e., 0.45 and −0.49), this hypothesis is supported by the data.

Hypothesis 2 argued that, in hostile environments, the relationship between sales growth rate and relative product line breadth would be significantly more positive among followers than pioneers. This hypothesis is also supported by the data ($p < 0.05$). Consistent with hypothesis 3, the data indicate that, in hostile environments, the relationship between sales growth rate and market breadth is significantly more positive ($p < 0.05$) among pioneers than followers. According to hypothesis 4, in hostile environments, the relationship between sales growth rate and utilization of advanced process technology was expected to be significantly more positive among followers than pioneers. There is significant support within the data ($p < 0.05$) for this hypothesis. Finally, hypothesis 5 is also supported ($p < 0.05$). It was found that, in hostile environments, the relationship between sales growth rate and relative purchasing advantage is significantly more positive among followers than pioneers. In short, the five hypotheses regarding pioneering vs. following in hostile environments are all supported. Just as significant, none of the first five hypotheses are supported when the firms in benign environments are used as the hypothesis-testing sample. Thus, the proposition advanced earlier in the manuscript regarding the distinct bases for competitive success among pioneers and followers in hostile environments is strongly supported.

The results of hypothesis testing in the benign environment sample are also shown in Table 6. Hypothesis 6 asserted that, in benign environments, the relationship between sales growth rate and relative product quality would be significantly more positive among pioneers than followers. Although the difference in the pioneer versus follower correlations between quality and sales growth is in the direction suggested by hypothesis 6, the magnitude of this difference is not sufficient to achieve statistical significance. Thus, hypothesis 6 is not supported by the data. However, the results indicate that, in benign environments, the relationship between sales growth rate and relative product warranty strength is significantly, albeit modestly ($p < 0.10$), more positive among pioneers than followers. Therefore, hypothesis 7 is supported by the data. The results pertaining to hypothesis 8, like those pertaining to hypothesis 6, are in the expected direction, but they fail to support the hypothesis. In benign environments, the relationship between sales growth rate and relative advertising and promotion expenditures is not significantly more positive among pioneers than followers.

Both hypotheses involving distribution-related matters are modestly supported by the data. Consistent with hypothesis 9 ($p < 0.10$ level), in benign environments, the relationship between sales growth rate and relative distribution channel control is significantly more positive among followers than pioneers. Similarly, the data support hypothesis 10's assertion that, in benign environments, the relationship between sales growth rate and relative number of distribution channels is significantly more positive among pioneers than followers ($p < 0.10$).

In summary, three of the five the benign environment hypotheses are supported by the data (nos. 7, 9, and 10). Moreover, just as the hostile environment hypotheses (H1–H5) receive no support when tested using a sample of benign environment firms, the results pertaining to hypotheses 7, 9, and 10 do not hold in the subsample of hostile environment firms. The results pertaining to hypotheses 6 through 10 generally support the proposition advanced earlier in the manuscript regarding the specific and unique

correlates of success among pioneers and followers in benign environments. The collective results support the premise of this research that the elements of the competitive strategy which relate most strongly to firm growth among pioneers and followers will vary across environmental settings.

DISCUSSION AND CONCLUSIONS

The research described in this paper examined how particular competitive tactics differentially relate to firm growth among pioneers and followers. Specifically, the results indicate that, in hostile environments, factors associated with product price, product costs (i.e., the utilization of advanced process technologies and the existence of purchasing advantages), product line breadth, and market breadth are differentially related to firm growth among pioneers and followers. In benign environments, factors associated with product superiority (i.e., relative product warranty strength) and distribution channel decisions (i.e., relative control over distribution channel members and relative number of distribution channels employed) are differentially related to firm growth for pioneers and followers.

Because of the research design, this study contributes to two separate bodies of literature. It contributes to the pioneering literature by corroborating several findings of the PIMS-based studies regarding tactical differences between pioneers and followers and by further documenting the relevance of market entry order as a moderator of the performance associated with particular tactics (e.g., Lambkin 1988; Urban, Carter, Gaskin, and Mucha 1986; Moore, Boulding, and Goodstein 1991). More importantly, however, this study extends the dominant empirical research paradigm in this area by testing for differences in the tactic-performance relationships among pioneers and followers in two distinct environments. The empirical results support the position that the effective implementation pioneering and following strategies may require environment-specific tactics.

This study also contributes to the literature on managing under hostile conditions by having theorized about and identified common and effective bases for competition in these settings. Others have pursued similar objectives in their research (e.g., Potter 1994; Covin and Slevin 1989). What sets the current study apart from other empirical research on hostility is this study's consideration of hostile and benign environments as two separate contexts that require unique tactical approaches, not simply more or less of the same tactics. Pioneering is a theoretically logical response to hostility (e.g., Miller and Friesen 1984). Nonetheless, the question of how pioneers should seek to compete in hostile environments has not received much attention from researchers. This research suggests some tentative answers to this question by way of comparing tactic-sales growth relationships between firms with differing propensities to pioneer and operating under different levels of environmental hostility.

Based on the comparisons made within the data, several tentative managerial implications can be drawn from the results. Regarding firms in hostile environments, the results suggest that pioneering can be used as a means by which firms can break out of the dominant price-based mode of competition and grow in spite of charging high prices. Apparently, the distinctiveness of the pioneering firm's product can elevate it above the price wars of a hostile environment and allow the firm to competitively excel through the creation of a less price-sensitive segment within the market. This ability of pioneers to excel in hostile environments seems to be further facilitated by limiting product line

breath to a small number of product offerings that provide a tight fit with market needs. A "shotgun" approach to product development doesn't seem to work for these firms. Further, while there may not be a strong main effect of market breadth on sales growth among pioneers in hostile environments (i.e., the correlation between these variables was not statistically significant in this sample), pioneers appear to be relatively better served than followers from gaining a wide geographical distribution for their products. Thus, first-mover positional advantages (in the geographic sense) may be particularly relevant and beneficial for firms in hostile environments.

As noted by Kerin, Varadarajan, and Peterson (1992), most firms will more often be followers than pioneers. Therefore, this study's results involving effective strategic behavior among followers in hostile environments are at least as relevant as the results involving pioneers. Moreover, the managerial implications of these results are clear. The data suggest that followers in hostile environments should seek to reduce their cost structures in order to effectively sustain low price strategies. The nondistinctiveness of their product offerings seems to put followers in direct price-based competition with other incumbents of their industries. Accordingly, the follower with the most competitive price coupled with a supportive low cost structure will likely be the follower that grows. The employment of advanced process technologies was found to positively correlate with followers' growth, presumably because of the effect of this factor on the firms' cost structures.

On what bases should pioneers compete in benign environments? The data suggest that offering products with warranties superior to those of competitors may have a significantly more positive effect on sales growth among pioneers than followers. Still, the finding suggestive of this conclusion is based on a comparison of warranty-sales growth correlation coefficients for pioneers and followers, rather than an examination of the magnitude of this coefficient solely among the benign environment pioneers. Similarly, employing a large number of distribution channels appears to benefit pioneers more than followers, although this conclusion is also based on a comparison of correlation coefficients. In short, offering superior warranties and utilizing large numbers of distributors may not have particularly strong positive main effects on sales growth among benign environment pioneers. Yet, these effects are positive, which is the anticipated direction, and significantly more so than among the benign environment followers in the sample.

The results are less equivocal with regard to distribution channel control. The data suggest that benign environment pioneers which realize the greatest growth do not have extensive control over distribution channel members. The distribution channel control-sales growth correlation coefficient, as shown in Table 6, is $r = -0.45$ ($p < 0.05$). This finding suggests that the intensive distribution strategies pursued by many pioneers in their attempts to geographically preempt later entrants are inversely related to distribution channel control. Given knowledge of this trade-off, prudent pioneers may realize that they will grow more quickly if they target their distribution-related resources toward expanding their channels rather than toward controlling some smaller number these channels.

Finally, with the exception of the positive price-sales growth correlation ($r = 0.36$, $p < 0.10$), there are no significant tactic-sales growth correlations among the benign environment followers in the sample. This paucity of findings is partly a power-of-the-test issue as cluster 3—the benign environment followers—is least represented by the sampled firms. Still, the tactical prescriptions for firms in this category must be regarded as most tentative. In a relative sense—that is, relative to benign environment pioneers—

the data suggest that the followers are better off (i.e., they grow more quickly) when they avoid price-based competition. However, the absence of other statistically significant results precludes drawing more revealing managerial implications.

The findings and implications of the current study should be considered in view of its limitations. First, the research design was cross-sectional. Thus, cause-effect relationships cannot be definitively inferred from the research results. Second, because the research design required that the environment be treated as a variable (as opposed to held constant), multiple industry settings had to be represented by the sampled firms. However, the large number of industries in the sample ($n = 75$) relative to the total number of firms in the sample ($n = 103$) makes it difficult to disentangle between-industry effects from between-firm effects. Third, given the largely private ownership status of the sampled firms, secondary data were not available to help in assessing the construct validity of some of the study's key measures. As such, self-reported data on theoretically-related variables were used to evaluate the respondents' consistency when completing scales of similar constructs. The results of these consistency checks were encouraging. However, these results must be viewed as tentative because the primary data used in the comparisons are potentially subject to same-source bias. Finally, because pioneering and hostility were measured using continuous scales, the sampled firms could not be definitively classified as pioneers or followers, nor could their environments be definitively classified as hostile or benign. Rather, the results of a cluster analysis were used to sort the sample into the four cells of a 2×2 matrix. It could be argued that a better research design would have objectively pre-classified firms as pioneers or followers and environments as hostile or benign. Nonetheless, the current design has the effect of conservatively representing between-cell differences, which suggests that the observed results reflect robust underlying relationships.

Given the preceding limitations of the current study, and following from the results of this study, future research on the topics of coping with hostility and/or market entry order might fruitfully focus on at least three questions. First, to what extent is environmental hostility an inducement or inhibitor of pioneering behavior? Likewise, to what extent is a firm's prior performance an inducement or inhibitor of pioneering behavior? Research that more definitively addresses the causation issue could go far toward explaining pioneering successes and failures as well as the role of the environment in producing these results. Second, do results concerning the impact of market entry order on the strategy-performance relationship change as the operationalization of entry order is more precisely and objectively defined? For example, do the same basic strategies produce good results for different categories of followers (controlling, of course, for industry variation) and, if not, why? This type of research would help to further identify the practical significance of market entry order as a strategic contingency variable. Finally, are there consistent bases on which successful pioneers and successful followers compete as their environments exhibit changing attributes over time? Research into this question could help to reveal any requisite commonalities of successful pioneers and followers. It might also reveal effective modes of transitioning between pioneering and following as environmental conditions warrant.

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APPENDIX

The variables listed below were measured on 7-point Likert-type scales ranging from "Strongly Disagree" (=1) to "Strongly Agree" (=7).

The Pioneering Scale

We compete heavily on the basis of being first-to-market with new products.
We typically precede our major competitors in bringing new products to the market.

We offer products that are very similar to those of our major competitors. (reverse scored)
We offer products that are unique and distinctly different from those of our major competitors.

The Perceived Environmental Hostility Scale

The failure rate of firms in my industry is high.
My industry is very risky such that one bad decision could easily threaten the viability of my business unit.
Competitive intensity is high in my industry.
Customer loyalty is low in my industry.
Severe price wars are characteristic of my industry.
Low profit margins are characteristic of my industry.

The Competitive Tactics Scales

Relative Price

We offer our products at low prices relative to our major competitors. (reverse scored)
Our prices are among the lowest in the industry. (reverse scored)

Product Quality

We seek to maintain a serviceable level of product quality rather than a superior level of product quality. (reverse scored)
We offer products that are generally recognized by the market as being of higher quality than those offered by our major competitors.
We have no tolerance for less-than-perfect product quality.

Product Warranties

We offer product warranties that are superior to those offered by our major competitors.

Product Line Breadth

We offer a broad line of products relative to our major competitors.
We offer a wider variety of products than do our major competitors.
Our product line is more diverse than those of our major competitors.
Our product line is more focused/homogeneous than those of our major competitors. (reverse scored)

Advertising and Promotion

Our business unit has a high level of advertising expenditures relative to our major competitors.
Our business unit has a high level of promotional expenditures other than advertising relative to our major competitors.

Distribution Channel Control

We have more control over the distribution of our products than our major competitors have over their product distribution.

Number of Distribution Channels

Our products are sold through more distribution channels than are our major competitors' products.

Market Breadth

Our products are sold in broad geographical (i.e., national or international) markets.
Our products are sold exclusively in local or regional markets. (reverse scored)

Advanced Process Technology

Our plant(s)/facilities are more highly automated than those of our major competitors.
We utilize state-of-the-art process technology relative to our major competitors.
We rely heavily on proprietary process technology relative to our major competitors.

Purchasing Advantage

We have backwardly integrated to furnish a higher percentage of our raw materials/supplies than have our major competitors.
We have more favorable terms of purchase (e.g., discounts, delivery) with our suppliers than our major competitors have with theirs.
We have a cost advantage in our purchase of raw materials/supplies relative to our major competitors.