

Industry Environment And Business Strategy: A Comparison Of Contingency Theory Expectations And Relationships Between Small Manufacturing Firm Manager's Perceptions Of Environment And Strategy

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Abstract

Contingency theory suggests that that an appropriate match must be made between strategy and industry environment conditions. This study compared contingency theory expectations with the associations between perceptions of industry environment conditions and reported firm strategy, as reported by the firm's president and national sales manager. Confirming theory expectations, there were significant and positive associations between perceived industry technical/market turbulence and reported growth/differentiation strategy as well as significant and negative associations with low cost strategy. The direction and significance of these associations were similar regardless of which manager supplied the perception of technical/market turbulence or the reported strategy. However there were differences across the two manager's reports in the associations between strategy and perceptions of product differentiation, customer differentiation, and competitive intensity. Confirming theory expectations, there were significant and positive associations between perceptions of industry competitive intensity and the sales manager's reported use of low cost strategy, but not the president's reported use of that strategy. Confirming theory expectations, there was a significant and positive association between the president's (but not the sales manager's) perceptions of industry product differentiation and manager's reported use of growth/differentiation strategy. There was a significant and positive association between the sales manager's (but not the president's) perceptions of industry customer differentiation and manager's reported use of growth/differentiation strategy. The president's and sales manager's perceptions of product and customer differentiation had significant negative associations with the sales manager's (but not the president's) reported use of low cost strategy. The authors discuss potential explanations for these results and implications for managers.

Introduction

Since traditional contingency theorists saw strategies as necessary responses to environments, rather than influencer of environments, their tone has been considered deterministic (Child, 1972). Child argues for strategic choice, indicating that different strategies with very different structural requisites may thrive in very similar environments. Previous research (e.g. Dess and Davis, 1984) has established that Porter's generic strategies of differentiation, cost leadership, and focus are not mutually exclusive. Miller (1988) argued that

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environment can and should influence strategy (Dess and Beard, 1984). He also argued that strategy should influence the environment, causing firms to gravitate toward customers with particular preferences and inviting retaliation in kind from competitors (Lenz, 1981). His study suggested that strategies must be matched with complementary environments and structures to promote success.

Miller (1988) has measured the influence of environment perceptions of dynamism and heterogeneity on reported differentiation or low cost strategies using the self-reports of firm presidents. However, it is possible that the general variables of dynamism and heterogeneity may not adequately capture strategy-environment relationships. Dynamism may stem from changes in customer preferences or from changes in industry production technology or from new product technology. Hambrick and Lei's results (1985) indicate that customer and product differentiation are significant contingency variables in the strategy-performance relationship. Groups of customers are differentiated if their needs and buying motives are different. Products are differentiated if customers perceive significant differences in the features and benefits of competitive products. Sheth (1985) argues for a conceptualization of business markets based on product and customer differentiation. In addition, Porter (1980) argues that competitive intensity is a significant influence on strategy determination. Thus it appropriate to extend Miller's research to study the relationships between strategies, product/customer differentiation, and competitive intensity.

In addition, while firm presidents are responsible for strategic planning, national sales managers are responsible for implementing strategy. There could be significant differences between firm presidents and sales managers in the intended strategy of the president compared to realize strategy implemented by the sales manager. These differences could be influenced by differences in judgment as to what actions are appropriate for the firm's environment, especially if there are differences in the perceptions as to the nature of the environment. The president's judgments are influenced by concerns for firm profitability and internal efficiencies, while the national sales manager's judgments are influenced by concerns for customer relationships and sales volume. It is possible that the president's perceptions of industrial environments, such as changes in customer preferences, may not be sufficiently informed by field sales feedback about customers or competitors. Given the technical/production backgrounds of most small manufacturing firm presidents (Pelham and Clayson, 1988), these presidents may overestimate product differentiation, underestimate customer segment differentiation, and leading to strategies based on investments in process or product based technology. The sales manager's role may lead to underestimation of product differentiation, overestimation of customer segment differences, and overestimation of competitive intensity leading to strategies emphasizing price cutting or investments in marketing. Therefore study of the influence of environment perceptions on strategy should include the judgments of both types of managers, and not just firm presidents.

Thus, the purposes of this study are to extend Miller's (1988) study by measuring the associations between: small business manager's perceptions of environmental technical/market turbulence and emphasis on growth/differentiation strategy or low cost strategy, 2. Their perceptions of environmental product/customer differentiation and emphasis on growth/differentiation strategy or low cost strategy, and 3. Their perceptions of environmental competitive intensity and emphasis on growth/differentiation strategy or low cost strategy. We will compare the consistency of associations across presidents and sales managers and discuss possible reasons for inconsistency.

Previous Research on Perceptual Environmental Uncertainty

Environmental uncertainty has been defined in terms of an individual's perceived inability to understand the direction in which an environment might be changing (Milliken, 1987). From the perspective of this individual, measures of perception allow researchers to depict an organization's environment. For example, environments perceived as highly uncertain will likely be viewed as very risky, as contexts in which a few erroneous decisions could result in severe trouble and possibly put the survival of the organization at risk. An environment perceived in such a way would tend to generate a high degree of stress and anxiety and a lack of assuredness on the part of an organization's manager (Waldman, Ramirez, House, & Puranam, 2001:134). The manager may be unable to fully comprehend the potential impact of those changes on the organization, and whether or not particular responses to the environment might be successful.

Managers often respond to uncertainty or complexity in decision-making by simplifying their decision

processes, which may lead to cognitive biases and systematic errors (Hitt & Barr, 1989). Michael (1973) wrote that faced with uncertainty that cannot be reduced or eliminated, some managers may choose to perceive their environment as more certain than it is in actuality. Bourgeois (1985) recommended that firms faced with volatility confront it directly. Hedberg, Nystrom, and Starbuck (1976) wrote that avoidance of uncertainty would impede the organization's long-term ability to adapt and survive.

Perceived ineffectiveness may be seen as evidence of not knowing how to deal with the environment, i.e., not being in control (Pfeffer, 1981; Sutton & Callahan, 1987). This connection between perceived environmental uncertainty and effectiveness is typically explained in both the strategic management (e.g., Hambrick, 1983; Miller, 1988) and organization theory (e.g., Lawrence & Lorsch, 1969; Duncan, 1972) literatures, using ideas from contingency theory.

Contingency theory assumes that the environment poses certain information processing, resource, or legitimacy demands on the organization. These demands, in turn, are either met or not met through the organization's structure, strategy or some combination of the two, leading to different levels of organizational effectiveness (McCabe & Dutton, 1993:624). If decision makers construct the environment as complex and unstable, then they have a reasonable explanation to offer others that explains a less-than-satisfactory performance, while doing minimal damage to their public image of effectiveness and control.

Treating environmental uncertainty as an independent variable, decision makers who view their firm or unit as ineffective, McCabe and Dutton (1993) posit, will see their organization's environment as more uncertain. When a unit or organization is performing poorly in a decision maker's eyes, he/she feels the need to explain or provide an account for this less than ideal situation (Hewitt & Hall, 1973). One possible response is to blame the situation on the environment by constructing it as highly uncertain, thus accounting for the effectiveness gap while, at the same time, maintaining a more positive self-image and some sense of control (Salancik & Meindl, 1984).

Hambrick & Snow (1977) suggest that a firm's strategy will lead executives to selectively misperceive aspects of their environment. This leads to varying discrepancies between archival and perceptual measures across specific strategic foci. Managers may misperceive their environment, a condition analogous to Type I or Type II errors in statistical inference. A Type I error or a false positive condition, occurs when a firm perceives more uncertainty than actually occurs. A Type II error or failure to detect occurs when a firm fails to notice uncertainty in its environment (Boyd, Dess, & Rasheed: 1993).

Studies reporting relationships between organizational structure and perceived uncertainty have been inconsistent. Higher levels of perceived uncertainty reported in organic versus mechanistic structures (Leifer & Huber, 1977) but also a negative relationship between centralization and perceived uncertainty (Connelly, 1975). Huber, O'Connell, and Cummings (1975) wrote that formalized hierarchies was found to be positively related to perceived uncertainty. How managers perceive their environment is more critical to organizational strategy, structure, and process than are archival measures of the environment (Hambrick & Snow, 1977; Miller, 1988). Yet, Dess and Keats (1987) found executives of firms with mechanistic structures reported better accuracy and consensus between archival and perceptual measures.

Even with all data points of environmental indices equally weighted, the more recent events will have a greater impact on managerial perceptions. Archival measures, which measure long-term trends, are not as likely to influence managerial decisions as the current state of the firm's environment. However, Wholey and Brittain (1989) postulate that the impact of recency on managerial perceptions may be minimized if there is evidence of systematic environmental variation over a period of time. In their study of the restaurant industry, using monthly data, they found that managerial perceptions were strongly influenced by the seasonality of sales data.

Differing environmental assumptions are associated with Miles and Snow (1978) proposed strategic perspectives of analyzer, prospector, defender, and reactor. A senior manager in a defender organization, for example, "perceives the environment as analyzable and stable and the management is determined to protect what it has," while prospectors view the environment as "changing and as containing opportunities" (Daft & Weick, 1984: 292). Given

these differences in internal versus external focus, one would expect a greater potential for environmental misperceptions among defenders or reactors, relative to analyzers.

A similar case can be made for Porter's (1980) generic strategies. Organizations that pursue the generic strategy of overall cost leadership seek to become the lowest cost producers in the industry. By emphasizing cost control, such organizations aim to make above average returns even with low prices (Porter, 1980). A cost leadership strategy focuses on the creation of internal efficiencies that will help them withstand external pressures. Consequently, product development and entrepreneurial decisions become secondary to issues like process engineering or the routinization of information systems. In firms pursuing cost leadership, a greater potential for misperception of the external environment among executives would be anticipated (Boyd, Dess, & Rasheed, 1993:204). A cost leadership strategy is appropriate in a stable and predictable environment. This is because unpredictable environments may create severe diseconomies for organizations pursuing a low cost strategy as they attempt to control costs and improve efficiency (Miller, 1988).

Porter's generic strategy of differentiation aims at creating differentiated and unique products/services that will satisfy the customer's unique needs. Such organizations hope to create brand loyalty for their offerings, and thus, price inelasticity on the part of buyers. Breadths of product or service offerings, technology, special features, or customer service are popular approaches to differentiation. The differentiation strategy must typically be supported by heavy investment in research, product or service design and marketing (Kumar & Subramanian, 1998: 108). Differentiation often involves new technologies, unforeseen customer and competitor reaction and is associated with dynamic and uncertain environments (Miller, 1988).

Kumar and Subramanian (1998) found that the level of uncertainty reported in different sectors of the environment is different between organizations pursuing a differentiation strategy and those pursuing a cost leadership strategy. An organization pursuing a differentiation strategy will report greater environmental uncertainty than organizations pursuing a cost leadership strategy.

Kim and Lim (1988) found that different organizations within the same industry face different environmental constraints and contingencies based on their competitive strategies, and accordingly have their unique perceptions of the environment. It could be expected that organizations would report greater concern for uncertainty in those sectors of the environment that are most relevant to them, simply because changes within these sectors may impose important constraints on their planning, decision making and strategy implementation (Bourgeois, 1980).

Hypotheses

Influences of Industry Technical/Market Turbulence

Porter's (1980) differentiation strategy aims to create a product that customers see as unique, which results in increased price inelasticity, higher margins, and reduction in buyer power. Miller (1986) suggests that differentiation strategies could be based on product innovation or based on intensive marketing management. As firms increase use of these strategies there are increases in environmental turbulence. A strategy that emphasized marketing differentiation and innovation should be more necessary in turbulent environments (Porter, 1980; Miller, 1988) such as the computer industry. If a firm, in such an environment, fails to keep pace with industry innovation and fails to aggressively seek new markets for innovations, the firm will fall behind, losing market share and sales (Miller, 1988). Miller suggests that a low cost strategy is associated with stable and predictable environments, such as the metals industry, where customers see the product as a commodity and where price is the dominant competitive tool. He suggests that a turbulent environment will create severe diseconomies for firms pursuing a low cost strategy because the many alterations needed to cope with external challenges would thwart efficiency. Miller's study of manufacturing firm presidents found positive correlations between industry dynamism and strategies of differentiation via innovation (.27, $p < .01$) and marketing based differentiation (.21, $p < .05$). His study's data did not support the hypothesized negative relationship between dynamism and cost leadership strategy, which may have been due to sample size (89) or due to the sample of small firms (average \$10 million), which may have precluded pursuing a low cost strategy. Pickle and Abrahamson (1976) argued that there are no generally superior price-setting strategies for

small firms because they are generally precluded from offering the lowest prices in the industry. This is due to financial constraints restricting pursuit of economies of scale or cost reductions from process-based RT&D. The following hypotheses are similar to Miller's. We would expect that both elements of dynamism, industry technical turbulence (production technology and new products) and market turbulence (changes in customer needs) would influence managers to emphasize a strategy of heavy investment in product design and or marketing to maximize growth in current or new markets. Thus:

1. Growth/differentiation strategy is positively associated with perceptions of:
 - 2.
 - a) Industry Technical Turbulence
 - b) Industry Market Turbulence
2. Low cost strategy is negatively associated with perceptions of:
 - 3.
 - a) Industry Technical Turbulence
 - b) Industry Market Turbulence

Influences of Industry Technical/Market Turbulence

Sheth (1985) suggests that different types of competitive structures are emerging in business markets. Commodity markets, such as basic metals, are characterized by low customer and product differentiation. In these commodity markets the driving force for competitive advantage is seeking economies of scale and other methods to secure low costs. At the other extreme of Sheth's continuum of business markets are fragmented markets with high customer and product differentiation, such as electronics and instruments. In these markets, the driving force for competitive advantage is ultra specialization.

Differentiated markets, such as industrial machinery, are characterized by a high level of product differentiation, but a low level of customer differentiation. In these markets, the driving force for competitive advantage is R&D success. Segmented markets, such as fabricated metals, are characterized by a high level of customer differentiation, but a low level of product differentiation. In these markets application based customization is the driving force for competitive advantage. Based on Sheth's typology we would expect that:

H3. Growth/differentiation strategy is positively associated with perceptions of:

- a) Industry Product Differentiation
- b) Industry Customer Differentiation

H4 Low cost strategy is negatively associated with perceptions of:

- a) Industry Product Differentiation
- b) Industry Customer Differentiation

Influences of Industry Competitive Intensity

Porter (1980) argued that the bargaining power of suppliers, threat of potential entrants, the bargaining power of customers, and the threat of substitute products influences the level of competitive intensity among existing firms. High levels of competitive intensity are characterized by high levels of fixed costs, commodity products, a large number of competitors, and high exit barriers. In these industries, price competition is prevalent to maintain the volumes necessary to achieve economies of scale and cover high overhead costs. In these industries, firm presidents tend to emphasize cost cutting and efficiency, while sales managers rely on lower price to secure orders. Perceptions of a competitively intense industry will influence managers to emphasize a low cost strategy over a growth/differentiation strategy.

Thus:

H5A. Growth/differentiation strategy is negatively associated with perceptions of industry competitive intensity.

H5B. Low cost strategy is positively associated with perceptions of industry competitive intensity.

Waller, Huber, and Glick's (1995) study of senior executives provided evidence for this expectation. They found that functional area work experience has no effect on which changes top executives perceive in their organizations' environments. Thus:

Method

Twelve hundred industrial manufacturing firms were selected from Ward's Directory for the mailing of mail surveys. These firms were selected on the basis of size (\$20-200 million in sales), ownership (wholly owned), and industry environment (commodity or specialty). Commodity and specialty SIC codes were selected to provide as wide a variance as possible on environmental dimensions. The commodity products industries selected were plastics, fabricated and basic metals, packaging, and chemicals. The specialty product industries selected were instruments, machinery, and electronic/electrical equipment.

Two hundred and seventy firms (22.5%) returned questionnaires, however only one hundred and forty eight firms (12.3%) sent in responses from both the president and the sales manager and completed all survey items. The mean size of firms responding to the survey was \$30 million in sales. Chi square tests of industry S.I.C. code composition and t-tests of firm size for responding and non-responding firms indicated no significant differences.

The presidents and national sales managers of these firms were sought as respondents because of the president's key role in strategy formulation and the sales manager's key role in strategy execution.

The perceptual measures of the industry competitive environment were drawn from previous market orientation studies (Pelham and Wilson, 1996; Jaworski and Kohli, 1991; Narver and Slater, 1990). These perceptual measures were technical turbulence/market turbulence (reflecting dynamism), product differentiation/customer differentiation (reflecting complexity), and competitive intensity (Porter, 1979; reflecting munificence). The elements of product and customer differentiation are suggested as critical determinants of strategy and competitive advantage in industrial markets (Sheth, 1985) and similar to Miller's (1988) measures of environmental heterogeneity. The measures of technological and market turbulence are similar to perceived instability measures suggested by Duncan (1972) and Bourgeois (1985). These perceptual measures reflect objective measures that formed dimensions found by Dess and Beard (1984).

All questionnaire items selected to measure key constructs were subjected to tests for reliability and convergent/discriminant validity using coefficient alpha and confirmatory (maximum likelihood-varimax rotation) factor analysis. A pretest of 50 respondents was conducted and items were purified using principal components factor analysis.

Appendix 1 provides these measures of the industry environment along with coefficient alpha/item correlations, confirmatory factor analysis (Varimax-correlated factors) loadings, means, and standard deviations. All survey measures were based on a seven-point scale. Both semantic differential and agree-disagree scales were used. The coefficient alpha for competitive intensity was .76 for the president's responses and .96 for the sales manager's responses. The coefficient alpha for the combined technical and market turbulence construct was .60 for the president and .46 for the sales manager, so the construct was split into two variables. For similar reasons the combined customer and product differentiation factor was split into separate variables. Factor loadings indicated good discriminant validity.

The measures of generic strategy (Porter, 1980) were utilized in Narver and Slater's (1990) market orientation study. These strategy constructs are growth/differentiation strategy and low cost strategy. The measures for growth/differentiation strategy reflect Miller's suggestion that there are two types of differentiation strategy, based

on product innovation, and based on intensive marketing. Appendix 2 provides these measures of strategy with their statistics.

Because of the two-way influences of strategy and environment, Pearson bi-variate correlation analysis was utilized to test hypotheses.

Results

Table 1 provides a comparison of the responses of the president and sales manager on measures of environment and strategy with average differences and correlations. The correlations between the president's responses and sales manager's responses for the competitive intensity, technical turbulence, and market turbulence were higher (.54, .45, and .43; $p < .001$) than the correlations for customer and product differentiation (.24, .23; $p < .01$). The mean differences for measures of environment were not significant, with the exception of technical turbulence (.25, $p < .05$).

The correlation between the respondents for the measure of growth/differentiation strategy was higher (.44, $p < .001$) than the correlation for the measure for low cost strategy (.36, $p < .01$). The mean differences between respondents on the environment constructs were not significant, with the exception of technical turbulence (.25, $p < .05$). The mean differences for strategy responses were not significant.

Despite the significant correlations of responses and the non-significant differences in responses, it would have been expected that the level of correlations of environment would have been higher for two senior managers in small firms for critical input to strategy determination. It would also have been expected that the correlation of reports on the firm's realized strategy would have been higher.

Table 2 provides correlations between technical and market turbulence and reported strategy. The correlation between Technical Turbulence and Growth/Differentiation strategy is positive (.33) and significant ($p < .001$), leading to acceptance of H1A. The correlation between Technical Turbulence and Low Cost strategy is negative (-.14) and significant ($p < .05$), leading to acceptance of H2A.

The correlation between Market Turbulence and Growth/Differentiation strategy is positive (.42) and significant ($p < .001$), leading to acceptance of H1B. The correlation between Market Turbulence and Low Cost strategy is negative (-.13) and significant ($p < .05$), leading to acceptance of H2B.

The correlation between Product Differentiation and Growth/Differentiation strategy is positive (.18) and significant ($p < .05$), leading to acceptance of H3A. However, neither the product differentiation perception of the sales manager or the president is significantly correlated with the sales manager's report on Growth/Differentiation strategy. The correlation between Product Differentiation and Low Cost strategy is negative (-.08) but not significant, leading to rejection of H4A. However, there is a significant negative correlation (-.16, $p < .05$) between the sales manager's perceptions of product differentiation and the sales manager's reports of low cost strategy. There is also a significant negative correlation (-.26, $p < .05$) between the president's perceptions of product differentiation and the sales manager's reports of low cost strategy. This raises doubts as to conclusions about the influence of industry product differentiation and strategy determination.

The correlation between Customer Differentiation and Growth/Differentiation strategy is positive (.08) but not significant, leading to rejection of H3B. However, the sales manager's customer differentiation perception has significant and positive correlations with reported use of that strategy by both the president (.24, $p < .01$) and the sales manager (.25, $p < .01$). The correlation between Customer Differentiation and Low Cost strategy is positive (.04) and not significant, leading to rejection of H4B. However, customer differentiation perceptions by the president and sales manager have significant ($p < .05$) correlations with the sales manager's reported use of that strategy (-.14, -.15).

Thus the results of this study provide qualified support for Sheth's product differentiation/customer diffe-

rentiation typology. His hypothesized emphases on growth/differentiation or low cost strategy depending on the nature of extent of customer and product differentiation have greater support based on the sales manager's environment perceptions and reported use of strategy.

The correlation between Competitive Intensity and Growth/Differentiation strategy is positive and not significant, leading to rejection of H5A. The correlation of Competitive Intensity and Low Cost strategy is positive and not significant, leading to rejection of H5B. However, the perceptions of competitive intensity held by both managers are positively associated with the sales manager's reported usage of low cost strategy (18, $p < .01$; .16, $p < .05$).

The similarity of associations, across the two manager's reports, between technical turbulence, market turbulence, and use of growth/differentiation or low cost strategy leads to acceptance of hypotheses 6A, 6B, 6C, and 6D. However the dissimilarity of associations, across the two manager's reports, between product differentiation, customer differentiation, and competitive intensity and use of growth/differentiation or low cost strategy leads to rejection of hypotheses 6E, 6F, 6G, and 6J.

Discussion

The consistent positive and significant correlations of technical and market turbulence with use of growth/differentiation strategy, across the reports of presidents and sales managers, replicates Miller's (1985) findings of significant correlations between the general dimension of dynamism and use of R&D based or marketing based differentiation strategy. The consistent negative and significant correlations of technical and market turbulence with use of low cost strategy, across the reports of presidents and sales managers, differs from Miller's lack of support for these hypothesized influences. The significant results in this study are probably due to larger sample size in this study (148 firms versus 80 in Miller's study).

The lack of consensus between presidents and sales managers as to the nature of customer and product differentiation and their implications for strategy does not necessarily refute Sheth's arguments for the driving forces in industrial markets. Using the sales manager's reports, correlations confirm the positive influence of customer differentiation on growth/differentiation strategy and negative influence on low cost strategy. Use of the president's perception of industry product differentiation confirms the positive influence on reported use of growth differentiation strategy. Using the sales manager's reported use of low cost strategy, the negative influence of product differentiation is confirmed. However, the roles of these two managers may influence the implications for perceptions of product/customer differentiation and for competitive intensity.

Because of the boundary-spanning role of the sales force, the national sales manager should be a critical source of information about the nature of the competitive environment. The president's judgments as to the nature of the environment should be influenced by interactions with the sales-manager, field reports, market research, and industry publications. Because both small business managers should have significant interactions with each other, perceptions of environment characteristics and their implications should be discussed, leading to a reasonable level of consensus as to the nature of key environment characteristics and their implications.

Pelham and Clayson (1988) found that the top managers of small industrial firms devoted little time to marketing decision-making, compared to internal decision making such as production. The president's typical technical/production background may cause him/her to overemphasize technical differences in product features and the implications of those differences, while the supervision of customer contact personnel role of the sales manager may cause him/her to underestimate differences in product benefits based on customer feedback. The sales manager's role in adapting sales strategies to types of customers may influence him/her to overestimate customer differences and the implications of those differences. The sales manager's experiences in pricing negotiations with customers may influence that manager to be more sensitive to its role in strategy in competitively intense environments.

The results from this study provide evidence of these role influences. The implication for small business managers is that presidents and sales managers should be aware of potential functional biases in environmental scanning and strategy formulation and resolve differences in perceptions prior to strategy implementation.

The consistency and strength of correlations between perception of the environment and chosen strategy is also influenced by other factors in strategy choice, such as the firm's perceived distinctive competency, resources, market position, target market, level of diversification, and the values of senior managers. Given these influences, environment characteristics may have a lesser influence on strategy choice, especially for smaller firms. Snow and Hrebiniak (1980) found that a successful strategy has to be supported with an appropriate reward system, structure, and distinctive competency. Pelham's study (1999) of small manufacturing firms concluded that the appropriate match of growth/differentiation strategy to a turbulent environment may be a necessary, but not sufficient condition, for higher profitability for these firms, since the correlation was significantly higher in the lowest performing quartile (.50) compared to the highest performing quartile (.34). This result was opposite Miller's results, which found that the correlation was higher in the successful sub-sample. His study found that a market-oriented culture is more strongly correlated with growth/differentiation strategy in the highest profitability group (.42), compared to the lowest group (.24). This result confirms Porter's (1980) argument that a growth/differentiation strategy requires good management understanding of customer preferences and competing products.

The managers in this study may have been somewhat unsure of the emphasis on growth/differentiation strategy or low/cost strategy because of a mixture of elements of these strategies in everyday tactics, because of periodic shifts between emphasis on the strategies, and because strategy may not be considered the primary determinant of firm success. Covin and Slevin (1989) explained the minimal performance variance explained by strategy in their models by suggesting that internal cohesiveness and consistency of management practices may provide stronger links to performance. The lower than expected consensus between presidents and sales managers as to the nature of customer and product differentiation and their implications for strategy does not necessarily imply that low levels of consensus as to the nature of environment characteristics leads to poor firm performance. Bourgeois (1985) found that perceptual disagreement within a top management team as to environmental uncertainty and goal diversity led to greater firm performance. The basis for this result was avoiding Janis's (1972) exhortation to avoid the perils of groupthink (insulation, arrogance, tunnel vision, blindness, and omnipotence). However, this positive influence of diversity only occurred when the mean perceived environmental uncertainty is congruent with the objective industry volatility level. This happened because his study indicated a negative relationship between firm performance and divergence between perceived environment uncertainty and objectively measured industry volatility. If the sales manager has more accurate perceptions of environment characteristics, due to his/her closeness to the marketplace, and the president fails to base strategic choice on those more accurate perceptions, the result will be inappropriate strategy and poor firm performance. Inaccurate perceptions of technical turbulence and product differentiation lead to inadequate investment or over-investment in R&D. Inaccurate market turbulence or customer differentiation perceptions lead to an inappropriate level of new product development. Inaccurate perceptions of competitive intensity leads to over or under-emphasis on cost based strategies and poor target market selection.

Limitations/Future Studies

It is important to stress that this study was preliminary and exploratory. Environment characteristics were the only variables used in this study to measure associations of managerial perceptions with strategy from different key functions. Future studies should include other environment characteristics such as industry growth. Future studies should include other factors such as perceived distinctive competency, market position, firm culture, and firm structure. However, this paper highlighted a need for further research that would measure the impact on firm performance created by differences between the president and sales manager in their perceptions of the internal and external situation characteristics and strategy. Subsequent research should also compare the correlations of environment perceptions to objective measures of environment characteristics across functions and hierarchies. 📖

References

1. Bourgeois, L. J. (1980). "Strategy and environment: A conceptual integration," *Academy of Management Review* 5, 25-39.
2. Bourgeois, L. J. (1985). "Strategic Goals, Perceived Uncertainty, and Economic Performance in Volatile Environments," *Academy of Management Journal* 28, 548-573.

3. Boyd, B. K., G. G. Dess, and A. M. A. Rasheed. (1993). "Divergence between archival and perceptual measures of the environment: Causes and consequences," *The Academy of Management Review* 18, 204-227.
4. Child, J. (1972). "Organization Structure, Environment, and Performance: the Role of Strategic Choice," *Sociology* 6, 1-22.
5. Connolly, T. (1975). "Communication nets and uncertainty in R&D planning," *IEEE Transactions on Engineering Management* 22, 50-54.
6. Covin, J.G. and D.P. Slevin (1989). "Strategic Management of Small Firms in Hostile and Benign Environments," *Strategic Management Journal* 10, 75-87.
7. Daft, R. L. and K. E. Weick (1984). "Toward a model of organizations as Interpretation systems," *Academy of Management Review* 9, 284-295.
8. Dess, G. and D. Beard (1984). "Dimensions of Organizational Task Environments," *Administrative Science Quarterly* 29, 52-73.
9. _____ and P. Davis (1984). "Porter's Generic Strategies as Determinants of Strategic Group Membership and Organizational Performance," *Academy of Management Journal* 27, 467-488.
10. _____ and B. W. Keats. (1987). "Environmental assessment and organizational performance: An exploratory field study," *Academy of Management Proceedings*, 21-25.
11. Duncan, R. (1972). "Characteristics of organizational environments and perceived environmental uncertainty," *Administrative Science Quarterly* 17, 313-327.
12. Hambrick, D.C. (1983). "An empirical typology of mature industrial product environments," *Academy of Management Journal* 26, 213-30.
13. _____ and D. Lei (1985). "Toward an Empirical Prioritization of Contingency Variables for business Strategy," *Academy of Management Journal* 28, 763-788.
14. _____ and C. C. Snow (1977). "A contextual model of strategic decision making in organizations," *Academy of Management Proceedings* 108-112.
15. Hedberg, B. L. T., P. C. Nystrom, and W. H. Starbuck (1976). "Camping on seesaws: Prescriptions for a self-designing organization," *Administrative Science Quarterly* 21, 41-65.
16. Hewitt, J. P., and P. M. Hall (1973). "Social problems, problematic situations and quasi-theories," *American Sociological Review* 38, 367-374.
17. Hitt, M. A., and S. H. Barr (1989). "Managerial selection decision models: Examination of configural cue processing," *Journal of Applied Psychology* 74, 53-61.
18. Huber, G. P., M. O'Connell, and L. Cummings (1975). "Perceived environmental uncertainty: Effects of information and structure," *Academy of Management Journal* 18, 725-740.
19. Janis, I.L. (1972). *Victims of Groupthink*. Boston, MA: Houghton-Mifflin.
20. Kim, L., and Y. Lim, (1988). "Environment, Generic Strategies, and Performance in a Rapidly Developing Country: A Taxonomic Approach," *Academy of Management Journal* 31, 802-827.
21. Kumar, K., and R. Subramanian (1997/1998). "Porter's strategic types: Differences in internal processes and their impact on performance," *Journal of Applied Business Research* 14, 107-124.
22. Lawrence, P. R., and J. W. Lorsch (1969). *Organization and environment*. Homewood: Irwin.
23. Leifer, R., and G. Huber (1977). "Relations among perceived environmental uncertainty, organization structure, and boundary spanning behavior," *Administrative Science Quarterly* 22, 235-247.
24. Lenz, R.T. (1981). "Determinants of Organizational Performance: An Interdisciplinary View," *Strategic Management Journal* 2, 131-154.
25. Lord, R.G. (1985). "An Information Processing approach to Social Perceptions," in L.L. Cummings and B.M. Staw (Eds.). *Research in Organizational Behavior* 7, 87-128. Greenwich, CT: JAI Press.
26. McCabe, D. L., and J. E. Dutton (1993). "Making sense of the environment: The role of perceived effectiveness," *Human Relations* 46, 623.
27. Michael, D. (1973). *On learning to plan and planning to learn*. San Francisco: Jossey-Bass.
28. Miles, R. E., & C. C. Snow (1978). *Organizational strategy, structure, and process*. New York: McGraw Hill.
29. Miller, Danny (1986). "Configuration of Strategy and Structure: Towards a Synthesis," *Strategic Management Journal* 7, 233-249.
30. _____ (1988). "Relating Porter's Business Strategies to Environment and Structure: Analysis and

Performance Implications,” *Academy of Management Journal* 31, 280-308.

31. Milliken, F. J. (1987). “Three types of perceived uncertainty about the environment: State, effect, and response uncertainty,” *Academy of Management Review* 12, 133-143.

32. Pelham, A. M. and D. E. Clayson (1988). “Receptivity to Strategic Planning Tools in Small Manufacturing Firms,” *Journal of Small Business Management* 26, 43-50.

33. _____ (1999). “Influence of Environment, Strategy, and Market Orientation,” *Journal of Business Research* 45, 33-46.

34. Pfeffer, J. (1981). “Management as symbolic action: The creation and maintenance of organizational paradigms,” In L. L. Cummings and B. M. Staw (Eds.). *Research in organizational behavior* 3, 1-52. Greenwich, Connecticut: JAI Press.

35. Pickle, H.B. and R.L. Abramson (1976). *Small Business Management*, New York: Wiley.

36. Porter, M.E. (1980). “The Structure Within Industries and Company's Performance,” *Review of Economics and Statistics* 2, 214-217.

37. Salancik, G. R. & J. R. Meindl (1984). “Corporate attributions as strategic illusions of management control,” *Administrative Science Quarterly* 19, 238-254.

38. Schoonhoven, C. B. (1981). “Problems with contingency theory: Testing assumptions hidden within the language of contingency theory,” *Administrative Science Quarterly* 26, 349-377.

39. Sheth, J. N. (1985). “New Determinants of Competitive Structure in Industrial Markets,” in Robert E. Speckman and David T. Wilson, Eds. *A Strategic Approach to Business Marketing*. Chicago: American Marketing Association.

40. Snow, C.C. and L.G. Hrebiniak (1980). “Strategy, Distinctive competence, and Organizational Performance,” *Administrative Science Quarterly* 25, 317-336.

41. Sutton, R. L, and A. L. Callahan (1987). “The stigma of bankruptcy: Spoiled organizational image and its management,” *Academy of Management Journal* 30, 405-436.

42. Waldman, D. A., G. G. Ramirez, R. J. House, and P. Puranam (2001). “Does leadership matter? CEO leadership attributes and profitability under conditions of perceived environmental uncertainty,” *Academy of Management Journal* 44, 134-143.

43. Waller, M. J., G. P. Huber, and W. H. Glick (1995). “Functional Background as a Determinant of Executive’s Selective Perception,” *Academy of Management Journal* 38, 943-974.

44. Ward, P. T., D. J. Bickford, and G. K. Leong (1996). “Configurations of manufacturing strategy, business strategy, environment and structure,” *Journal of Management* 22, 4.

45. Wholey, D. R., & J. Brittain (1989). “Characterizing environmental variation,” *Academy of Management Journal* 32, 867-882.

Table 1			
Mean Differences and Correlations Of Variables Based on			
Presidents’ and Sales Managers’ Responses (n = 148)			
President Minus	Standard		Variable
Sales Manager	Error	T	Correlation

Competitive Intensity	-.06	.09	-.62	.54***
Technical Turbulence	.25	.13	1.96*	.45***
Market Turbulence	.10	.11	.91	.43***
Customer Differentiation	-.11	.19	-.57	.24**
Product Differentiation	.11	.18	.61	.23**
Growth/Differentiation Strategy	-.14	.11	-1.24	.44***
Low Cost Strategy	.22	.17	1.36	.36***
Note: Significance: * = p< .05; ** = P< .01; ***= p< .001.				

Table 2
Correlations of Industry Turbulence Perceptions and
Perceived Strategy (n = 148)
Environment Perceptions

Strategy	Technical Turbulence- President	Technical Turbulence-Sales Manager	Market Turbulence- President	Market Turbulence- Sales Manager
Growth/Differentiation Strategy- President	.33***	.24**	.42***	.28**
Growth/Differentiation Strategy-Sales Mgr.	.20**	.25**	.25**	.34**
Low Cost Strategy- President	-.14*	-.13*	-.13*	-.14*
Low Cost Strategy- Sales Manager	-.18*	-.19**	-.22**	-.24**

Table 3
Correlations of Industry Differentiation Perceptions and
Perceived Strategy (n = 148)
Environment Perceptions

Strategy	Product Differentiation- President	Product Differentia- tion- Sales Manager	Customer Differen- tiation- President	Customer Differentiation- Sales Manager
Growth/Differentiation Strategy- President	.18*	.05	.08	.24**
Growth/Differentiation Strategy-Sales Mgr.	.13*	.09	.05	.25**
Low Cost Strategy- President	-.08	-.03	.04	-.07
Low Cost Strategy- Sales Manager	-.26**	-.16*	-.14*	-.15*

Table 4
Correlations of Industry Competitive Intensity Perceptions and
Perceived Strategy (n = 148)
Environment Perceptions

Strategy	Competitive Intensity- President	Competitive Intensity-- Sales Manager
Growth/Differentiation Strategy- President	.08	-.08
Growth/Differentiation Strategy-Sales Mgr.	-.02	-.07
Low Cost Strategy-President	.05	.04
Low Cost Strategy- Sales Manager	.18**	.16*

**Appendix 1
Perceptual Measures of Environment**

	Alpha/Item Correlation		Factor Analysis Loading	
	<u>President</u>	<u>Sales Manager</u>	<u>President</u>	<u>Sales Manager</u>
Industry Competitive Environment				
<u>Competitive Intensity</u>	.76	.96		
1. Intensity of competition	.56	.62	.94	.73
2. Frequency of price wars	.70	.94	.87	.76
3. Frequency of new competitive moves	.59	.65	.89	.61
<u>Tech/Market Turbulence</u>	.68		.90	
4. Change in production service technology	.60	.46	.88	.50
5. Number of new products from tech. breakthroughs	.66	1.02	.85	.42
6. Extent of change in customer product preferences	.67	.26	.90	.67
7. Extent customers look for new products	.60	.24	.85	.85
<u>Customer/Product Differentiation</u>			.88	
8. Customer difference in size, needs, and buying	.40	.31	.86	.58
9. Similarity of products	.40	.31	.86	.52

Means of Variables

	<u>Mean</u>	<u>Standard Deviation</u>
Product Differentiation (P)	3.50	1.55
Product Differentiation (S)	3.59	1.58
Customer Differentiation (P)	4.31	1.60
Customer Differentiation (S)	4.37	1.57
Technical Turbulence (P)	3.58	1.44
Technical Turbulence (S)	3.74	1.35
Perceived Market		
Competitive Intensity (P)	4.83	1.01
Competitive Intensity (S)	4.81	1.04

Notes: 1. All correlations are significant at the p<. 001 level
 2. Fit of factor analysis (varimax-maximum likelihood) models:
 3 environment factors sufficient; President: Chi-2=36, d.f. 25, p=. 08; Sales Manager: Chi-2=10, d.f. 12, p=. 65. Based on these results, technical/market turbulence as well as product/customer differentiation was split into separate constructs.

**Appendix 2
Measures of Strategy**

Alpha/Item Correlation	Factor Analysis Loading
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	<u>President</u>	<u>Sales Manager</u>	<u>President</u>	<u>Sales Manager</u>
<u>Growth/Differentiation Strategy</u>	.77	.94		
Heavy Investment in Product design and/or marketing to maximize growth	.69	.88	.64	.71
Penetrate new markets with existing products	.69	.83	.61	.67
<u>Low Cost Strategy</u>	.74	.95		
Being low cost producer would give firm an unassailable competitive advantage	.69	.89	.59	.69
Our objectives are driven primarily by cost reduction	.73	.87	.63	.66

Means of Variables

	<u>Mean</u>	<u>Standard Deviation</u>
Growth/Differentiation Strategy (P)	4.31	1.60
Growth/Differentiation Strategy (S)	4.19	1.51
Low Cost Strategy (P)	4.33	1.45
Low Cost Strategy (S)	4.23	1.44

**Appendix 3
Correlations of Environment Constructs**

	1	2	3	4	5
1. Competitive Intensity (P)	1.00				
2. Competitive Intensity (S)	.54	1.00			
3. Turbulence (P)	.08	-.04	1.00		
4. Turbulence (S)	-.06	.03	.44	1.00	
5. Differentiation (P)	-.04	-.11	.30	.20	1.00
6. Differentiation (S)	-.06	-.06	.27	.39	.24

Notes. 1. P = President; S = Sales Manager. 2. Correlations over .12 significant at p< .05 level; correlations over .21 significant at p< .01 level; correlations over .29 significant at p< .001 level.