

Environmental and Structural Influences on the Strategy-Making Process of Banks

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Abstract

This study investigated the effects of perceived environmental dynamism, heterogeneity, and resource munificence, as well as two structural characteristics--formalization and centralization--on the strategy-making variables of assertiveness and rationality. Findings from 59 banks indicated that perceived environmental heterogeneity and munificence were both positively related to the assertiveness and rationality of strategy-making, whereas perceived dynamism was negatively related to rationality. Formalization, a structural variable, was found to contribute the most to strategy-making.

Introduction

Studies of environmental influences on organizational strategy-making have generally focused on two major aspects of the environment: one has been environmental uncertainty, as it is perceived by decision makers (Castrogiovanni, 1991; Miller & Friesen, 1982; Milliken, 1990; Yasai-Ardekani, 1986). The other has been the abundance of critical resources (Keats & Hitt, 1985; Pfeffer & Salancik, 1978), especially during periods of slow economic growth (Ansoff, 1979). Although most researchers today would accept some combination of these two separate but related perspectives (Hrebiniak & Joyce, 1985; Yasai-Ardekani, 1986), the focus of research has been to investigate the effects of either of these dimensions on organizations. This study investigated the effects of both uncertainty (perceived environmental heterogeneity, degree of complexity, and dynamism, degree of unpredictable change), and resource abundance or munificence (availability of critical resources as perceived by decision makers) on the strategy-making of a group of bankers. In examining the effects of both environmental uncertainty and resource munificence on strategy-making, we will attempt to conduct a test of an extension of contingency theory. Also, though many cite Miller and Friesen's (1982) and Miller's (1987) work reflecting influences on strategy-making, the present study extends their work by examining a different type of firm, a bank, that provides additional latitude in testing and interpreting influences on strategy-making.

This study examines the effects of the environment on two important aspects of strategy-making suggested by Miller and Friesen (1982)--rationality (systematic

planning, future orientation/planning, and rational analysis) and assertiveness (proactiveness). Strategy-making is defined as the processes or activities that "make up the deliberations, actions, and interactions of managers making strategic decisions" (Miller, 1987: 8). "The most appropriate strategies can be selected only if the strategy-making process is right for the environment" (Miller & Friesen, 1983: 222). Scholars have considered the organization's environment in two fundamental ways: as a source of information and as a source of resources. The examination of uncertainty as an environmental variable flows from an information-processing view of organizations (Galbraith, 1973). Scholars taking such a view explain organizational changes by variations in information, as it is filtered by managers' perceptions of their external environment. The examination of resource abundance or munificence flows from a resource-control perspective that treats environments as a source of competing resources (Aldrich & Mindlin, 1978; Aldrich & Pfeffer, 1976; Bettis & Prahalad, 1983). Under this perspective, scholars argue that organizational success depends on an organization's ability to maximize its power over resources given their relative market power as defined by the environment (Aldrich, 1979). Organizations which are able to gain control over valuable, scarce resources maintain competitive advantages in their markets and keep profitable market positions (Castanias & Helfat, 1991). Although research studies have indicated moderate support for each of these perspectives, results are far from conclusive (Yasai-Ardekani, 1986).

Recently, some researchers have begun to examine

the effects of structure on strategy-making (Fredrickson, 1986). Still, Miller (1987) has found that investigators have paid more attention to the relationships between strategy-making and structure and between structure and environment than to those between strategy-making and both environment and structure. This study also examines the effects of two important and commonly investigated dimensions of organizational structure, formalization (formal controls and integrative devices or procedures) and centralization (concentration of authority for decision making) (Blackburn, 1982; Child, 1984), together with the effects of environment, on strategy-making.

Research Hypotheses

Relating Environment to Rationality of Strategy-Making

The normative-rational model of strategic decision processes is one of the most comprehensive (Bourgeois, 1980). It assumes an abundance of time and resources, and easy accessibility to information (Narayanan & Fahey, 1982). As Provan explains, "managers have the time, the willingness, [and] the resources to engage in a major search for information pertinent to their decisions" (1989: 21). Decision makers are assumed to have access to information regarding probability of future events, knowledge of means to achieve goals, and principles for assessing consequences of alternatives (March & Simon, 1958). The majority of investigations concerned with the effects of environmental uncertainty on rational decision processes have yielded conflicting results. In a number of investigations, rationality of strategy-making has been found to be negatively related to firm financial performance in an unstable environment (Fredrickson, 1984; Fredrickson & Iaquinto, 1989; Fredrickson & Mitchell, 1984). Conversely, other investigations have indicated that successful firms in

dynamic environments adopted analytical decision processes (Bourgeois & Eisenhardt, 1988; Miller & Friesen, 1983). Smart and Vertinsky (1984) argue that in highly complex and turbulent environments that were perceived as uncertain, strategy-making became disjoint and short-term fire-fighting. Because the availability of information from the environment may be reduced sharply and the sources of information may change quickly, decision makers in uncertain environments may have a short time span for decision-making, and comprehensive analysis of alternative decisions may become impractical (Provan, 1989).

Kukalis (1991) proposed that as perceived environmental complexity increases, extensiveness and comprehensiveness of the strategy planning processes also increases. Available data from church leaders indicate that, when perceived environmental complexity increases, the planning process becomes more formal and comprehensive (Odom & Boxx, 1988). A number of investigators have been exploring the relationship between resource abundance or munificence and rational decision processes. Some investigations have revealed a positive relationship between resource scarcity and rational decision processes (Boyd, 1990). Other investigations have demonstrated an increased use of political decision processes during times of resource scarcity (Pfeffer & Moore, 1980). Miller and his associates (Miller, 1987; Miller & Friesen, 1982) hypothesize a relationship between abundant resources and rational decision processes. A highly heterogeneous environment or one rich in slack resources offers a variety of choices with regard to markets, suppliers, customers, and so forth, and can increase a firm's need for rational and systematic analysis and long-range scanning and searching (Hrebiniak & Joyce, 1984). Hypothesis 1 is given below (see Table 1 for a summary of the study hypotheses). As strategy and structure cannot be

Table 1
Summary of Study Hypotheses¹
Relationships with Strategy-Making Variables

Environmental Variables	Assertiveness	Rationality
Dynamism	+	-
Heterogeneity	+	+
Resource Munificence	+	+
Structural Variables		
Formalization	+	+
Centralization	+	-

¹Adapted from Miller (1987) and Miller and Friesen (1982).

examined independently of size (Grinyer & Yasai-Ardekani, 1981), tests of the research hypotheses were conducted while controlling for the effects of organization size.

Hypothesis 1. Perceived environmental dynamism will have a negative association with rational strategy-making while perceived environmental heterogeneity and resource munificence will have a positive association.

Relating Environment to Assertiveness of Strategy-Making

In a study of a group of schools, Baldrige and Burnham (1973) reported that heterogeneous input from the community and other external organizations had a significant positive impact on innovation. In a different study of a group of conservative business firms, Miller and Friesen (1982) were able to show that the more heterogeneous and dynamic the environment was perceived to be, the more innovative the decision makers were. An early study of service-oriented organizations conducted by Aiken and Hage (1971) demonstrated a relationship between slack resources and rapid program innovation. More recently, however, Miller and Friesen (1982) found that resource munificence did not significantly affect innovation among conservative business firms and actually hindered it among entrepreneurial firms. They claim that in some entrepreneurial firms, organizational scanning and control systems act as a warning against the dangers of too much innovation. Their conclusion that firms with varying risk orientations may strategize differently may hold for the type of organizations that Miller and Friesen studied. For many organizations, however, managerial talent, capital, labor, supplies, and so forth can critically affect an organization's ability to commit to new strategies (e.g., new products and markets). We therefore expected that:

Hypothesis 2. Perceived environmental heterogeneity, dynamism, and resource munificence will have a positive association with assertiveness of strategy-making.

Relating Structure to Rationality of Strategy-Making

An organization's strategy-making is also affected by its structure, which controls its flow of information and the interactions among its decision makers (Huber & McDaniel, 1986). Structure provides the premises for strategic decision making (Fredrickson, 1986; Pitts, 1980). If the decision process is rational, it becomes possible to quantify decision making and systematically analyze strategic alternatives (Hrebiniak & Joyce, 1984). The use of formal procedures, controls, and systems, in turn, can enhance such systematic and rational decision making processes (Miller, 1987), suggesting a relationship between formalized procedures and rational decision making processes (Langley, 1989). With centralization, the reverse may be true. Structural centralization

can discourage rationality and impede analysis and planning, 'by placing most of the onus of decision making on top executives, taxing their cognitive abilities and imposing significant time constraints' (Miller, 1987: 12). We therefore expected that:

Hypothesis 3a. Formalization will have a positive association with rationality of strategy-making while centralization will have a negative association.

Relating Structure to Assertiveness of Strategy-Making

Researchers disagree concerning the effect of formalization on the assertiveness of strategy-making. Fredrickson (1986) expects that formalization can dampen assertiveness; as formalization increases, the proportion of reactive as opposed to proactive strategic processes increases. Miller's (1987) study of small and medium-sized firms found that formal integration showed little or no correlation with assertiveness. By contrast, Miller and Friesen, using data from 52 Canadian firms, argued that in some firms formalization conduces to innovation; "controls indicate the need for innovation in conservative firms while pointing to the need to curb innovative excesses in entrepreneurial firms" (1982: 12). We have defined formalization as the use of formal control devices and of formal integrative devices to ensure effective collaboration among organizational subunits and departments (Miller & Friesen, 1982). A rational model of strategic decision making would lead us to expect that the greater the use of formal integrative and control devices, the more assertive an organization's strategy would be. As Hofer and Schendel explain, 'integration through strategy can produce better results since most groups and individuals perform better if they know what is expected of them and how they contribute to the overall progress' (1978: 61). Because of increased political power, centralized authority also gives strategy makers greater freedom to be assertive and to commit resources (Miller, 1987). "Centralization increases the likelihood that strategic decision making will be a proactive, opportunity-seeking process" (Fredrickson, 1986: 285). Miller's (1987) study of 97 small and medium-size firms and Miller and Friesen's (1982) study of 52 Canadian firms both found centralization to be related to assertive and innovative strategy-making. We propose that:

Hypothesis 3b. Centralization of decision making and formalization (formal integration and controls) will have a positive association with assertiveness of strategy-making.

Relating Strategy-Making to Environment-Structure Fit

The idea that organizational outcomes and actions depend on the 'fit' between environmental and organizational variables is at the center of contingency theory

(Drazin & Van de Ven, 1985). When organizations adapt, their own characteristics interact with those of their environment to 'manifest gestalts, that is, common configurations of mutually reinforcing elements' (Miller & Friesen, 1980: 593). The concept of fit, however, has been subject to numerous interpretations. The systems approach to fit studies the effect of multiple contingencies and multiple organizational characteristics on organizational outcomes. However, researchers may encounter interpretational problems due to a lack of internal consistency among all the variables and a methodological problem in finding suitable analytical procedures. The interaction approach to fit which attempts to explain variations in outcomes through the interaction of organization and environment, remains the principal approach to fit (Drazin & Van de Ven, 1985). We therefore expect that:

Hypothesis 4. The interaction between environment and structure will better predict the assertiveness and rationality of strategy-making than will the environmental variables (dynamism, heterogeneity, and resource munificence) alone or the structural variables (centralization and formalization) alone.

Research Design

Organizations and Respondents

This study examined organizational rather than individual behavior. The convenience sample included 59 small local and regional banks, predominantly from western or plains states (i.e., Colorado, Idaho, Indiana, Kansas, Minnesota, Montana, Nebraska, New Mexico, North Dakota, Ohio, Oklahoma, South Dakota, Texas, and Wyoming). Since the early 1980s, there have been extensive changes in the environments of banks: increasing competition, rising bank failures, and a changing economic and financial climate due to deregulation. The 59 banks ranged in total assets from \$1 to \$100 million and included urban, suburban, and rural institutions. A chi-square test indicated that the sample of banks did not differ in total assets from the bank population in the western and plains states, as reported by Sheshunoff & Company, Inc. (1987; $X^2=5.72$, d.f.=2, n.s.). It is true that the sample of banks were self-selected, in that all the firms had chosen to send managers to a major regional banking school on the campus of a large public university. But banks typically engage in such activities. A 1984 study conducted by the American Society for Training and Development and the American Bankers Association revealed that the average bank employee received about 15 hours of annual training of which 25 percent were in programs similar to the one our respondents attended.

Following Hrebiniak and Snow's (1980) argument that top administrators can provide reliable information

about basic environmental and organizational characteristics of their organizations, we distributed questionnaires to volunteers, each of whom held the title of chairman, CEO, president, or executive vice president. They included 50 males and 9 females, a mean time in present position of 4.2 years, and a mean educational level of four years of college. Questionnaires were administered the first and second days of a two-week training program to reduce the influence of information respondents received while attending.

Measures

The study adapted 7 point Likert scales (see appendix) from the work of Miller and Friesen (1982), adding some organizational context supplied in preliminary interviews by the director of the banking school. Variable or scale scores were computed by averaging all scale items. Miller and Friesen report that the scales, which produced alpha coefficients ranging from .68 to .84, well exceeded the guidelines set up by Van de Ven and Ferry (1980) for measuring organizational attributes.

Environmental variables. Milliken (1987) and Yasai-Ardekani (1986) both believe that environmental uncertainty should be considered a perceptual phenomena inasmuch as organizations respond to what they perceive, and unnoticed environmental events might not effect organizational decisions and actions. On the assumption decisions are determined by perceptions of organizational contingencies, not objective properties (Duncan, 1972), we employed three perceptual measures of environment. Environmental dynamism (the rate of market, product, and technological change) was determined by a composite 4-item scale with a reliability coefficient of .59. The items were factor analyzed, employing a varimax rotation, and all 4 items loaded significantly on one common factor with an eigen value of 1.20 and individual loadings of .34, .68, .73, and .31. (Factor loadings of $\pm .30$ are considered significant [Hair, Anderson, & Tatham, 1987]). Environmental heterogeneity signifies the diversity of the firm's customers, markets, and competitors. It was measured through a 4-item composite scale with an alpha coefficient of .74. Factor analysis showed an eigen value of 1.85 and individual loadings of .40, .82, .59, and .82. Resource munificence or availability of critical resources has been viewed alternatively as an environmental (Aldrich & Mindlin, 1978) or structural variable (Miller & Friesen, 1982); for purposes of this research, we considered munificence an important environmental variable. Innovation requires resources (Miller & Friesen, 1982). The environment limits what an organization can do by limiting the resources available to it. The 4 items used here to measure resource munificence required respondents to rate the abundance of capital, skilled labor, material supplies, and managerial talent. Factor analysis of these items demonstrated a single common factor

with an eigen value of 1.56 and factor loadings of .54, .75, .51, and .67. The alpha coefficient was .65.

Structural variables. A single composite measure of centralization or concentration of authority was determined by 5 items adapted from the work of Hage and Aiken (1969), whose measures of perceived centralization and formalization are among the most commonly identified dimensions of organizational structure. Respondents indicate which levels of management (from middle to topmost) are responsible for approving five different types of decisions, including new product introduction, acquisitions of banks, pricing of major product lines, entry into major new markets, and hiring and firing of senior personnel. This measure exhibited a reliability coefficient of .78. Factor analysis of the 5 items revealed one significant factor (eigen value of 2.29) and loadings of .49, .72, .89, .79, .34. Integration consists of 'integrative devices used to ensure effective collaboration' among organizational subunits and departments (Miller & Friesen, 1982: 5). The 7-item scale measures the use of integrative mechanisms such as interdepartmental committees, task forces, and liaison personnel and the practice of participating cross-functional discussions in different kinds of decisions (for example, capital budgeting decisions). This scale produced one significant factor with an eigen value of 3.58 and individual loadings of .61, .69, .58, .88, .69, .87, and .60. The alpha coefficient was .85. A 6-item measure of controls (alpha coefficient of .90) required respondents to rate the extent to which their bank used six different control devices, such as cost centers for cost control and a comprehensive management control and information system. Factor analysis demonstrated a single factor with an eigen value of 3.51 and loadings of .66, .75, .86, .51, .37, and .36.

Strategy-making variables. A 4-item measure of systematic scanning asked respondents whether their bank used special market research studies; forecasting of sales, customer preferences, technology and so forth; routine gathering of opinions from clients; and explicit tracking of the policies and tactics of competitors. The composite measure had an alpha coefficient of .79, an eigen value of 2.13, and individual factor loadings of .39, .67, .98, and .75. Five items, with an alpha coefficient of .87, were used to assess futurity or planning horizons. The items yielded one significant factor with an eigen value of 3.05 and individual loadings of .65, .82, .89, .86, and .65. Three of the items covered major types of forecasting: (1) long-term (over 5 years) forecasting of sales, profits, and the nature of markets; (2) long-term forecasting of the technology relevant to products and services offered by banks; and (3) planning of long-term investments. Two others cover long-term goals and strategies aimed at exploiting opportunities in the environment. Analysis (the extent to which thought and analysis enter into key decisions about strategic alterna-

tives) was scored on the basis of five items. Respondents rated the use of operations research techniques such as linear programming and simulation and the use of staff specialists to investigate and write reports before a major production, marketing, or financial decision was made. One single factor with an eigen value of 2.61 and individual weights of .78, .59, .89, .82, and .46 were found. The reliability coefficient was .82. Product innovation in product lines and services offered was measured through three items that produced a reliability coefficient of .85, an eigen value of 1.79, and individual weights of .59, .86, and .84. Risk taking was measured through two items that correlated .83.

Principal Components Analyses of Structure and Strategy-Making Variables

Following a procedure outlined by Miller (1987), we performed principal components analysis of the structural and strategy making variables to arrive at aggregate dimensions. The correlations among the individual variables are displayed in Table 2. As Miller explains, aggregate dimensions are useful when there are many variables and when the hypotheses reflect aggregate dimensions more than individual variables. Principal components analysis offers a number of advantages. In component analysis, an approach to factor analysis, one starts with the observations and looks for components so as to reduce the dimensions of variation. In factor analysis, one starts with a model to see whether it agrees with the data and if so, to estimate its parameters (Kendall, 1961). Principal component analysis allows one to avoid making inferential assumptions about the structuring of variables and their sources of variation. We used orthogonal rather than nonorthogonal rotations, such as varimax and quartimax, to improve the interpretability of the resulting principal components, henceforth referred to as factors.

The factors identified here and the resulting aggregate measures are similar to those described by Miller. Because factor analysis in general is sensitive to the ratio of observations to variables, with a larger number of observations generally having higher reliability, the factor loadings should be interpreted conservatively (Hair, Anderson, & Tatham, 1987). The first structural factor produced, centralization, had an average factor loading of .72 and an eigen value of 2.83. The second structural factor produced, formal integration or formalization, comprised two variables--controls and integration--which we combined into a single composite measure by averaging the unweighted variable scores. The rotated factor loadings for this measure ranged from .60 to .83, with an eigen value of 6.31; the alpha coefficient was .89. Two strategy-making factors were also obtained. The first, rationality, comprised systematic scanning, futurity, and analysis, assembled into a single composite measure by averaging the unweighted scores.

This composite measure had a reliability coefficient of .92, an average factor loading of .64, and an eigen value of 7.46. The second, assertiveness, consisted of two variables, product innovation and risk taking, combined with equal weights into a single composite variable, with an alpha coefficient of .92, an eigen value of 3.44, and factor loadings of .74, .83, .83, .87, and .86.

Analysis of Data and Research Findings

The variable means and standard deviations, together with the correlations among the individual variables, are given in Table 2. The fact that with two exceptions the variables had standard deviations greater than one (Cohen & Cohen, 1983) suggests that there were no serious interpretational problems caused by restriction of range problem.

controls also correlated positively with resource munificence. The latter findings conflict with theories that nonformal structures are best suited to heterogeneous and resource-rich environments (Lawrence & Dyer, 1983), and may reflect bankers' overriding need to tighten their organizations as a means of managing scarce resources and complying with government regulation.

Size. Unlike Keats and Hitt (1985), we found bank size (total bank assets) to be positively related to perceived heterogeneity ($r = .28, p = .05$) and unrelated to perceived dynamism and resource munificence ($r = .07, n.s.$; $r = -.01, n.s.$), suggesting that bank growth is associated with more complex but not necessarily less stable or more munificent environments. But like Child (1973), we found that size correlated negatively with

Table 2
Means, Standard Deviations, and Correlations Among the Variables

Variables ^a	Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11	12
1 Dynamism	4.28	.97	----	.45#	-.19	.11	-.11	-.16	-.19	-.18	-.26	-.12	-.23	.07
2 Heterogeneity	3.67	1.20		----	.02	-.18	.34 ^a	.40#	.30 ^a	.29 ^a	.31 ^a	.33 ^a	.29 ^a	.28*
3 Resource munificence	3.03	1.14			----	-.06	.19	.22*	.15	.15	.22*	.24*	.16	-.01
4 Centralization	6.67	.45				----	-.09	-.15	-.12	-.05	-.07	-.19	-.19	-.30*
5 Integration	4.06	1.55					----	.60#	.39#	.63#	.75#	.57#	.53#	.11
6 Controls	3.87	1.63						----	.59#	.68#	.76#	.60#	.55#	.31 ^a
7 Scanning	3.37	1.63							----	.51#	.55#	.69#	.52#	.20
8 Futurity	3.89	1.36								----	.75#	.60#	.55#	.21
9 Analysis	3.54	1.53									----	.71#	.67#	.12
10 Product innovation	3.48	1.20										----	.75#	.19
11 Risk taking	3.04	1.32											----	.16
12 Total assets(\$000)	85.6	229.6												----

* $p < .05$; ^a $p < .01$; # $p < .001$

^a7-point scale

Correlation Analyses

Intercorrelations between controls and formal integration and among the strategy-making variables--scanning, futurity, analysis, product innovation, and risk taking--were all positive and significant. As theory predicts (Duncan, 1972), perceived environmental dynamism and heterogeneity correlated positively with each other. As in previous research that has failed to show a relationship between environmental uncertainty and sales variability (cf. Yasai-Ardekani, 1986), dynamism and heterogeneity both failed to correlate significantly with resource munificence.

As Table 2 shows, centralization showed little or no correlation with any of the three environmental variables. Integration and controls, by contrast, both correlated positively and significantly with perceived heterogeneity but not with perceived dynamism. Con-

centralization ($r = -.30, p = .05$) and positively with controls ($r = .31, p = .05$), suggesting that with increased size, banks institute more formal management controls and become more decentralized. Last, as in research by Keats and Hitt (1985), size showed little or no correlation with any strategy-making variable.

Results

The research hypotheses were evaluated through partial correlation analysis controlling for the effects of size. Hypothesis 1 was supported. As we predicted, heterogeneity and munificence correlated positively with rationality of strategy-making ($r = .31, p = .01$; $r = .25, p = .05$) and with most of the individual variables (see Table 2). Also, dynamism correlated negatively with the aggregate factor rationality ($r = -.27, p = .05$) and the individual variable, analysis.

Our second hypothesis was partly supported. As we predicted, perceived environmental heterogeneity correlated positively with the aggregate dimension of assertiveness ($r = .32$, $p = .01$), as well as with the individual variables, innovation and risk taking (see Table 2). Resource munificence also correlated positively with assertiveness ($r = .23$, $p = .05$) as well as with the individual variable, innovation. Perceived dynamism, however, was not significantly related to the aggregate factor of assertiveness ($r = -.18$, n.s.) and was negatively related to the individual variable, risk taking.

Hypothesis 3 was partly supported. As we predicted, formalization did correlate positively with both rationality ($r = .83$, $p = .001$) and assertiveness ($r = .65$, $p = .001$), as well as their component variables. Contrary to the hypothesis, however, centralization of decision making showed no significant relationship to either rationality ($r = -.09$, n.s.) or assertiveness ($r = -.20$, n.s.), or to any individual variable (see Table 2).

To determine whether strategy-making was related to the fit or interaction between environment and structure (Hypothesis 4), we used hierarchical regression, as

outlined by Alexander and Randolph (1985). The results indicate that strategy making is related not to fit but to the type of structure (specifically, to formalization). As Table 3 shows, formalization was a significant predictor of both assertiveness and rationality of strategy-making. Although not shown in the table, changes in R^2 resulting from the incremental addition of environment and the interaction between environment and structure) did not significantly explain variations in assertiveness and rationality.

Althaus (1971) demonstrated that when multiplicative terms are used in regression analysis, problems of multicollinearity may arise. To adjust for this condition, we corrected the multiple regression equation by subtracting the means of the variables from the individual values included in the interaction, or product, terms.

Field studies using self-report data pose interpretational problems. Self-report, cross-sectional data are particularly susceptible to errors resulting from consistency, priming, and problems associated with common method variance (Podsakoff & Organ; 1986). These problems of method are particularly difficult when

Table 3
Results of Hierarchical Regression of Assertiveness
and Rationality on Environment and Structure Variables

Independent Variables	Standardized Regression Coefficients	
	Strategy Making Variables	
	Assertiveness ^a	Rationality ^b
Environment		
Dynamism	-.13	-.20*
Heterogeneity	.13	.13
Resource Munificence	.05	-.01
Structure		
Formalization	.54***	.74***
Centralization	-.09	-.06
Size		
Total Assets	.09	.09
Multiple R	.69	.84
R ²	.47	.71
F	6.82***	19.44***

* $p = .05$; ** $p = .01$; *** $p = .001$; $df = 6, 51$

^aFor assertiveness, the reduced model of environmental variables alone and the reduced model of structure alone were both significant (Multiple $R = .51$, $R^2 = .26$, $F = 5.68$, $p = .01$ for the former; Multiple $R = .69$, $R^2 = .45$, $F = 20.16$, $p = .001$ for the latter).

^bFor rationality, the reduced model of environmental variables alone and the reduced model of structure alone were both significant (Multiple $R = .58$, $R^2 = .34$, $F = 8.46$, $p = .001$ for the former; Multiple $R = .82$, $R^2 = .68$, $F = 53.78$, $p = .001$ for the latter).

respondents are asked to report during a single data collection session on perceptions of environmental variables. Factual data of which the respondent possesses direct knowledge pose less serious problems since such data are in principle verifiable. Some of the data collected in the present study (such as level of management responsible for approving decisions, use of cost centers for cost control, use of profit centers and profit targets, use of formal appraisal of personnel, and respondent position and years of tenure) were of this type.

Conclusion

Although our findings represent only a single type of organization, they suggest that both resource munificence and environmental heterogeneity conduce to assertive, rational strategy-making. In an expanded text of contingency theory that examined the effects of uncertainty (dynamism and heterogeneity) and resource munificence, our study suggests a strong contingency relationship. If the environment is indeed a source of information and resources (Lawrence & Dyer, 1983), these results reflect an increasingly complex (heterogeneous) banking environment and a growing dependence of banks on outside resources (Ansoff, 1979), both probably due to deregulation. As bankers perceive slackened regulations and authorization for new products (resource munificence), they have more incentive for proactive decisions and risk taking (assertiveness).

It is not clear why assertiveness of strategy-making was unrelated to perceived dynamism of the environment, although Leblebici and Salancik (1981) in their study of the banking industry found that loan officers in volatile environments used more conservative probability estimations than those officers in a stable environment. This apparent irrelation in this study may in part reflect an unstable measure due to a low alpha coefficient; but it may also be that banks are so formalized and regulated that their executives simply do not see unpredictable change that is not touted politically. Within an organization, formalization can operate to reduce uncertainty about the environment (Kasperson, 1985). Bankers may have come to rely so much on formal monitoring systems that they miss any changes those systems were not designed to detect. If further investigation confirms this point, modifications in the supervision of banks may be in order. Given that deregulation confers on bankers more autonomy and responsibility for individual bank policy, regulators may need to relax formalized monitoring procedures in other areas to permit bankers responsible for strategy formulation to focus on additional exogenous factors that will influence a bank's stability and success.

Our finding that strategy making was related to formalization but not to centralization is consistent with

Fredrickson's (1986) notion that the organization's form (simple structure, machine bureaucracy, or professional bureaucracy) determines what structural dimensions will govern it. In a simple structure, centralization is considered the dominant dimension; in a professional bureaucracy, structural complexity is considered dominant. In a bank, which is typically a machine bureaucracy (Mintzberg, 1979), formalization stands out: decisions are made on the basis of programmed feedback, and from an elaborate system of formalized controls and integrative mechanisms (Miller, 1987). Although Hrebiniak and Joyce (1985) maintained that organizational behavior and strategy-making are determined by both environmental and organizational elements, in the banks we studied strategy-making was clearly dominated by formalization. This dominance may be due to the heavy regulation of the industry. Many of banking's formalized controls and integrative systems are externally mandated by supervisory agencies charged with maintaining stability and public confidence in the banking system.

Our results regarding the role of environmental and structural influences on strategy-making are generally consistent with Miller and Friesen's (1982) findings that strategy-making is impacted by environmental and structural forces among conservative but not among entrepreneurial firms. As explained by these researchers, conservative firms tend to view "innovation as something done in response to challenges, occurring only when very necessary" (1982: 16). Innovation will not take place unless there are challenges, threats, or instabilities in the environment. For entrepreneurial firms, by contrast, goals and strategies rather than environment or structure are seen to be the key impetuses to assertive organizational behavior.

The interaction of banks' structures and environments appeared to be unrelated to strategy-making. Like other previous studies, the present study did not support the fit hypothesis. It is possible that banks are failing to adapt structurally to their environments because they are paying more attention to their regulators than to their competitors. But deregulation has brought an increasing number of bank failures. The banking industry has been plagued over the last decade by a highly competitive financial-services market, a slump in bank earnings, and not enough money in the form of capital. The industry also is structurally changing--perhaps moving toward an increasing consolidation of banking services. A fit among environment, structure, and strategy may be harder to achieve when the rate of change is high throughout the industry.

The present findings require corroboration because they represent only one type of organization, small, local and regional banks. Convergence between studies in different industry and economic contexts may not always

be expected, especially if industries with and without serious economic changes have been studied. The use of a convenience sample rather than a random sample also limits the generalizability of findings. Further checking or results is suggested, especially using a more heterogeneous sample.

Also, the present study examined only the effects of environment and structure on strategy-making, not the reverse possibility: that strategy-making can influence structure and managers' perceptions about their environment. Several scholars consider organizations 'to be constructed out of mutually reinforcing rather than independent elements' (Miller, 1987: 27). Our cross-sectional study is limited in examining causal relationships between environment, structure, and strategy-making; future researchers should consider using longitudinal research designs to address the reciprocal nature of these relationships. Nevertheless, notwithstanding this causal indeterminacy, the study supports hypotheses derived from contingency theory.

Suggestions for Future Research

Our findings suggest at least two important avenues for future research. With respect to the irrelation between assertiveness and dynamism, future research should attempt to establish whether 1) an increase in formalization decreases its effect on strategy making or 2) whether the lack of a relationship holds regardless of the structural dimension governing an organization. This avenue of research would strengthen our understanding of effects of structure on firms' ability to adapt in unpredictable environments. Future research should also address the lack of fit found between environment, structure, and strategy in this study as well as other studies. If coincidence of fit negatively related to the rate of change throughout industries, then the value of using fit to describe and predict strategic behavior is suspect when firms address strategic issues in rapidly changing environments.

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