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INSTITUTIONAL ISOMORPHISM AND
HOMOGENEITY OF BUSINESS STRATEGY
IN ORGANIZATION FIELDS

By

Aaron Anthony Buchko

A DISSERTATION

Submitted to
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ABSTRACT

INSTITUTIONAL ISOMORPHISM AND HOMOGENEITY OF BUSINESS STRATEGY IN ORGANIZATION FIELDS

By

Aaron Anthony Buchko

Why do executives in organizations pursue strategies which are similar to those of other firms? This question differs from the dominant view in strategy research, which emphasizes heterogeneity in strategies and strategic behavior among firms. This research suggests that institutional structures which are found in interorganizational relationships termed organization fields" give rise to three kinds of forces which lead firms to adopt similar or homogeneous strategies.

The first of these forces is termed coercive isomorphism and is derived from dependence relations among firms. The second is referred to as mimetic isomorphism and is based upon uncertainty and mimicry. The third and final force arises from the rise in professional ties or linkages among firms and the increased professionalism of members of organizations and is termed normative isomorphism.

Three hypotheses were developed based on the three isomorphic forces which suggested that greater levels of isomorphic force among firms in an organization field will lead, *ceteris paribus*, to greater homogeneity in strategy among those firms. The hypotheses were tested via a survey of 137 firms selected at random from those in the auto supplier organization field. Data was obtained on the business strategies, degree of dependence, perceived uncertainty, and number of

professional linkages for each firm within the field. Firms were clustered into comparison groups based on the amount of institutional isomorphic force present among the organizations.

The results indicated that firms with greater dependence on similar customer firms and those with greater professional interrelationships had moderately greater homogeneity in their business strategies. No significant differences were found among firms with higher levels of perceived environmental uncertainty as compared with those firms with low levels of uncertainty.

These results suggest that institutional forces may be operative among firms within an organization field and may lead to isomorphism and homogeneity in business strategy among these firms. The results also suggest a need for additional research in several areas pertaining to institutional theory and strategy which may have utility for researchers seeking to understand the strategic behavior of firms in interorganizational systems.

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For Kathy,
who made it all possible,
and my parents,
Walter and Blanche Buchko
with thanks for their love, prayers, and support.

ACKNOWLEDGEMENTS

A project such is not the results of one individual as much as it is a team of people who contribute unselfishly of their time and talents. This dissertation could not have been completed without their work. In many ways, this is a collective project. I am merely the scribe.

I owe a great debt of gratitude to the members of my dissertation committee. Dr. Jim Skivington was the chairman of the committee, and his insightful probing questions and patience made the work bearable. He is responsible, to a great extent, for the original idea, spawned in one of our many trips in the spring and summer of 1988 to visit auto supplier firms in Michigan. I will always remember fondly our time in the car on the highways of that great state and his friendship and support throughout the process.

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During my five years at Michigan State, a number of people were instrumental in my personal and professional development, and the dissertation reflects their collective efforts. The faculty of the department of Management provided me with a sound training in theory and research. The staff of the department, particularly Sue Polhamus, always had time to take care of the many details associated with being a graduate assistant. I have been privileged to have had many good fellow graduate students during my education who made life bearable and even, at times, fun. Lately, I have had the good fortune to return to Bradley University - where I earned my MBA degree - as a faculty member, and I would like to thank Dr. Fred Fry, Dr. Dick Hartman, and Dr. Chuck Stoner for convincing me that there might be a career in academics and then, to prove it, for allowing me to return to Bradley as a colleague. Mrs. Mary Lu Reither of the Department of Business Management and Administration at Bradley suffered through the editing of the final manuscript and produced the final draft. Her patience and good nature, to say nothing of her amazing talents on the word

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My parents, Walter and Blanche Buchko, supported us throughout the five years in East Lansing. They gave frequently of their time, talents, home, and love. In addition, they were very patient with a certain son of theirs during his young years, and taught me the value of an education. This dissertation is dedicated to them as a small way of saying "thanks for everything."

Every student would be remiss without acknowledging the efforts of those who devote their energies to the educational enterprise, the teachers and professors. I have been fortunate in my life to have had many fine teachers who were patient with me and taught me more than the lessons in the textbooks. In particular, I have been most fortunate to have had the privilege to learn from Dr. Eugene Jennings of the Department of Management at Michigan State. I have learned more from this man in five years than in the previous twenty five combined, not only about management but about education, business, and life. I consider it a great to honor to have this man refer to me as a colleague, and I will always be grateful to Gene and his wife, Marilyn, for their love, friendship, and support.

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Aaron A. Buchko
Peoria, Illinois
May 1990



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Chapter One

Introduction

1.1 Overview - The Problem

Why do firms pursue strategies which are similar to those of other firms? This question differs from the majority of existing research on strategy, which seeks to answer the question, "Why are strategies different?" activity. Among the reasons given for the heterogeneity in the strategies pursued by corporations are: (1) strategies arise from characteristics of the organization's top executives (Miles and Snow, 1978; Bettis, 1981; Child, 1972; Hambrick and Mason, 1984); (2) strategy is a response to competitive market forces, such as market share and market growth, which are found in the structure of firms' product-markets (Buzzell, 1966; Hofer, 1975; Buzzell and Gale, 1987); and (3) strategic behavior is shaped by the structure of an industry, which includes suppliers, customers, competitors, substitute products, and potential new entrants (Porter, 1979a; 1980; 1985); or (4) strategy is contingent upon a set of environmental factors which might include elements of the preceding three views (Hofer, 1975; Lindsay and Rue, 1980; Hambrick, 1983a). In all cases, the strategic response of any single company is based upon the set of idiosyncratic factors with which the firm must contend.

This research argues that factors other than those found in the characteristics of management, in product-market structures, in the



structure of an industry, or in the competitive environment affect the strategic behavior of organizations. These forces are found in the patterns of institutional relations and interactions inherent in the structuration (Giddens, 1979) of organizational fields. The presence of such institutional forces can lead to isomorphism - the constraining process which forces an organization to become similar to others facing the same set of circumstances. Institutional isomorphism affects the strategic decisions of organization managers, such that the strategies come to appear homogeneous - they are similar to one another. In the presence of institutional forces for isomorphism, a firm is confronted with a setting in which the efforts of any single company to deal with the uncertainty, dynamism, and complexity of strategic activity often lead, over time, to increasing homogeneity in strategy among groups of firms.

1.2 Strategy, Heterogeneity, Homogeneity, and Institutionalization: Definitions

1.2a Strategy

There are many definitions of the term "strategy" found in the strategic management literature. Chandler (1962) offered one of the more significant definitions of strategy, and his definition will be used in this study. In his book, *Strategy and Structure: Chapters in the History of the Industrial Enterprise*, Chandler summarized preceding efforts and established a foundation for much of the research which has followed. Chandler defined strategy as "the determination of the basic



long-term goals and objectives of an enterprise and the adoption of courses of action and the collection of resources necessary for carrying out these goals" (1962:13).

Because strategy concerns the long-term the survival, growth, and performance of organizations, and due to the level of resource commitment involved, strategic decisions and strategic activities are of central importance for many firms. Attaining the long-term objectives of an enterprise typically requires great amounts of top management time, involvement, and effort (Hambrick and Mason, 1984). Further, the amount of resource commitments are quite substantial, involving large sums of money, capital, and time. The nature of organizational strategy makes this a significant research issue in the organizational sciences.

Business Strategy

Organizational strategies can be divided into two broad categories: corporate-level strategies and business-level strategies. Corporate strategies concern the choice of business or industries in which a firm will compete (Hofer and Schendel, 1978). Corporate-level strategic decisions involve diversification, merger, acquisition, and divestiture of strategic business units (SBUs). Such strategies answer the question, "What are the businesses or industries in which our firm will compete?" and frequently involve decisions concerning the business portfolio of a firm (Hayden, 1986).

Business-level strategies concern the choices about the competitive and strategic behaviors necessary to compete with other

firms in a single business or industry segment (Hofer and Schendel, 1978). Business strategy decisions may be quite broad in scope, involving resource allocations and decisions about marketing, finance, personnel, manufacturing/operations, and other business activities. Business strategies answer the question, "How should our firm compete within this industry or business?" This research will be concerned with business strategies as the level of strategy analysis.

1.2b Heterogeneity and Homogeneity of Strategy

Heterogeneity is the dissimilarity of elements, the difference or diversity among constituents. For example, the population of the United States is heterogeneous, consisting of diverse individuals with differences in their composition and character. Homogeneity is defined as being of the same kind or similar nature, possessing a uniform structure throughout the entity. Using these definitions, heterogeneity is reflected in the variation among elements or entities; homogeneity would be the lack of variation.

Heterogeneity in strategy among firms would indicate the presence of diversity in the long-term goals, variation in the courses of strategic action which firms pursue, and/or dissimilarity in the resource allocation decisions of business organizations. Conversely, homogeneity of strategy would be represented by similarity in long-term goals, a lack of variation in the actions which firms pursue, and correspondance in resource allocation decisions of corporations.



Dominant views in the literature on strategy emphasize the heterogeneity among firms in strategic behavior (Hofer, 1975; Miles and Snow, 1978; Porter, 1980; Hitt and Ireland, 1985). In fact, firms are encouraged to seek strategies which differ from those of competitors to increase firm performance (Snow and Hrebiniak, 1980; Porter, 1985). There is some indication in the research, however, that firms often pursue similar strategic arrangements (McGee and Thomas, 1986). Though much of the data is anecdotal in nature (for example, see Horvat, 1987; Powers, 1988), there are studies which are more empirical in nature and which support the homogeneity perspective (as in Willard and Cooper, 1985; Cool and Schendel, 1987).

1.2c Institutionalization

One framework which might be useful in explaining the presence of homogeneity of strategy is offered by institutional theory. Institutional theories of organizations suggest that organizations are influenced by pressures for conformance to group or societal norms, some of which are external and others which are internal to the firm (Zucker, 1987). Such pressures may direct firms to adapt similar behaviors in response to the institutional forces, leading to isomorphism -similarity of form and structure - with the institutional environment (Zucker, 1987). To date, research on institutionalization - the process by which firms adapt to the institutional environment - has focused on largely on organizational structure (for example: Rowan, 1982; DiMaggio and Powell, 1983; Meyer, Scott, Strang,

and Creighton, 1988). However, no research has been found which addresses the effects of institutional forces on business strategy.

1.3 The Research Question and Objectives

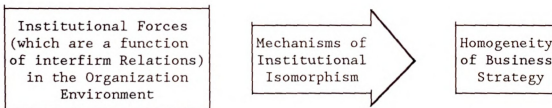
The primary problem addressed by this research concerns the homogeneity of business strategy among firms. Current perspectives emphasize the heterogeneity of business strategy, and presume that firm strategies will vary due to various forces in the firm's environment. This research seeks to explain homogeneity - the similarity of strategies among firms. The question, "Why do firms pursue strategies which are similar to those of other firms?" is the central issue for this study. One possible answer to this question of homogeneity of strategy which is suggested in this research lies in the presence of institutional forces and mechanisms found in the intergroup structures and relations among a group of organizations. Such institutional factors can lead to isomorphism and homogeneity of strategy.

The specific objectives of this research are: 1) to develop a theoretical perspective which might explain the homogeneity of strategy among firms using institutional theories of organizations, specifying institutional forces and mechanisms which might affect the homogeneity of strategy, and 2) to develop and empirically test a series of specific hypotheses concerning homogeneity of strategy which are based upon an institutional framework.



1.4 Conceptual Model

The central contention of this research is that the greater the institutional forces for isomorphic change present among a group of business firms, the greater the homogeneity of business strategy among those organizations. This basic model is depicted in Figure 1-1.



Institutional forces operate via specific mechanisms to increase homogeneity.

Figure 1-1

A Conceptual Model of the Research

This model is quite broad and general in scope. This study will have a more narrow focus, addressing specific issues within the basic conceptual and theoretical model in the development of the research hypotheses and the research methodology. For some organizations, certain of the various institutional forces may not be operative due to the level of analysis or the sample of firms utilized. Such elements will be not be included in the research hypotheses under investigation in this study.

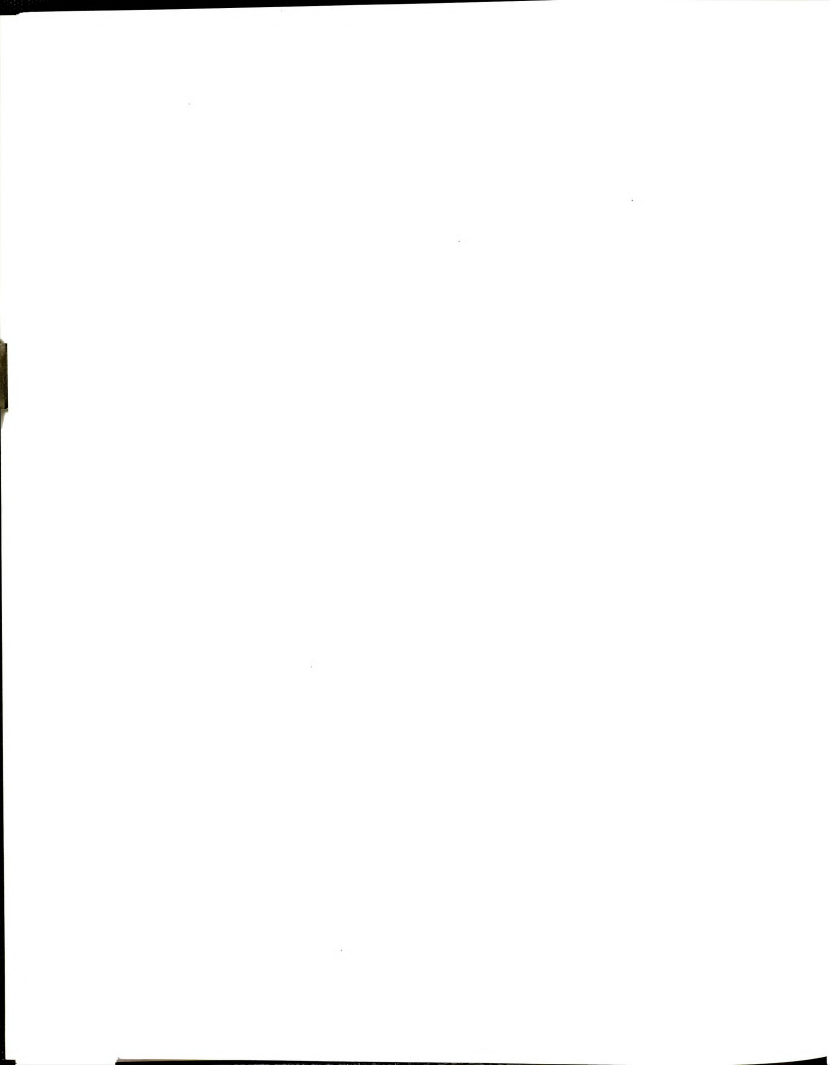


1.5 Research Method Synopsis

For this study, the proposed research method will involve a survey of a firms within a specific industry group, automobile industry supplier firms. Surveys will be mailed to approximately 400 auto supplier firms which will seek information on the firm's business strategies and the institutional forces and mechanisms present in the firm's environment. Responding firms will be separated into two groups for analysis: "High Institutional" firms, which have substantial levels of institutional forces acting upon them, and "Low Institutional" firms, which have few institutional forces affecting their behavior. For the basic research model to be supported, firms which have high institutional forces will exhibit greaater homogeneity of business strategy than firms with low institutional forces. Homogeneity of business strategy is the absence of variation in business strategies among firms, and the analysis will examine the variance in business strategies between the groups of firms.

1.6 The Significance of the Study

The significance of this study is found primarily in its contribution to existing literature and research on organizational strategy. As will be discussed, previous research on business strategy assumes heterogeneity among firms. That is, there is an underlying assumption that the business strategies which firms will pursue will differ. The majority of existing research seeks to understand the



causes of this heterogeneity or the effects of this heterogeneity on such outcomes as firm performance. This study questions this assumption by investigating the presence of homogeneity in business strategies among firms. Research which tests the underlying assumptions of a research paradigm is essential in order to provide for growth of scientific knowledge (Kuhn, 1963).

By examining the issue of homogeneity of strategy, and through the use of the institutional perspective, this study will contribute new knowledge concerning the nature of strategy and the institutional environment of organizations. The impacts of institutional arrangements on strategy will be presented and examined empirically.

The results will provide insights into the specific effects of institutional forces on strategies among firms within a particular industry group. Also, this study will develop a theoretical base and initial methodology to guide future research on the subject in other industries or among other groups of firms.

From a managerial perspective, the research will provide an information on certain aspects of the strategy process and will offer insights into the nature of the relations among organizations. Executives can evaluate the effects of institutional forces on their organizations and determine the extent to which such forces affect their firm's strategy, as well as the strategies of competitors. The research may suggest additional considerations for managers in the formulation and implementation of the organization's strategy.



1.7 Order of Presentation

The balance of this dissertation will proceed as follows. Chapter Two examines the literature on strategy to illustrate the dominant research perspectives which emphasize the heterogeneity of business strategy. Forces for heterogeneity in business strategy found in organizations, markets, industries, and environments will be reviewed. Evidence for homogeneity of business strategy will be presented. Chapter Three suggests that institutional forces present in organizational fields have a significant impact on the homogeneity of strategic actions among firms. A general theory on the effects of institutional forces on firm strategy will be developed, and broad research themes will be discussed. The general theory will provide the basis for the development of a series of research hypotheses which will focus on a selected group of specific issues from the broad institutional perspective. Chapter Four describes an initial investigation into the effects of institutional forces on strategic homogeneity. Results of this inquiry will be reported in this chapter. The fifth and final chapter contains a discussion of the results and some tentative conclusions.

Chapter Two

Heterogeneity and Homogeneity of Strategy in Strategy Research: A Literature Review

2.1 Introduction

There is an underlying assumption in many contemporary theories and research on organization strategy that the strategic activities of an organization will vary from those of other organizations due to the idiosyncratic set of environmental forces with which the firm must contend (e.g., Rumelt, 1974; Hofer and Schendel, 1978; Porter, 1980; Beard and Dess, 1981). The dominant issue for many studies is to explain the heterogeneity in strategy based upon some combination of factors within the organization and its environment, and to examine the effects of such heterogeneity on the firm's activities.

Heterogeneity - the dissimilarity among strategies - is a central theme in many of the fundamental concepts and variables in strategic research. For example, several authors discuss the concept of distinctive competence as crucial to a firm's success (Rumelt, 1974; Porter, 1980; Snow and Hrebiniak, 1980; Hitt and Ireland, 1985). Firms possessing a distinctive competence are characterized by the presence of skills, expertise, or technology which is superior to any of their competitors (Selznick, 1957). A distinctive competence thus differentiates a firm from all others within its competitive environment. Possessing a distinctive competence makes a company dissimilar to other organizations.

Another concept is that of competitive advantage. Ansoff (1965) defined competitive advantage as the characteristic unique opportunities of a firm resulting from its product-market position and

the direction of the firm with respect to its current product-market posture. Firms possessing a competitive advantage have a superior position relative to competitors and have the opportunity to achieve superior performance relative to competitors if they pursue the proper strategic actions (Porter, 1980; 1985). Possessing a competitive advantage makes a company dissimilar from its competitors. A firm's competitive advantage may arise from the presence of a distinctive competence which enables the firm to perform more effectively than its competitors (Hayden, 1986). Such competencies might include a more efficient plant, patents, unique advertising, strength of the top management team, easy access to credit, or favorable government relationships, among others. A competitive advantage allows a firm to be more profitable by lowering its costs or enabling it to differentiate itself from competitors (Hayden, 1986).

Competitive advantage is a unique position within a product-market; distinctive competencies are unique properties of organizations. Both emphasize heterogeneity among firms' strategic behaviors. Since competitive advantage and distinctive competence are often-used concepts in empirical and theoretical work on strategy (e.g., Rumelt, 1974; Snow and Hrebiniak, 1980; Porter, 1980, 1985; Hitt and Ireland, 1985), the issue of heterogeneity among firms in strategies and strategic behavior is fundamental to strategy research.

2.2 Heterogeneity of Strategy: Research Perspectives

Within the literature on organization strategy, three distinct perspectives can be identified. Research studies which seek to explain the heterogeneity among firms' strategies can be classified according to the perspective utilized. These can be termed the Management Characteristics view, the Competitive Markets view, and the Industry Structures view. Within each of these three perspectives, several forces can be identified which affect strategy heterogeneity. These perspectives and forces are illustrated in Figure 2-1. A fourth approach is not so much a distinctive perspective but rather a combination of factors taken from these three views, and might be termed an environmental or a contingency approach. The following sections examine each of these frameworks in some detail.

2.2a Management Characteristics and Strategic Heterogeneity

Strategic Choice

Several studies have examined heterogeneity in strategic behavior which results from differences in the characteristics of senior-level corporate executives. From a theoretical perspective, Child (1972) argued that political choice and decision-making behaviors influence the strategy and structure of organizations. Decisions by the dominant coalition of the firm - those managers with power and influence to direct organizational activities regarding strategic factors in the



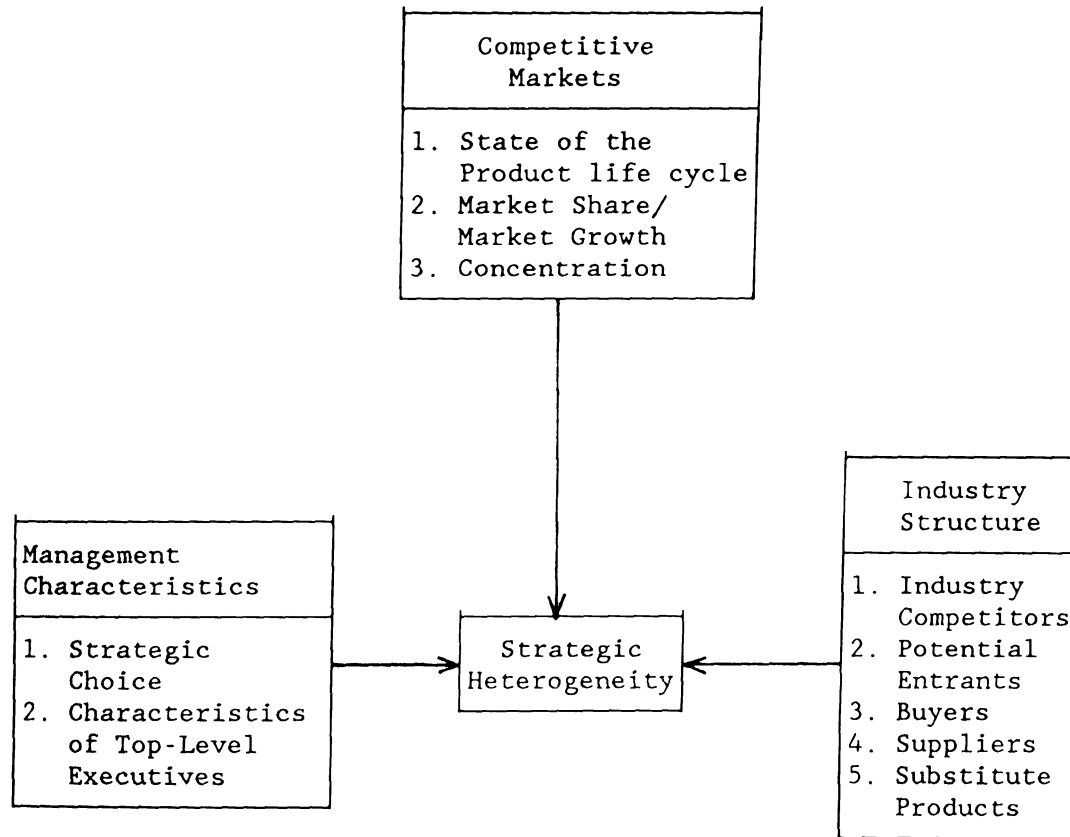


Figure 2-1

Forces for Strategic Heterogeneity



firm's environment, such as competitors, customers, suppliers, etc. - determine the economic exigencies and forces which act on an organization and impact structure. Differences among firms in the composition of the dominant coalition and their choices of environmental elements lead to variation in strategy and structure.

Bourgeois (1984) examined theoretical views of strategy and suggested that contingency models or mechanistic theories - for example, the Product Life Cycle theory suggested by Buzzell (1966) and Hofer's (1975) contingency model - lead to mechanistic views of strategy and of strategists as analysts. He critiqued such views as being too deterministic, and suggested such views ignored the fact that strategy assumes a human agent. For Bourgeois, the alternative was strategic choice - the effects of managerial decisions in shaping the environment and strategy of the organization. Executives, he argued, have a measure of "free will" in making strategic decisions. The nature of the strategist - the executive decision-maker - would influence the firm's strategy.

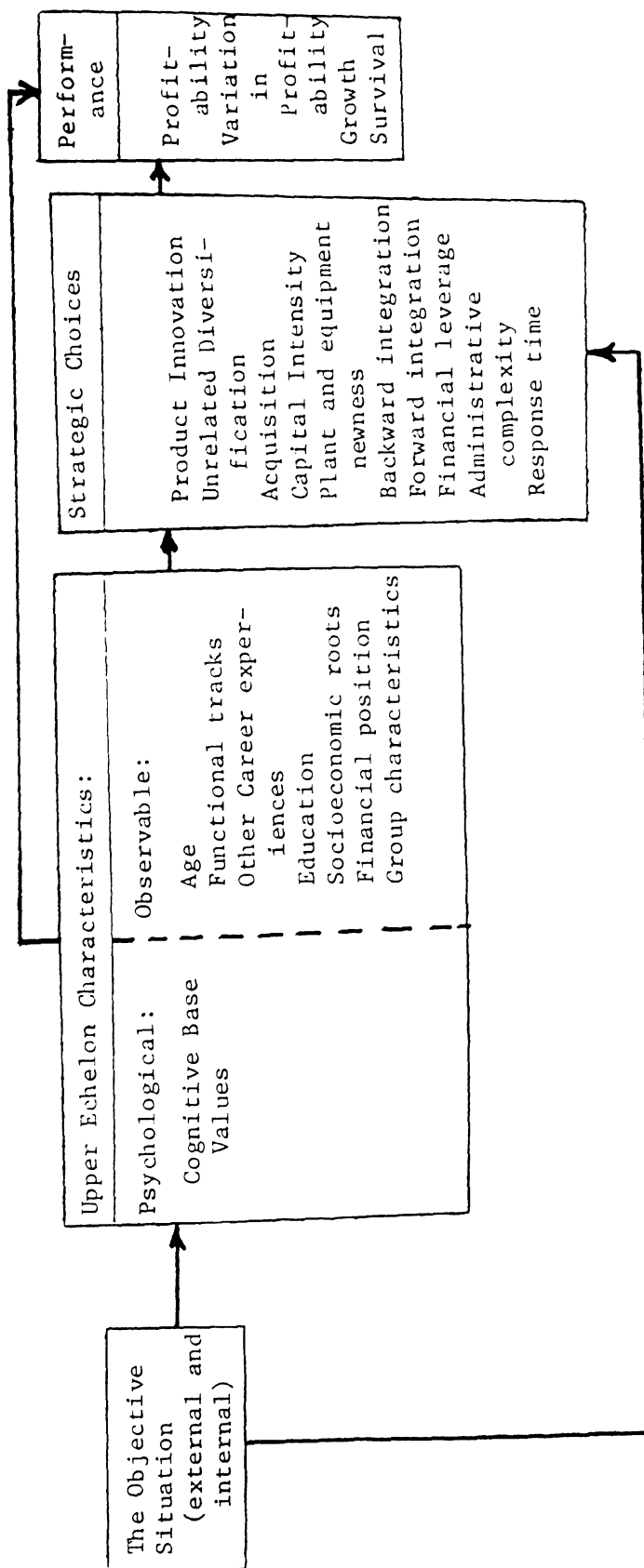
"Upper Echelon" Characteristics

The importance of top managers in the determination of firm strategy was further noted by Hambrick and Mason (1984). They attempted to synthesize existing literature on strategic choice and performance levels with research in other fields on the characteristics of top managers and developed a perspective on "upper echelons" of firms. They suggested that firms reflect the composition of the top

management of the company, and that personal characteristics of top managers will affect strategic choice and performance. They developed a model which is depicted in Figure 2-2, and a series of research propositions based upon this perspective. The essential point was that variation in strategy and performance is a result of the characteristics of the firm's top level managers and their resulting strategic choices.

Norburn and Birley (1988) studied a series of managerial characteristics within the context of corporate performance as a test of Hambrick and Mason's model. Data were obtained from 953 managers of 150 firms in 5 major industries. Among the characteristics studied were the date the manager had started with the firm, the number of firms for which the executive had worked, the number of directorships held, and the executive's age, education, job title, and career path. Results indicated systematic differences in managerial profiles between high- and poorly-performing firms within industries. While not specifically examining strategic choice behavior, their study lends some support to the model of Hambrick and Mason.

The effects of individual differences among firm managers on strategy were also discussed by Anderson and Paine (1975). Their model was based upon the perceptual processes employed by executives to understand the organization - environment relationship. These authors suggested that two sets of forces affect the strategy formulation process: perceptions of environmental uncertainty, and perceptions of the need for change in strategic properties of the organization. They developed a perceptual model as a way of analyzing the strategy



Source: Hambrick and Mason, 1984

Figure 2-2

An Upper Echelons Perspective of Organizations



formulation process, and utilized the model to prescribe corrective strategic actions. The model is reproduced in Figure 2-3. Note the crucial importance of managerial perceptions in the strategy process.

Miller, Kets de Vries, and Toulouse (1982) studied top executives' locus of control and its relationship to strategy making. They suggested that an internal locus of control would be associated with entrepreneurial behavior, and posited more proactive, risk-taking behavior and more organic structures in firms run by executives with high internal locus of control. A survey questionnaire of managers at 33 firms found a strong relationship between strategy-making behavior and locus of control, though the effects on relations with the environment and with structure were less direct.

Noting that a crucial element in the strategy process is the capability of planners and decision makers to use and process information, Barnes (1984) suggested that the cognitive biases of top managers would affect strategy. Flaws in the judgemental processes of top executives would lead to misdirected strategies. Using several selected cognitive biases, he argued that the executives may not be able to integrate data properly. Information for planning purposes would thus be distorted. A particular problem Barnes noted was that strategists can be very confident about biased judgements, since planning creates an illusion of control which corresponds to planners' desires for certainty. The presence of such individual cognitive biases would have differential impacts on a firm's strategy.

A similar argument concerning the effects of cognitive simplification processes on strategic decision-making was presented by

Perceived Need for Internal Change

		Low	High
Perceived Environmental Uncertainty	Certain	Cell 1 1. Fixed and well defined 2. Optimization; maintenance; efficiency 3. Process planning; maintain competence 4. Closed/stable/mechanistic 5. Commitment to existing power structure; less active search for environmental information	Cell 2 1. Need for identification and readjustment 2. Optimization; improve economies of operation; planned change 3. Process planning, integration; improve distinctive competence 4. Closed/stable/mechanistic 5. Commitment to existing power structure; systematic; conservative; less active search for environmental information; "integrative," entrepreneur
	Uncertainty	Cell 3 1. Continually adjusted to feedback 2. Satisficing; maintain capacity to cope with uncertainty 3. Adaptive or contingency planning; search of advance information; penetration 4. Open/adaptive/organic 5. Adaptive planner; information gathering	Cell 4 1. Varied and flexible 2. Satisficing; survival; develop effective problem solving 3. Adaptive or contingency planning; divestiture; merger; diversification 4. Open/adaptive/organic 5. Search for external information; adaptive; "sharp departure" entrepreneur

- Key: 1. Mission or domain
 2. Objectives
 3. Strategies and policies
 4. Organization form
 5. Role performance of policy maker

Source: Anderson and Paine, 1975

Figure 2-3

A Perceptually Based Strategy Model



Schwenk (1984). He reasoned that strategic decisions are "unstructured," due to the complexity of strategic problems. This lack of structure and complexity leads to uncertainty, which is problematic for decision-makers. Decision-makers will attempt to alter the level of uncertainty to avoid the difficulty. Schwenk proposed that the method by which strategists alter uncertainty levels is a cognitive activity of individuals - it is the simplification of the "reality" in which the firm must operate. Several techniques for simplification were discussed. The conclusion was that individual cognitive styles or processes affect strategic choice and action.

The studies which have been reviewed thus far focused primarily on the process of strategy formulation. Other theoretical writings and research have examined the effects of managerial characteristics on strategy implementation. Szilagyi and Schweiger (1984) argued that effectiveness at implementing strategy might necessitate matching the skills of executives to the types of strategy. Personalities and thinking styles of particular executives might be better suited for certain strategic activities. Their basic idea was tested empirically by Gupta and Govindarajan (1984), in a study of 58 division managers in 8 diversified firms. The results of this study indicated that there were significant relations between certain managerial characteristics and the strategies of their divisions. For example, divisions pursuing a "building" strategy were associated with executives with a background in sales and marketing, a greater willingness to take risks, and a tolerance for ambiguity. The sample limits the generalizability of the

results, but the conclusions illustrate the possible relationships among managerial characteristics and strategy.

Sturdivant, Ginter, and Sawyer (1985) suggested that managers' personal values are related to corporate strategy. They examined managers' conservatism and its effects on the social responsiveness dimension of corporate strategy. The authors developed a measurement to assess the degree of managerial conservatism and examined 1,438 managers in a variety of organizations. Their results indicated a negative relation between conservatism and social responsiveness. Chaganti and Sambharya (1987) studied manager's career paths, focusing on functional background and the proportion of executives recruited from outside organizations. They correlated executive's characteristics with the strategic orientation of the 3 tobacco companies. Company strategic orientation was classified using the Miles and Snow (1978) typology of Defenders, Prospectors, Analyzers, and Reactors. Results indicated that there were significant relationships between company strategic type and characteristics of managers.

To the extent that strategies are formulated and implemented by individuals in organizations, the presence of differences among top executives should normally lead to differences in the strategies which firms will pursue. The studies which have been discussed have attempted to explain some of the various forces and characteristics which explain the variation in strategic activity which result from such individual differences. The assumption is that strategy is a

choice activity - individuals, acting within organizational boundaries, make decisions about strategy which influence organizational actions.

Management Characteristics and Strategic Heterogeneity: Summary

The preceding review of the literature on the effects of management characteristics on firm strategy would seem to support the argument that much existing research is oriented toward providing an explanation of heterogeneity in strategy. The management characteristics view focuses on heterogeneity in strategy due to forces within the organization. Differences in firms' management teams results in differences in strategic choice and decision-making, with the result being differences in strategy. Heterogeneity among top executives - the key strategic decision-makers - of organizations leads to heterogeneity in strategy. While management characteristics are internal to the firm, the remaining two views - competitive markets and industry structure - are concerned with forces external to the firm.

2.2b Competitive Market Forces and Strategic Heterogeneity

A second perspective which has developed views strategy as a function of competitive market forces. Heterogeneity in firm's business strategies are hypothesized to be a function of particular combinations of factors in the market for a firm's products which shape the strategic response of the organization. Three dominant views can

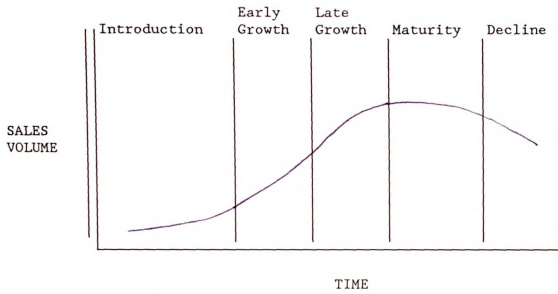
be identified: Product Life Cycles, Market Share/Market Growth, and Market Concentration.

The Product Life Cycle

The Product Life Cycle (PLC) represents the unit sales curve for some product, extending from the time it is first placed on the market until it is removed (Buzzell, 1966). Visually, the PLC resembles a bell-shaped curve, with unit sales on the y-axis and time expressed on the x-axis. While research on the PLC suggests that the number of stages in the life cycle varies, a four-stage cycle of introduction, growth, maturity, and decline is predominant (Rink and Swan, 1979). The typical Product Life Cycle curve is illustrated in Figure 2-4.

The PLC is an empirical phenomena which describes the effects of various factors on the unit sales of a product over time. At introduction, unit sales are low because few consumers are aware of the product. With recognition and acceptance, sales increase at an increasing rate, and the product enters a growth stage. With growth, however, additional competitors enter the industry and the market becomes smaller. Eventually, sales reach a plateau, and the product is in the maturity stage. Most consumers have purchased the product. As new products enter the market, consumers switch their buying behaviors to more innovative goods and services and sales of the original product decrease - the product is in the decline stage.

The Product Life Cycle concept has been utilized by several authors to explain variation in strategy. Levitt (1965) argued that



Source: Hayden, 1986

Figure 2-4

The Product Life Cycle



the stage of the product life cycle must be considered in strategic decision-making. For example, he suggested that in the growth stage of the PLC, rather than seeking ways of getting consumers to try the product, the originator should try to get them to prefer his brand by differentiating it from other products in the market. Michael (1971) suggested two different forms of product decline, and proposed different strategies for each type. Wasson (1974) extended the recommendations of the PLC to include all forms of market strategy, and Fox (1973) used the PLC to prescribe strategies for several functional areas of an organization beyond marketing, including production, personnel, finance, and accounting.

Hofer (1975), in arguing for a contingency theory of strategy, suggested that the Product Life Cycle was the most fundamental variable in determining an appropriate business strategy. His perspective is important, for it describes the differential effects which the PLC has on firm strategy. Hofer argued that the stage of the PLC combines with forces in the firm and the environment to determine the firm's strategic position. The stage of the PLC is the central factor, and through the various contingency conditions which Hofer described the PLC leads to variation in the strategic configurations and behaviors of organizations. The Product Life Cycle concept suggests that one source of heterogeneity in strategy is the stage of the firm's product in the life cycle.

Market Share/Market Growth

A second view on market forces and strategy variation is based on the concepts of market share and market growth. The central premise of these models is that strategy is contingent upon a firm's position with respect to its market share and the growth of the product-market (Buzzell, Bradley, and Sultan, 1975; Gale, 1972). Specific prescriptions for strategy formulation have been presented for both single-business (Henderson, 1970; 1979; Schoeffler, Buzzell, and Heany 1974) and multi-business or corporate levels of analysis (Hofer and Schendel, 1978; Abell and Hammond, 1979).

At the business level, the growth-share matrix of the Boston Consulting Group (Henderson, 1970) and the PIMS (Profit Impact of Market Strategy) data base (Buzzell and Gale, 1987) have been utilized to develop strategy recommendations for firms, based upon the market share of the firm's product and the growth of the market for the product (Hambrick, MacMillan, and Day, 1982; Woo and Cooper, 1981; Day, 1977). Heterogeneity in strategic behavior occurs because the position of any firm within a market - its market share - and the growth characteristics of the product-market of the firm are unique to each organization. If strategy is the firm's response to the market forces, the idiosyncratic nature of the market as experienced by any individual firm will lead to idiosyncratic strategies and heterogeneity will result.

Reviews of the PIMS and BCG approaches have found that the strategic prescriptions of the growth-share matrix and portfolio theory



have been widely utilized in strategy research and literature (Ramanaujam and Venkatraman, 1984; Wensley, 1982). However, some have criticized the market share models. Prescott, Kohli, and Venkatraman (1986) examined the underlying theoretical relationship between market share and profitability. Their findings led them to conclude that the relation between market share and profitability is context specific, and is influenced by managerial choice. Similarly, Anderson and Paine (1978) reviewed the research using the PIMS data base and concluded that, while the PIMS approach is one of the best approaches to the systematic gathering and evaluation of strategic actions of businesses, improvements are needed to increase the value and usefulness of the data for strategy processes. The Boston Consulting Group's growth/share matrix was evaluated by Seeger (1984). He suggested that the model is useful, but that the prescriptions of the model tend to be overly simplistic and can lead to bias in managerial judgement.

Market Concentration

A third view based on market factors examines the effects of concentration (the number of firms in a product-market) on market structure (Ornstein, Weston, Intriligator, and Shrieves, 1973). Concentration is hypothesized to affect strategy formulation by erecting barriers to entry and influencing potential economies of scale. One method which may influence market concentration is the use of advertising (Mueller and Rodgers, 1980). Advertising can be used to create product differentiation. Such differentiation is one method



which can create and/or maintain a competitive advantage (Porter, 1985). The ability of companies to erect entry barriers to markets through the use of advertising and other methods is an additional source of heterogeneity among firm strategies.

To the extent that markets differ in the degree of concentration, and firms differ in their position and power within a market, there will be differences in the strategies pursued by firms. The amount of market power which a firm can exert may be due in part to its position. If the firm is one of a few dominant firms - that is, if the market is highly concentrated and the firm is among those which dominate the market through high market share - its range of strategic options will differ from those of smaller firms in the same market (Gale, 1972). Or, if the market itself is fragmented, with little concentration and many competitors, the market will be highly competitive and the strategic options will differ based upon the characteristics of the market and the position of the firm (Woo and Cooper, 1981). Since firms will differ in their market share and power, there will be differences in the strategies pursued as organizations adjust their behavior to the market conditions.

Competitive Markets and Strategic Heterogeneity: Summary

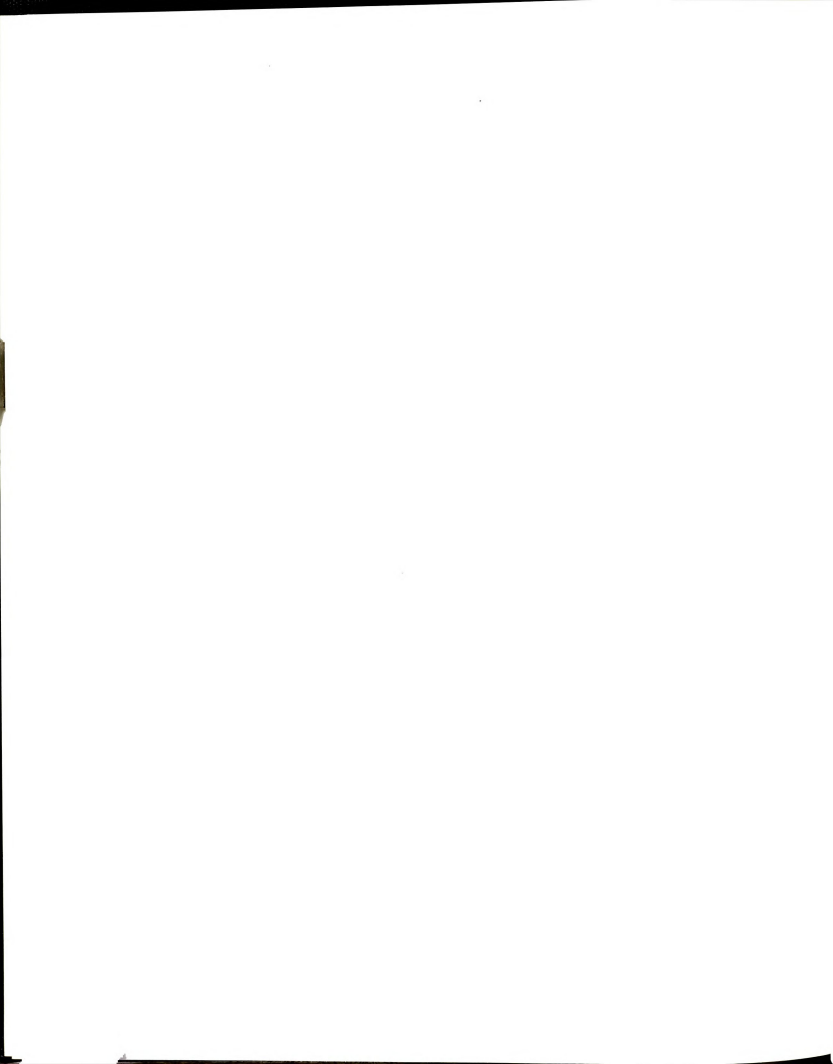
The effects of competitive market forces on the heterogeneity of strategy are based upon an analysis of the market for the firm's product. The major factors include the nature of the firm's product, its stage in the product life cycle, the firm's market share, and the

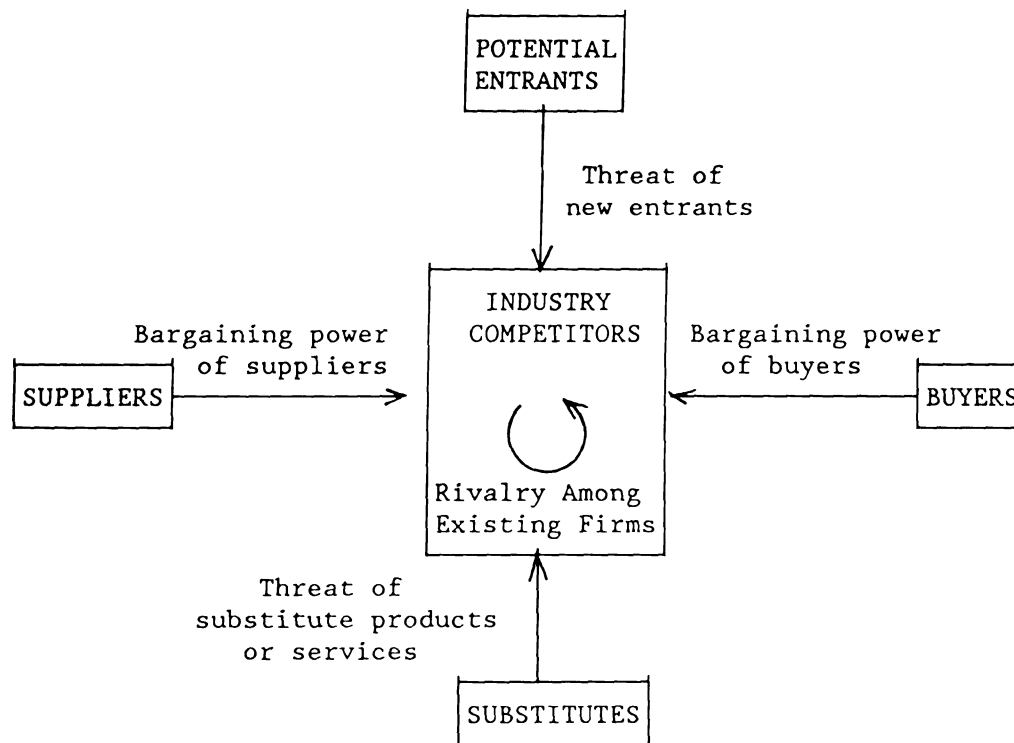
growth of the market. This might be termed the marketing approach to heterogeneity of strategy, as it is based on concepts developed by marketing researchers. The effects of management characteristics on heterogeneity of strategy is based on concepts developed primarily by sociologists and organizational psychologists.

2.2c Industry Structure and Strategic Heterogeneity

A third approach to explaining the heterogeneity in strategy has its roots in economics and the analysis of industries and industry structures. The chief proponent of this view is Michael Porter (1979a; 1980; 1985; 1986). Porter has suggested that a significant factor in the determination of the strategy for an individual firm is the structure of the firm's industry. Industry structure consists of five major elements: (1) the number and power of buyers of the industry's product; (2) the number and power of suppliers of materials used in the production of the industry's goods or services; (3) the availability of substitute products for the industry's goods or services; (4) the potential for new firms to enter the industry; and (5) the intensity of rivalry among existing industry competitors. Various characteristics of these five factors combine to determine the structure and competitive nature of the industry, as illustrated in Figure 2-5.

The major goal of a firm in a competitive industry, according to Porter, is to position itself within the industry in such a manner so as to obtain a competitive advantage (Porter, 1980). By developing a





Source: Porter, 1980

Figure 2-5

Forces Driving Industry Competition

sustainable competitive advantage, firms will be able to achieve above-average performance in the long run. For Porter, there are two primary mechanisms for obtaining a competitive advantage: low cost and differentiation. By combining these two types of competitive advantage with the firm's activities, three types of generic strategies can be identified: (1) cost leadership, in which the firm seeks to be a low-cost producer of goods and services within the industry; (2) differentiation, a strategy whereby firms attempt to establish their product or service as unique or distinct from those of competitors; and (3) focus strategies, which involve the targeting of specific market segments or groups in which the firm can establish a competitive advantage. Focus strategies have two variants: a cost focus and a differentiation focus.

Heterogeneity in strategy is more than variation among these three generic alternatives, though. For individual firms, there is a high degree of dissimilarity in strategic activity. For example, a firm which seeks to stake out a low cost position will find that "the sources of cost advantage are varied and depend on the structure of the industry" (Porter, 1985:12). In the case of a differentiation strategy, a firm seeks to "uniquely position itself to meet [buyer] needs....The means for differentiation are peculiar to each industry" (1985:14). With a focus strategy, "the focuser selects a segment or group of segments in the industry and tailors its strategy to serving them to the exclusion of others" (1985:15).

The use of the terms "varied," "unique," "differentiation," "peculiar," and "tailors" all suggest that, among firms within an

industry, heterogeneity in strategy will occur. While certain categories of strategic activities are suggested, there is a recognition that heterogeneity in strategy is necessary if the firm is to secure a position of competitive advantage. For individual organizations, the use of industry analysis indicates that heterogeneity in strategy is due to industry structures and the scope of a company's operations.

Dess and Davis (1984) performed an empirical test of Porter's generic strategies. They attempted to operationalize characteristics of firms which would identify the type of strategy (low cost, differentiation, or focus) being pursued. Their results indicated that two types of "generic" strategy - low cost and differentiation - could be relatively easily identified. White (1986) used the methodology of Dess and Davis and examined Porter's strategies within organizations possessing multiple strategic business units. He hypothesized that characteristics of the organization and the business unit's choice of strategy would combine to affect firm performance. Results gave partial support for the hypothesis. The strategies of the business units interacted with the organizational context to produce differences in performance. White's study illustrated the heterogeneity in strategy which arise from the effects of organizational factors and industry competitive forces.

Industry Structure and Strategic Heterogeneity: Summary

The use of industry structures as a means of explaining firm strategy leads to the concept of generic strategies at the industry level of analysis. For individual firms, strategy will vary based upon (1) the structure of the industry, (2) the firm's position within the industry, and (3) the unique characteristics of the firm. Industry structures seek to explain variation in strategy which occurs as a result of industry forces and provides a framework for such analysis. The central concern is with the diversity among firms in terms of their strategic activities and performance.

2.2d Environmental Forces and Heterogeneity of Strategy: A Contingency Approach

There is an additional approach to the heterogeneity of strategy. Unlike the management characteristics, market forces, or industry structure perspectives, however, this approach does not utilize a distinct set of factors but instead draws upon elements of the three previous perspectives. These elements are combined into a global designation of "the environment" of an organization. Instead of being a perspective - a way of viewing - heterogeneity of strategy, it is designated as an approach - a method of analyzing and integrating the factors and elements suggested by the three perspectives.

Several researchers have suggested that strategy is an organization's response to its environment (Chakravarthy, 1984;

Venkatraman and Camillus, 1984; Hrebiniak and Joyce, 1985). The purpose of strategy is to meet the demands of the firm's environment and by so doing to maximize performance. Strategy should enable an organization to adapt to or "fit" the environment. The strategy of a firm is therefore contingent upon the features and processes of the external environment.

The use of specific environmental characteristics and combinations of characteristics to explain heterogeneity in strategic planning and behavior is termed a contingency approach. Hofer (1975) presented perhaps the first attempt to derive a contingency theory of business strategy. He reviewed previous research on strategy and found that there were contradictory conclusions and a lack of theoretical precision, due to the number of variables being utilized. He suggested, however, that there was sufficient information upon which to base a contingency approach. Hofer developed a list of variables from previous studies, then refined the list using various criteria: degree of overlap with other variables, amount of impact of the variable, and level of application (corporate- versus business-level). Hofer's list of environmental factors which can influence strategy is shown in Table 2-1. He proposed that the effects of any variable or groups of variables on strategy were primarily contingent upon the stage of the firm's product in the life cycle. However, additional relationships among variables were postulated. Other similar efforts at developing contingency models of strategy have been presented by Hambrick (1983a), Lindsay and Rue (1980) and Hofer and Schendel (1978).

Table 2-1

Significant Strategic Environmental and Organizational Variables

Broader environmental Variables	Industry Structure Variables	Market and Consumer Behavior Variables
Economic Conditions	type of product	state of the life cycle
GNP trend	degree of product	market size
interest rates	differentiation	seasonality
money supply	# equal products	cyclicalilty
energy availability	price/cost structure	market segmentation
	economies of scale	buyer concentration
Demographic Trends	degree of automation	buyer needs
growth rate of	degree of integra-	buyer loyalty
population	tion	elasticity of demand
age distribution of	experience curves	purchase frequency
population	marginal plant size	
regional shifts in	optimal plant size	
population	rate of product	Organizational Charac-
	technological	teristics & Resources
Sociocultural Trends	change	
life style changes	rate of process	market share
consumer activism	technological	degree of customer
career expectations	change	concentration
	transportation and	quality of products
Political/Legal Factors	distribution costs	value added
antitrust regulations	barriers to entry	length of the produc-
environmental protection	critical mass for	tion cycle
laws	entry	newness of plant and
		equipment
		labor intensity
Supplier Variables	Competitor Variables	relative wage rate
		marketing intensity
degree of supplier	degree of seller	discretionary cashflow/
concentration	concentratnion	gross capital invest-
major changes in	aggressiveness of	ment
availability of raw	competition	
materials	degree of speciali-	
major changes in condi-	zation in the	
tions of trade	industry	
	degree of capacity	
	utilization	

Source: Hofer, 1975



The number of environmental factors which have been hypothesized to have an effect on strategy is significant. Boulton, Lindsay, Franklin, and Rue (1982) attempted to perform an empirical investigation of several environmental characteristics on strategic planning. Using factor analytic techniques, they found that environmental factors could be classified into four groups: customers, suppliers, sociopolitical, and technological. These groups represented the dominant environmental elements which were considered in the strategic planning process.

Bourgeois (1980) performed a conceptual integration of the literature on business strategy with that of organization theory, with a focus on the relationship of strategy and environment. Variation in environments, he suggested, leads to differences in the content of strategy. Bourgeois suggested that research on strategy content is limited to case study examples, due to firm variation; research on strategy processes are more cross-sectional in nature, since techniques are more well-defined. As a result of his review, Bourgeois classified three views of environments: External/Objective (general and specific task characteristics), External/Attributes (environmental volatility, shifts, etc.), and Internal (perceived). Strategy will vary as a result of differences in the characteristics and attributes of the environment and the perceptual processes of strategists.

The previous discussions of organizational characteristics, market forces, and industry structures can be viewed as limited forms of an environmental contingency approach to strategy. The factors used in



formulating theories of strategy and in the empirical research are subsets of the larger "environmental" universe. It is the combinations of the elements which differentiate between the perspectives of strategy which are employed. Irrespective of the environmental factors used or the classification system utilized in research on strategy, one central principle is common: strategy is a function of the characteristics of the environment and firm characteristics. Heterogeneity in strategy can be explained by considering the environmental factors, organizational factors, and the processes which influence the formulation and implementation of strategy.

2.2e Strategic Heterogeneity: Summary

The review of existing perspectives on business strategy indicates that a majority of the research and theorizing tends to view firm strategy as heterogeneous. Organizations will tend to pursue different strategies, due to differences in organizations, executives, markets, and industries. The unique configurations of the various factors in the environment of an organization combine to create a distinctive set of elements and forces which confront the firm. Variation in the elements leads to heterogeneity in the strategies which firms pursue. These models draw on efforts from the literature on organizational theory concerning organizations and environments (Aldrich, 1979; Aldrich and Pfeffer, 1976). In this view, firms are seen as responding or adapting to the demands of the environment (Charkravorthy, 1984), particularly those critical resource contingencies (Pfeffer and



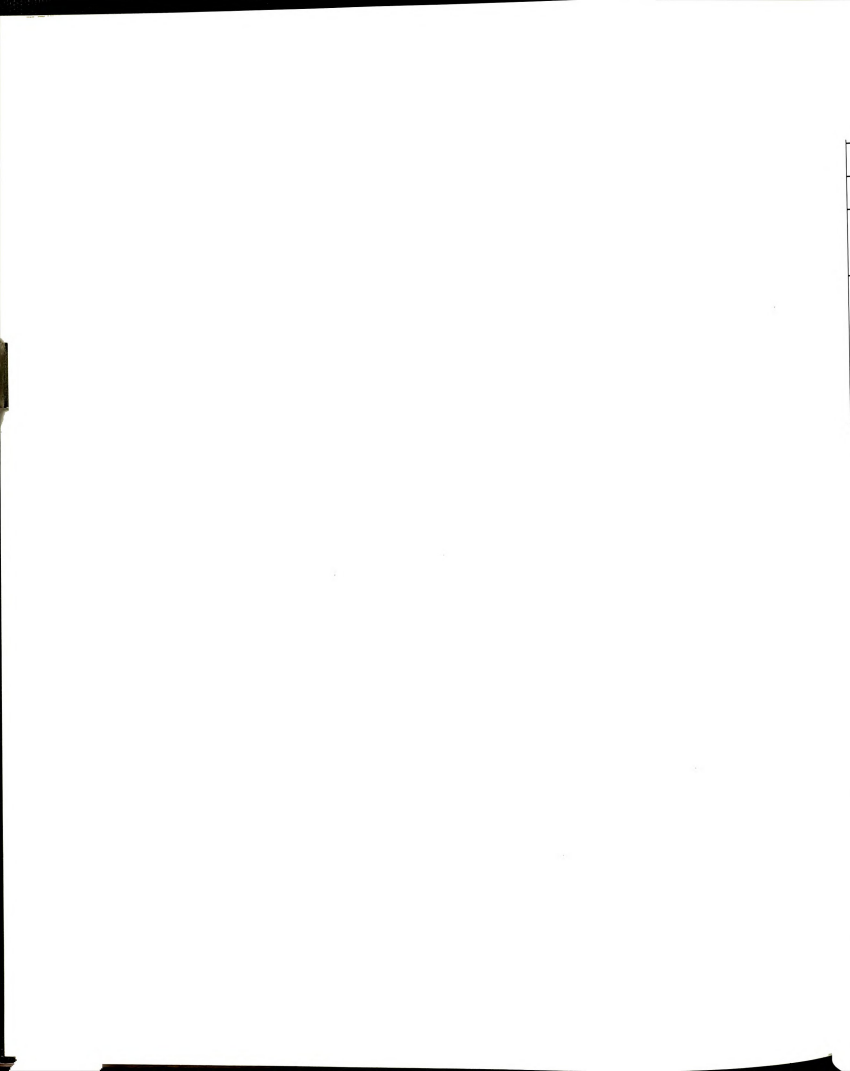
Salancik, 1978) which affect firm performance. Both environmental determinism and the strategic choices of executives influence organizational adaptation and strategy (Hrebiniak and Joyce, 1985).

2.3 Strategy Research and Homogeneity of Strategy

While heterogeneity of strategy is the dominant perspective in strategic research, there is evidence which suggests there is often homogeneity among strategies. In the initial stages of an industry life cycle, organizations display considerable heterogeneity in strategic activities. Once an industry becomes well established, however, there may be a push toward homogenization (Kimberly, 1980; Tushman and Romanelli, 1985). This section presents information which indicates that homogeneity of strategy may be a legitimate issue for strategy research. The evidence for homogeneity in strategy can be classified as focusing on either the content of strategy or the strategic process. Content issues concern homogeneity in the configurations of strategic factors in the firm and its environment. Process issues concern homogeneity in the implementation and execution of strategy. The primary elements are depicted in Figure 2-6.

2.3a Homogeneity in the Content of Strategy: Strategic Groups

Homogeneity in the content of strategy refers to similarity in the configuration of strategic factors among firms. As has been demonstrated, the dominant view of strategy suggests that heterogeneity



Strategic Homogeneity occurs in:	
STRATEGY CONTENT	STRATEGIC PROCESSES
Def: Homogeneity which occurs in the configuration of key strategic variables	Def: Homogeneity which occurs in strategic decisions, activities, and practices
Evidence: 1. Presence of Strategic Groups	Evidence: 1. Homogeneity in organizational structure 2. Homogeneity in strategic behavior.

Figure 2-6

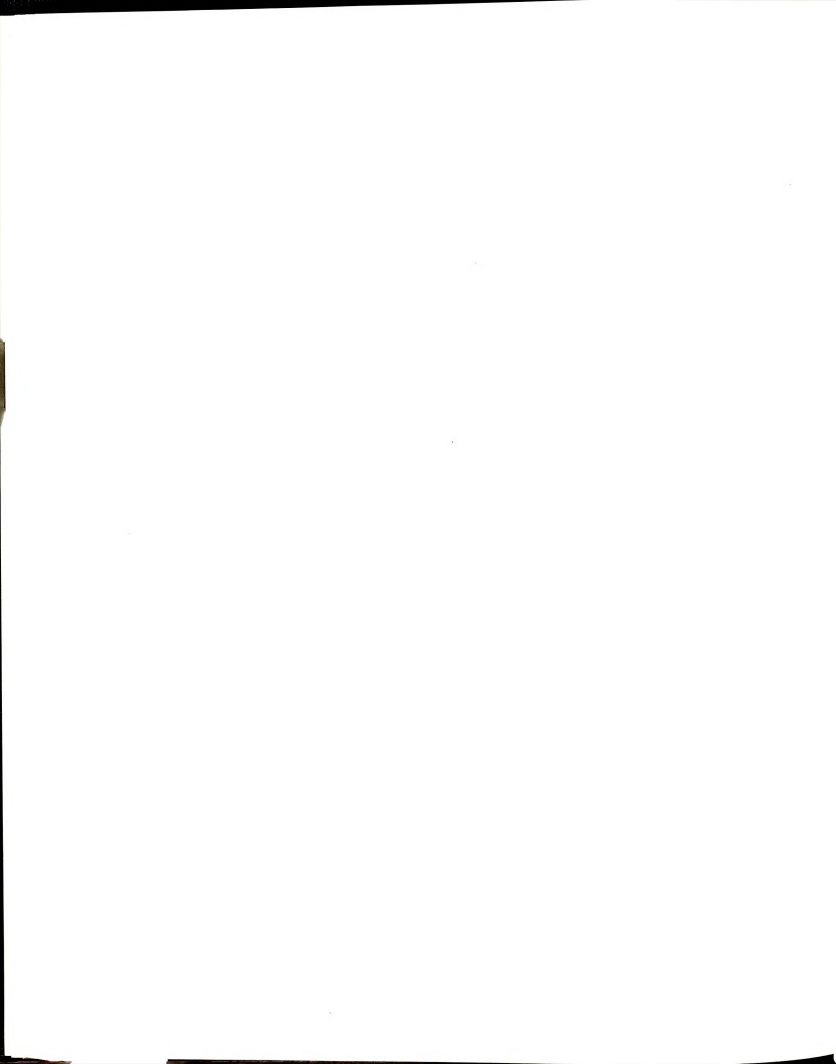
Forms of Evidence for Homogeneity of Strategy



will occur due to differences in the various factors present in the firm and its environment (Hofer, 1975). The number of factors and the possible configurations included in Hofer's (1975) review indicates to a great extent the heterogeneity which is possible in firm strategy. Due to this heterogeneity, Hofer (1975) and others (Lindsay and Rue, 1980; Hambrick, 1983a) have argued for the contingency approach to strategy. Yet while heterogeneity may be the dominant view, there is research which indicates that there is often homogeneity in the configurations of key strategic factors. The presence of such homogeneity would suggest that there may be conditions or circumstances in which firms would choose to adopt similar strategies. One such view of homogeneity which has been relatively well presented is found in the research literature on strategic groups.

Hatten, Schendel, and Cooper (1978) focused on strategic groups which are formed from similarity in business-level strategy. Their basic model suggested that firm performance is a function of controlled (or strategic) variables and noncontrolled (or environmental) variables. They argued for the use of quantitative models of business strategy in order to find patterns among controlled variables for comparison and analysis. The development of such models was hypothesized to depend on the identification of strategic groups. Strategic groups were defined as "groups of firms within an industry which follow similar (but not identical) strategies" (Hatten, Schendel, and Cooper, 1978:592).

In this context of strategic groups, Hatten, Schendel, and Cooper (1978) examined the brewing industry in the U.S. over a 20 year period



to identify factors which related to performance in the industry. The data revealed 6 strategic groups: large national brewers, seminationl and financially weak firms, strong regional brewers, weak regional brewers, small regional brewers, and a miscellaneous group. Their analysis of strategic business factors - for example, number of plants, debt structure, number of brands, market share, and industry advertising intensity, among others - indicated that the factors varied systematically by group, but that within groups there was similarity of the elements. The study suggests that firms with similar characteristics may pursue similar strategies, and that firms can be grouped within an industry on the basis of strategic behavior. Further discussion of homogeneity of conduct among firms in the brewing industry can also be found in Hatten and Schendel (1977).

The concept of strategic groups was further refined by Hatten and Hatten (1987). Strategic groups were defined as "a grouping of organizations which pursue similar strategies with similar resources." (Hatten and Hatten, 1987:329) They further discussed the concept of the strategic group: "...a strategic group is not an anthropormorphized unified competitive force of many firms. It is merely an analytical convenience.... Groups are a device to segment industries into sets of companies whose competitors, actions, and results are relevant to each other. Occupying the imagined space between firm and industry, groups offer a flexible meeting ground for strategic management and industrial organization." (1987:329)

Their review of the literature on strategic groups concluded that strategic groups were a legitimate analytical mechanism, and that

research should attempt to use multivariate techniques to define groups instead of bivariate classification systems. They extended the concept of the strategic group by arguing that properties of groups - in the form of mobility barriers between groups and contestability between and within groups - were useful for understanding the strategic activities of firms and as an explanation of industry structures.

McGee and Thomas (1986) conducted a review of the theory and research on strategic groups. They identified 21 studies on strategic groups in the period from 1972 - 1985. The studies they utilized are shown in Table 2-2. Note the diversity of industries which have identifiable strategic groups. This indicates that clusters of organizations with similar strategies may be fairly widespread among industries; strategic groups may be a rather ubiquitous phenomenon among organizations. They suggested that greater effort was needed to define concepts which might be useful for identifying strategic groups within industries, and called for greater efforts at understanding the formulation of strategic groups within industries.

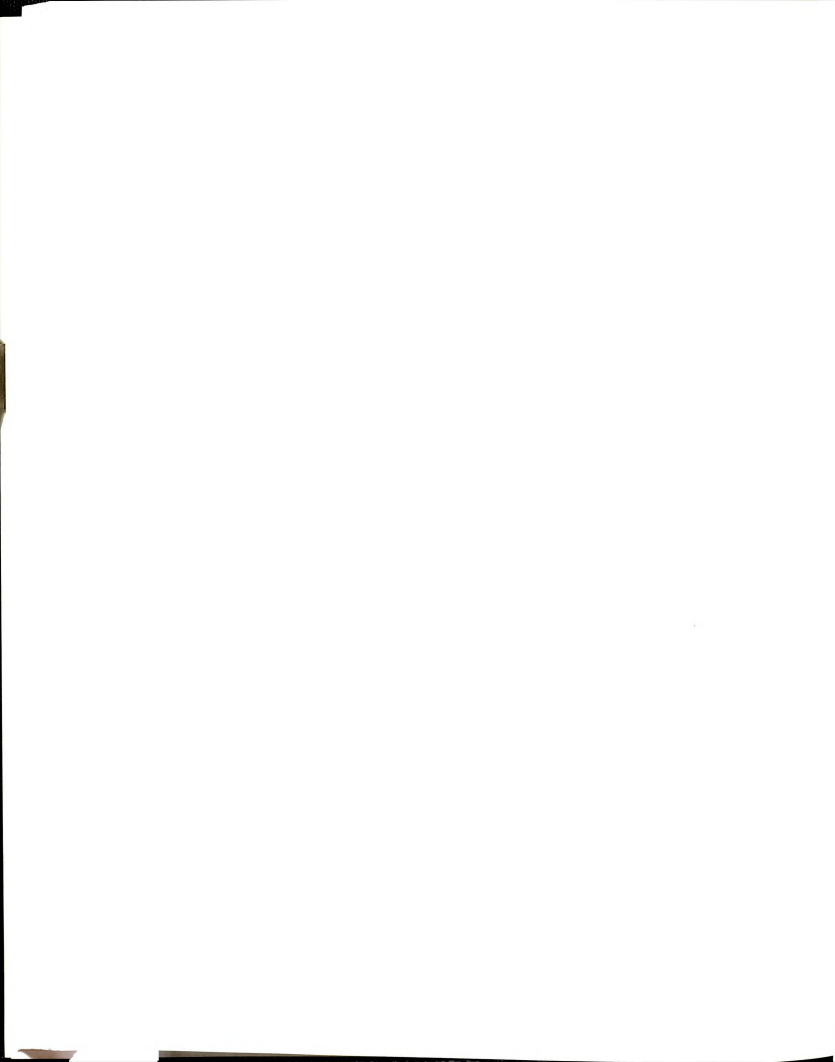
Newman (1978) argued that the presence of strategic groups may mitigate against market forces within industries. He conducted a study which showed that the effects of market structure on firm performance broke down in the presence of multiple strategic groups. While the groups were homogeneous in their strategic configurations, he also demonstrated that it was possible for a market to have multiple strategic groups and that, while there might be heterogeneity between groups, there was homogeneity of strategy within the groups. He suggested that markets might differ in the degree of heterogeneous



Study	Industry	Basis for strategic group formation	Study	Industry	Basis for strategic group formation
Hunt (1972)	'White Goods'	Product-line basis	Ryans and Wittink (1985)	Airline industry	Financial strategy
Neuman (1973, 1978)	34 four-digit 'producer goods' industries	-degree of product diversification	Baird and Sudhraman (1983)	Office equipment	Financial strategy variables
Porter (1973)	38 three-digit 'consumer goods' industries	Degree of vertical integration	Primaux (1985)	Textiles, Petroleum	Size, Investment behavior
Hatten (1974), Hatten and Schendel (1977)	Brewing industry	Relative size of firm	Hewell and Praeger (1983)	Medical supply	Customer groups served
Hatten, Schendel, and Cooper (1978)	Manufacturing	Manufacturing Variables	Hergert (1983)	2450 SBU's representing 50 industries	Mix of variables
Harrigan (1980)	Declining industries	Manufacturing, marketing, and financial variables	Dagg and Davis (1984)	Paints and allied products	21 marketing variables
Caves and Fugel (1980)	U.S. manufacturing industry	Dimensions of firms' strategic posture	Hawes and Crittenden (1984)	Supermarkets	Marketing strategy variables
Oster (1982)	19 consumer goods industries	Relative size of firm	Lahri (1983)	Finnish knitwear industry, 1969-1981	Size, nature of product group
Ramsler (1982)	Banking industry	Product strategy	Hatten and Hatten (1985)	Brewing	Marketing strategy variables
		Product market			

Source: adapted from McGee and Thomas, 1986

Table 2-2
Strategic Groups: Previous Studies



groups; in markets with few groups and little heterogeneity, there would be greater consensus and strategic similarity.

Cool and Schendel (1988) studied firms in the U.S. pharmaceutical industry. Their intent was to examine the relationship among strategic group membership, risk, and firm performance. They further explicated the dimensions which define strategic groups as "similarities in strategic actions intended to alter competitive advantage," (1988:212). Specific strategic actions of interest were those involving business scope and resource commitments. Data revealed six groups within the industry, and further analysis indicated differences in risk behavior and firm performance among groups.

Dess and Davis (1984) suggested that a firm's strategy determined its membership in a "strategic group". Strategic groups were presented as being determined by general patterns of environmental analysis and resource allocations. Arguing that strategic choice is a choice concerning strategic group membership, they conducted a three-phase study to identify groups and examine the effects of variation in group membership for firm performance. They were able to identify two groups, based upon Porter's (1980) generic strategies. Their results found differences in performance among groups and between firms within groups. Their study is an attempt to incorporate strategic groups as an outcome variable within the strategy framework; that is, firms may make strategic choices concerning their membership in various strategic groups. Rather than an analytic frame, Dess and Davis suggested that groups were a significant strategy variable.

Strategic Homogeneity and Strategic Groups: Summary

The use of strategic groups as an analytic tool for research on strategy now seems to be generally accepted in the literature. Recent work by Harrigan (1985) has attempted to refine the methodology for determining strategic groups and group membership using cluster-analytic techniques. The amount of research which has used the strategic group concept is fairly extensive, as the review by McGee and Thomas (1986) illustrates. The prevalence of the research findings on the presence of strategic is evidence for homogeneity in firm strategy.

Content-based approaches to strategic homogeneity examine the configuration of strategic factors. Strategic groups are based upon similarity in the strategies of firms within an industry (Hatten, Schendel, and Cooper, 1978). Clearly, strategic groups consist of firms whose strategies are relatively homogeneous. The presence of strategic groups in multiple industry settings indicates that there is often homogeneity of strategy among firms within industries.

2.3b Homogeneity in the Strategic Process: Choice of Organization Structure

While content - based perspectives on strategic homogeneity study the configurations of strategic factors in the firm and its environment, process - based approaches investigate the mechanisms through which organizations carry out the strategy. The major concern

is the methods which the firm employs to implement and execute the strategy. One central concern is the structure the organization adopts to implement the strategy. Another issue is the behaviors of firms - the operational strategies and decisions - which are intended to achieve the organization's goals.

The use of the multidivisional form (the MDF or M-form) of organization - in which the organization's structure consists of semiautonomous divisions, generally with decentralized operational authority and a central office for overall coordination - as a mechanism for strategy implementation has been discussed by several authors (e.g., Chandler, 1962; Rumelt, 1974; Williamson, 1975). Teece (1981) argued that the use of the MDF is related to better performance in large, multiproduct firms. Hoskisson (1987) presented evidence that the relationship between the use of the M-form and performance is moderated by the diversification strategy employed by the firm, but found general support for the contention that the multidivisional form may be used as a tool for implementing firm strategy.

The growth of the multidivisional form has been documented by Armour and Teece (1978) and Palmer, Friedland, Jennings, and Powers (1987). The study by Armour and Teece examined the growth of the M-form among firms in the petroleum industry; Palmer et. al. examined firms in the chemicals, petroleum, and metals industries. They found increases in the use of the M-form based upon factors in the environment and within the firm itself. Armour and Teece found that the use of the M-form was related to superior firm performance, leading

to the conclusion that the use of the M-form may be a beneficial strategic decision for firms in certain industries.

The use of organizational structure as a mechanism for strategy implementation is recognized by several authors (e.g., Chandler, 1962; Miller, 1987; Daniels, Pitts, and Tretter, 1984; Hill and Hoskisson, 1987). The growth and prevalence of the M-form suggests that firms may choose similar structural configurations as a means of executing strategy. Such homogeneity of choice in structure would represent homogeneity of strategic choice, since firms can choose any structural arrangement they deem appropriate. Consistent with the basic thesis on strategic homogeneity, the use of M-form structures may indicate a tendency for firms to pursue similar strategic actions in the form of structural arrangements.

2.3c Homogeneity in the Strategic Process: Strategic Behavior

There is also some evidence to suggest that firms consciously choose to adopt strategies which are similar to those of other organizations within their competitive sphere. While such evidence is largely anecdotal, it suggests that homogeneity in strategic activity does occur. MCI Corporation and U.S. Sprint are two firms which compete with AT&T in the area of long-distance telecommunications. Recently, it was observed that the services offered by the two firms have grown more similar, and that as a result competition now occurs in the areas of public image and the packaging of services (Powers, 1988). The product strategies of these firms have become more homogenous.

Meade (1987) conducted a survey of the auto industry in the United Kingdom and found that most firms pursued pricing strategies which were similar to the industry leader, Ford of Europe. In a study of U.S. banks and saving and loan institutions, Hampton, Guy, and Sinkula (1987) found that a saving and loan institution in a midwestern city had adopted a strategy of emulating the community's commercial banks, in order to position itself as no different from the banks in the minds of consumers. In a follow-up to the discussion of strategic groups, Cool and Schendel (1987) noted that firms in the U.S. pharmaceutical industry tended to imitate the strategic commitments of rivals. Horvat (1987) found that second-tier securities houses in Japan - those below the "Big Four" of Nomura, Daiwa, Nikko, and Yamaichi - seem to have opted to emulate the "Big Four" as a response to the challenge of internationalization of financial markets. Strategies in services offered and in operations have tended to duplicate those of the larger firms.

A study of the shake-out among firms in the U.S. color television set industry presents evidence for the presence of homogeneity of strategy and the possible effects of homogeneity on firm performance (Willard and Cooper, 1985). Differences were found among firms at both the corporate and business levels of strategy between firms which survived in the industry and those which failed. Results indicated similarity in strategic behavior among surviving firms, while those which failed were also similar to one another but differed from the surviving firms.

The evidence from these studies, though primarily anecdotal, nevertheless does suggest that firms may consciously choose to imitate the strategies of rivals. That such strategic choices would lead to homogeneity runs counter to the dominant perspectives on strategy, which suggest that firms should seek to differentiate themselves from competitors through developing a distinctive competence or a competitive advantage. These studies show, however, that firms often choose emulation rather than differentiation, similarity over distinction. Over time, such choices would lead firms to resemble one another in the courses of action which they adopt and in the decisions concerning resource allocations which support their actions - there would be homogeneity of strategy.

2.3d Strategic Homogeneity: Summary

Research in the strategy field indicates that there may be reason to believe that the strategic actions of firms may tend to be similar to those of others companies within the industry or business segment. The presence of identifiable strategic groups seems to offer support for the contention that an organization's strategy may be similar to others within its industry. The growth of the multidivisional form of organization may suggest that firms adopt similar structural configurations as part of the process of strategy implementation. Finally, the observations concerning the similarities of strategic behavior among firms indicates that strategies may often be homogeneous. The evidence from these studies and other related

efforts examining homogeneity in organizational structures (Barnouw, 1966-1968; Fennell, 1980) suggests that firms may have greater similarity in strategies and strategic action than would be expected, given the prevailing view of strategy as contingent on environmental-organizational relationships and executive choice. The quantity of environmental and firm variables and the interrelationships between these makes for a complex and dynamic system. The resulting outcomes (strategies and structures) would be expected to demonstrate a great deal of diversity. Yet the data from the studies reviewed in this paper suggest that there is greater similarity than would be anticipated, given the assumptions about the nature of strategic activity. Why do firms demonstrate such homogenization of strategies?

2.4 Isomorphism: Competitive and Institutional

The concept which may best account for the observed homogenization of strategy is the process of isomorphism. Hawley (1968) describes isomorphism as a constraining process that forces one unit in a population to resemble other units that face the same set of environmental conditions. That is, units subject to or operating within similar environmental arrangements will develop similar forms of structure and action. Aldrich (1979) suggested that isomorphism occurs as organizations modify their characteristics in a direction of increasing compatibility with the environment. In accord with the work of Fennell (1980) and DiMaggio and Powell (1983), this paper suggests

that there are two types of isomorphism: competitive and institutional.

Hannan and Freeman (1977) have suggested that the primary mechanism of organizational change is by selection through competitive processes. They argued that isomorphism among populations of organizations develops because non-optimal forms are selected out of the population, or because organizational decision-makers learn appropriate responses and adjust their behavior.

Dominant perspectives on strategy assert that isomorphism in organizations is due to the effects of forces in the organization's competitive environment. Competitive markets, industry structures, and organizational characteristics all presume that variation occurs among firms, due to differences in structure and strategic behavior (Carroll, 1984). The environment changes independently of the organization and forces in the competitive environment determine the structural forms which will survive. In capitalistic economies, the market is the primary selection mechanism (DiMaggio and Powell, 1983). The struggle for the limited resources available within an environment leads to competition among firms. By selecting certain types of organizations in the environment, competitive forces lead to isomorphism. These competitive forces are due to behaviors of firms in the marketplace. Such behaviors might include competitor's actions with respect to product pricing, distribution, and scope of product line; the use of pre-emptive contracts for sources of supply of raw materials; promotional activities of competitors; and so on. Firms which possess the requisite characteristics survive; those which lack such features

are selected out of the environment (McKelvey and Aldrich, 1983). Over time, there is a tendency for similar types of firms to survive, with the result that the structures and strategic actions of firms in the industry appear homogenous.

Competitive isomorphism assumes a rational system which emphasizes market competition, niche change, and fitness measures (DiMaggio and Powell, 1983). This approach is adequate for those environments in which there is free and open competition among firms. However, it is not wholly appropriate for those environments in which competition is limited (such as oligopolistic market structures) or regulated by law (e.g., utility industries). In addition, as Williamson (1975) has argued, modern markets are subject to various forms of imperfections in competitive relations. The presence of such imperfections gives firms a basis for engaging in strategic behavior, since one goal of strategy is the alteration of the competitive structures of the environment and the industry (Porter, 1985).

The assumptions which underlie the competitive isomorphic model are frequently violated by the environments of organizations. Forces beyond those of the competitive environment are present and may influence the strategies of firms. Firms compete for political power and institutional legitimacy (Carroll and Delacroix, 1982), and also for social as well as economic fitness (Aldrich, 1979). Suppliers (Porter, 1980), governments and other regulatory agencies (Freeman, 1984), and various other societal groups such as consumer interest organizations (Preston, 1981) are legitimate concerns for organizational strategists in formulating corporate strategies. The

presence of such arrangements within the environment of organizations may give rise to institutional structures and forces, including isomorphic forces for homogeneity in strategy (DiMaggio and Powell, 1983). The concept of institutional isomorphism may be a useful tool for understanding the process of formulating strategy in corporations in contemporary environments. The following chapter develops a perspective on strategic homogeneity based upon institutional isomorphic forces.



Chapter Three

Institutional Isomorphism, Mechanisms, and Homogeneity of Business Strategy: Theory and Research Hypotheses

3.1 Introduction

From the previous discussion in Chapter Two, it can be concluded that dominant perspectives in research and writing on organizational strategy focus on the issue of heterogeneity - the variation in strategies of organizations. There seems to be evidence, however, which suggests that firms often pursue similar - that is, homogeneous - strategic arrangements and behaviors. Current views emphasize the role of competitive market forces in leading to isomorphism and homogeneity. Yet such markets may be subject to imperfections which limit the isomorphic tendencies; and, there is a suggestion by some authors that competitive markets may lead to heterogeneity. In the absence of clear competitive market effects, what other forces might lead firms to pursue similar strategies?

The central thesis of this research is that institutional forces - inherent in the structuration of organizational fields - may lead to an increase in the homogenization of strategy. Such forces exist "in addition to" those for heterogeneity presented in the preceding chapter, and in certain conditions may dominate the strategy process with the result that homogeneity of strategy occurs.

The purpose of this chapter is to develop a broad or general perspective on the homogeneity of strategy, using an institutional framework. In order to properly develop such a perspective, it will first be necessary to define certain key concepts and terms. Following

this, three primary institutional forces for homogeneity of strategy - coercive, mimetic, and normative - will be discussed. Specific isomorphic mechanisms will be presented. The chapter will conclude with a series of research hypotheses based upon the institutional theory which will be investigated using the methodology described in Chapter Four.

3.1a Central Concepts of an Institutional Perspective

Institutionalization

Zucker (1987) presents two elements which define institutional perspectives on organizations. Institutionalization refers to "[1] a rule-like, social fact quality of an organized pattern of action, and [2] an embedding in formal structures, such as formal aspects of organizations that are not tied to particular actors or situations" (1987:444). Institutional theories suggest that organizations are influenced by normative pressures which may arise from the central government, or the "state"; from other organizations; or from within the organization itself. Under certain conditions, these pressures lead organizations to be directed by certain elements which are seen as in some way "legitimate," such as standardized operating procedures or policies, professional certification, federal and state legislative requirements, and so on. The adoption of such legitimated elements leads to isomorphism with the institutional environment and may increase the organization's chances of survival (Zucker, 1987).

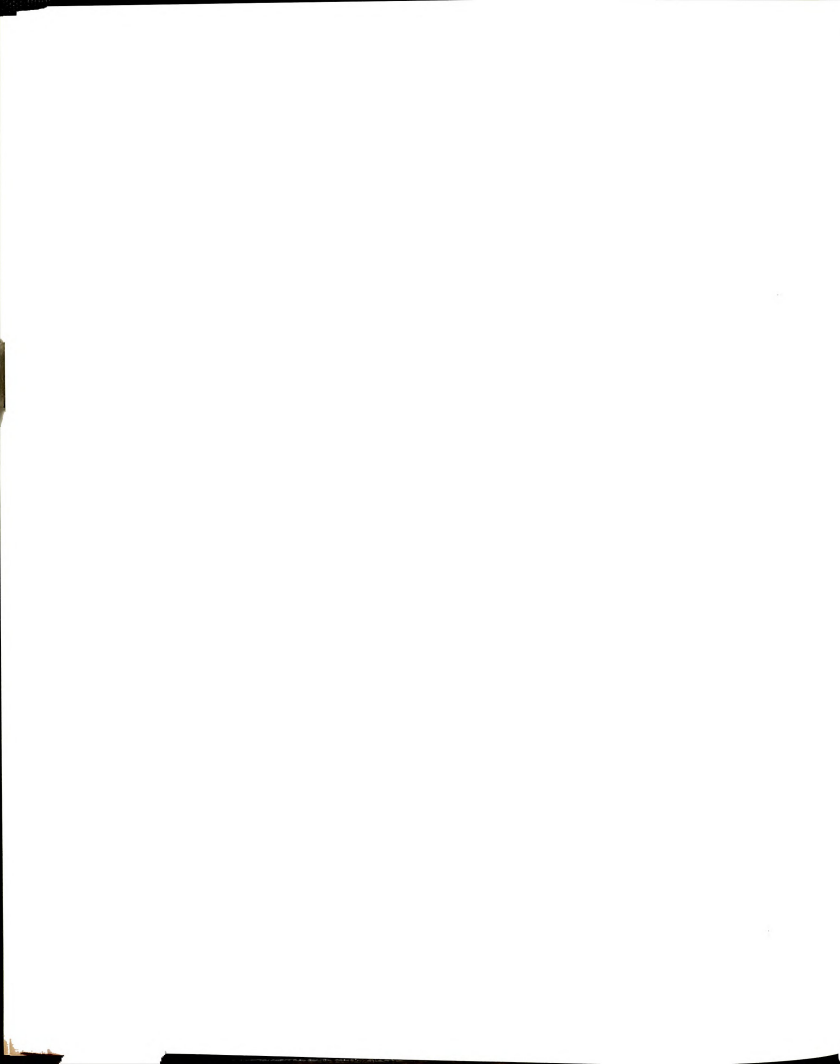
Two views of institutionalization have been identified (Zucker, 1987). The first suggests that environments of organizations are due largely to expansion of state jurisdiction (Thomas and Meyer, 1984). In this view, organizational arrangements are conceived as linked to a broad conceptualization of the state. Organizations conform to state requirements in order to increase the flow of resources and enhance long-run survival prospects (Meyer and Rowan, 1977). The institutional forces are largely external to the firm. The second view asserts that the implementation of institutional arrangements comes from within the organization, or from imitation of similar organizations (Zucker, 1977). Over time, routines or roles are formally embedded in the structures of organizations and become powerful sources of legitimation of action (Zucker, 1983). Institutional forces are internal to the firm. In either case, organizational actions take on institutional characteristics: they become social facts, found within formal structures and independent of the organization's members.

Use of an institutional perspective for research in organizations has been shown to have utility for empirical study of several organizational phenomena. Rowan (1982) examined the diffusion of administrative services in public school districts in California, and indicated that those services supported by institutional environments were diffused more quickly than those with imbalanced institutional environments. Tolbert and Zucker (1983) related introduction of civil service reforms to institutional forces. They suggested that such reforms were adopted because they became symbolic of "good government" rather than due to the efficiency of the reforms. Kaplan (1984)

examined the institutionalization of accounting practices, arguing that such methods were due to techniques developed in the 1930s for external reporting purposes. Despite the fact that such methods may not be adequate in the modern organization, due to changes in cost allocations, production methods, etc., the practices have become institutionalized as a legitimate way of reporting financial information. Eisenhardt (1988) found that an institutional model provided a good explanation for the sales compensation policies of a group of retail speciality stores. Institutional perspectives may be useful in understanding many of the activities of organizations. To date, however, no research has been found which addresses the effects of institutional forces on an organization's strategy.

Institutionalization and the Structuration of Organizational Fields

Institutional forces arise through a process of structuration (Giddens, 1979). Structuration consists of four parts: 1) an increase in the extent of interaction among organizations within the field; 2) the emergence of well-defined interorganizational structures of domination, and patterns of interorganizational coalition; 3) an increase in the amount of information with which firms must contend; and 4) development among participating firms of an awareness that they are involved in a common enterprise (DiMaggio and Powell, 1983). As organizations interact over time, the structuration process can lead to formalized patterns of interaction which are independent of the individual firms and structures of interrelationships which become



embedded within and among the firms. In short, firms become participants in institutional arrangements (Zucker, 1987). Institutional arrangements are found in the structural relationships which exist among a complex system of organizations and which develop through interfirm interactions.

One mechanism for partitioning or describing these structural relationships is the organizational field (Zucker, 1987). An organizational field refers to "those organizations that, in the aggregate, constitute a recognized area of institutional life: key suppliers, resource and product consumers, regulatory agencies, and other organizations that produce similar services or products" (DiMaggio and Powell, 1983:148). An organizational field may be defined as a group of organizations which are related through some common set of attributes or linkages thought to be of theoretical significance and specified a priori by the researcher. Organizational networks (Laumann, Galaskiewicz, and Marsden, 1978; also Thorelli, 1986), organizational populations (Hannan and Freeman, 1977; Carroll and Delacroix, 1982; McKelvey and Aldrich, 1983), and organization collectives (Astley, 1984) are ways of defining organizational fields.

An organizational field is an analytic tool, constructed from measurement of attributes or relations of a specific set of organizations (DiMaggio, 1986). Fields may be represented as an institutionalized domain (e.g., health services, higher education, the automobile industry) or by a sector of analytic interest, such as employee-owned firms (Rosen, Klein, and Young, 1986) or auto industry

suppliers in the state of Michigan (Skivington and Buchko, 1988). An organizational field is generated by the partitioning of the universe of organizations into subsets which are related through some specified elements or processes. Organizational fields are often defined by their members through the structuration process (DiMaggio and Powell, 1983).

The structure of an organizational field is determined through empirical investigation. The description and analysis of the structure of an organizational field requires an understanding of two primary concepts: connectedness and structural equivalence. Connectedness refers to "the existence of transactions tying organizations to one another; such transactions might include formal contractual relationships, participation of personnel in common enterprises such as professional associations, labor unions, or boards of directors, or informal organizational ties like personnel flows" (DiMaggio and Powell, 1983). The greater the number of transactions which bind organizations to one another in a field, the more connected the field.

Firms within an organizational field may be linked directly to one another or they may be indirectly linked through the presence of similar transactional arrangements. For instance, two firms may deal directly with one another as supplier and customer through a formal sales contract. Indirect linkages occur when firms share some common element. An example would be the presence of a bank CEO as a member of the board of directors of two firms, a manufacturing firm and an insurance company. Even though the manufacturer and the insurance

company may not transact directly with one another, they are indirectly linked through the presence of the common board member. Other example of indirect linkages include personnel exchanges, e.g., a vice-president of one company moves to another firm as its president; presence of common customers or suppliers; or the membership of two firms in a common association, such as a local chamber of commerce.

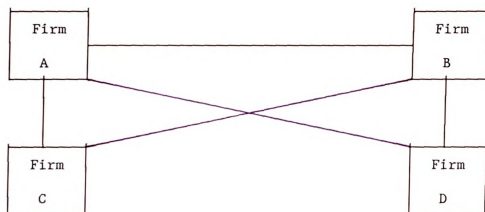
Often, the rules concerning the relationships which result from organizational connectedness are governed by a set of explicit, formal regulations. Contracts and legislation are two forms of formal organizational which occur connectedness through legal processes. The more codified, orderly, and regulated the mechanisms of organizational connection, the more formalized the connectedness of the organizational field. Since formalization is one aspect of institutionalization (Zucker, 1987), formalization is an indicator of the degree of institutionalization of an organizational field. An organizational field may be said to be highly structured if there is a great deal of connectedness among firms in the field, and if the connectedness among firms is highly formalized.

Structural equivalence refers to "similarity of position in a network structure" (DiMaggio and Powell, 1983). That is, two firms are structurally equivalent if they have similar ties to the same set of other organizations, even though the two firms themselves are not connected. The similarity of the ties or linkages among organizations is more than simply the existence of a linkage between firms; it also considers that nature of the linkage and the field level of analysis.

For example, both automobile dealerships and producers of automobile parts are related to the auto manufacturer. However, the nature of the linkage among firms - the dealer a purchaser of outputs, the supplier a provider of inputs - is substantially different. Depending on the field level under investigation, the two firms may not be structurally equivalent. Or, two firms may share a common supplier - for example, a fast food hamburger stand and a grocery store may obtain ground beef from a local butcher. If the hamburger stand runs out of beef, however, it will have to virtually cease operations, since it lacks a critical resource. The grocery, conversely, may be relatively unaffected; ground beef is not as critical a resource. While both firms share the same common linkage, the nature of the linkage - the dependence on the supplier - differs greatly. At a level of analysis which would examine dependence on suppliers, these two firms are not structurally equivalent.

It is possible for two firms within an organizational field to be the same in a structural sense without the presence of any formal or informal linkages between them. Firms which are equivalent in a structural sense would experience similar forces and may act similar to one another without explicit coordination between the organizations.

An illustration of the concepts of connectedness and structural equivalence may help clarify the structural analysis of organizational fields. Figure 3-1 illustrates a four-firm organizational field. Relationships among the firms are as shown in the figure. Assume that the linkages between the firms are due to some common mechanism, e.g., a series of contracts. The connectedness of firms in the field refers



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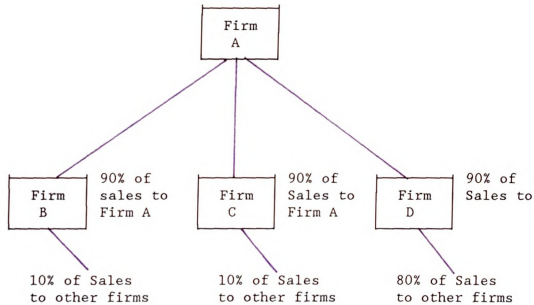
Firms A and B are structurally equivalent.
Firms C and D are structurally equivalent.

Figure 3-1

Institutionalized Relationships in
Organizational Fields:
Sociomatrix Analysis

to the number of linkages between firms. This is displayed using the blockmodel approach of DiMaggio (1986) in the matrix at the bottom of Figure 3-1. Linkages are designated with a "1" in the cell if the organization in the row has a tie with the organization in the column. The connectedness of the field is the percentage of all cells that are '1s' in the matrix - referred to as "density" by DiMaggio (1986:338). The connectedness of firms in the field in this illustration is 83.33% (10 divided by 12). Note also that firms A and B are structurally equivalent, as are firms C and D, even though firms C and D have no formal ties to one another. Structural equivalence indicates that both firms have two ties, to firms A and B. Within the field, they are structurally equivalent.

Figure 3-2 also illustrates a four-firm organizational field. In this particular case, firms B, C, and D are linked to firm A through some form of dependency - assume that A is a customer for the outputs of B, C, and D. There is indirect connectedness between firms B, C, and D via the common customer. However, firms B and C sell 90% of their output to A, and the remaining 10% to other customers. Firm D only sells twenty percent of its output to A, and the remaining 80% to other customers. In this case, the three firms B, C, and D are not structurally equivalent. B and C are equivalent with respect to this organizational field, since the nature of their relationship to A is similar - both are dependent on A for 90% of their revenues. D is not equivalent to B and C, since its relationship to A differs from those of B and C. Structural equivalence may - depending on the field of



Firms B, C, and D are indirectly connected through Firm A.

Firms B and C are structurally equivalent.

Figure 3-2

Organizational Relationships in
Institutional Environments:
The Nature of Relationships Among Organizations
and Structural Equivalence - Example

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analysis under investigation - be more than simply linkages among firms. Structural equivalence must also consider the nature of the relations, particularly if the relations are of theoretical importance in the research.

Structuration and Strategy

As disparate organizations in the same line of business become structured into an organizational field, certain forces emerge which cause them to become more similar to one another. Firms may change their goals or objectives, alter their strategies and their strategic behaviors, and firms may enter or exit the field. However, in the long run, company executives making rational decisions construct around themselves "buffers" which constrain their ability to change further in later years. Dill (1958) has observed that the environment of organizations influences managerial autonomy. Institutional elements in the environment of organizations may direct executives to choose strategies similar to those of other firms, limiting managerial autonomy and placing constraints on strategic choice.

Strategies which are rational for individual organizations may not be rational if adopted by large numbers. As an example, Porter (1980) suggests that firms should seek to acquire a competitive advantage over their rivals. One means of doing so is through the adoption of new process technologies (Hayes and Wheelwright, 1983). One strategic response which may be employed by firms is to use new technology to acquire a distinctive competence in manufacturing (Wheelwright, 1984).

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Research on the diffusion of technological innovations (Selznick, 1957; Meyer and Rowan, 1977) suggests that early organizational adoption of innovations is motivated by a desire to improve firm performance. As the innovation spreads, however, there is a point at which the motivation for adopting the innovation is to provide legitimacy rather than to improve performance. At this point, adoption is driven by normative sanctions - firms wish to be perceived as possessing the "latest" technologies, or to be viewed as competitive with rivals. The legitimization of an organization may depend on its ability to demonstrate that it offers process technologies which reflect the "state of the art." The result is that, over time, the technologies of competitive firms within an organizational field may become more similar as a result of a strategy of differentiation through technological innovation.

Organizations may try constantly to change or alter their strategies. At a certain point in the structuration of an organizational field, the aggregate effect of individual changes in firm strategy may be to lessen the extent of strategic diversity within a field (DiMaggio and Powell, 1983). In effect, organizations in highly structured fields respond to an environment that consists of other organizations responding to their environment, which consists of organizations responding to an environment of organization's responses. In such circumstances, strategists construct around themselves an environment in which choice behavior is constrained. These constraints increase the likelihood that firms will pursue similar strategies by limiting the strategy alternatives available to decision makers. This

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is akin to Weber's (1958) "iron cage" of machine production and bureaucracy; it is strategy in an "iron cage."

The presence of similar strategic arrangements and behaviors has been documented by several researchers in the strategy field. Cool and Schendel (1987), in their study of strategic groups in the U.S. pharmaceutical industry over a twenty year period, found that some firms imitated the strategic resource commitments of rivals. They suggested that this was prompted by the observation that competitors had higher performance in terms of market dominance. Hatten and Schendel (1977), in their study of the U.S. brewing industry, found clear similarities between strategies of firms within competitive segments of the brewing market. National brewers tended to emulate one another's strategic decisions, and regional brewers showed similarities in strategic behaviors. Coser, Kadushin, and Powell (1982) describe the evolution in the U.S. college textbook industry from initial diversity to the current status, with only two organizational structural and strategic models (the "bureaucratic generalist" and the "small specialist").

In highly structured organizational fields, strategic activities may be driven less by competition or the need for efficiency. Relationships among firms are understood, innovations are quickly diffused, production methods are standardized or generally known by all firms, and strategies are discernable. Homogenization of strategies may emerge out of the structuration process. Such homogenization is affected by the structure of the field, the state, and professions, which DiMaggio and Powell (1983) contend have become "the great

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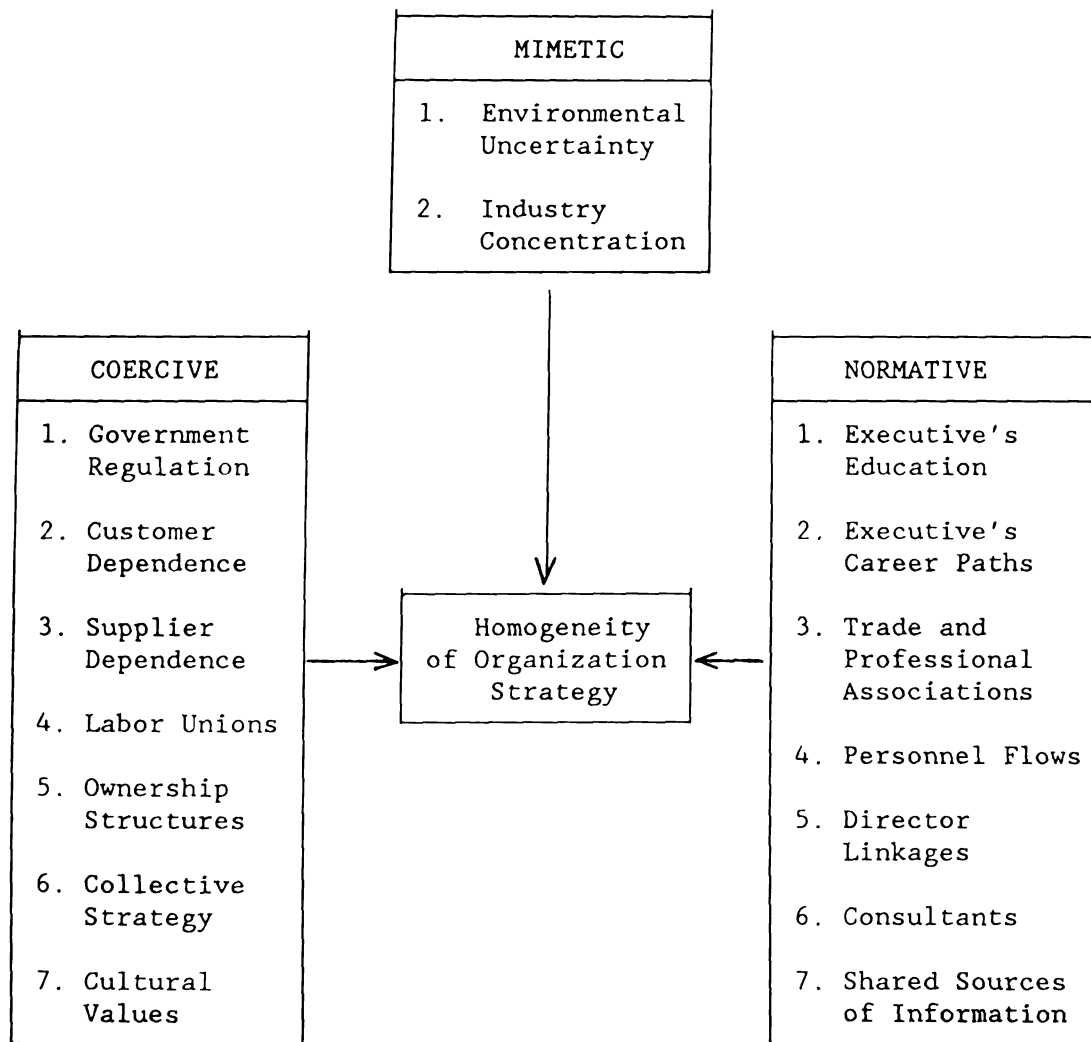


Figure 3-3

Institutional Forces and Mechanisms
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rationalizers of the second half of the twentieth century." These institutional factors and arrangements provide the basis for the isomorphic processes which lead to the homogenization of strategy.

3.2 Three Forces for Institutional Isomorphism: Effects on Firm Strategy

Following DiMaggio and Powell (1983), three forces for institutional isomorphic change can be identified: 1) coercive isomorphism, which occurs through dependence relations, political influence, and problems of legitimacy; 2) mimetic isomorphism, which stems from standardized responses to uncertainty; and 3) normative isomorphism, which results from professionalization. Each of these forces has distinct antecedent conditions. The typology is an analytic one - the empirical distinctions between them may not always be clear in studies of organization strategy. Since they are derived from different conditions, the effects of these forces may vary across industries or organizational fields. These three institutional forces and specific mechanisms for strategic homogeneity are depicted in Figure 3-3, which represents the basic research model of this paper.

3.2a Coercive Isomorphism

Coercive isomorphism results from both direct and indirect pressures exerted on organizations by other organizations upon which they are dependent, and by expectations of the society in which the

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firm operates (DiMaggio and Powell, 1983). These pressures are viewed by firms as forces for action or persuasion.

One powerful force is the level of government regulation. In some organizational fields, government legislation specifies the terms and conditions for a variety of firm behaviors. Manufacturers must install pollution control devices in accord with the rules of the Environmental Protection Agency; utility companies which wish to employ nuclear power must construct and operate such plants within the guidelines dictated by the Nuclear Regulatory Commission; financial dealings and reporting must conform to the requirements of the Securities and Exchange Commission; hiring practices must meet the regulations specified by the Equal Rights Act; contractual relations must conform to the Universal Commercial Code and the tenets of contract law; and so on. The effects of these changes are not inconsequential, for they place bounds on the strategic practices of firms. For example, the use of required pollution control devices is an expense to the firm which affects its profitability and returns, and thus influences financial performance.

The existence of a common body of laws affects many aspects of a firm's strategy and its strategic behavior. The impact of the legal and legislative sectors of the environment on strategy is generally accepted in the strategy literature (Quinn, 1978; Porter, 1979a). To the extent that these laws require all firms to obey without exception and equally, and provide for strict sanctions or penalties for non-compliance, they will create one force for isomorphism in strategy. Weber (1968) has suggested that the presence of a complex and

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rationalized system of contract law requires firms to adopt similar structures in order to honor their legal commitments. Similarity in structural arrangements may be one indicator of similarity in strategic behavior since, as Chandler (1962) has argued, structure follows strategy.

In addition to legislative impacts, governments may exert other forms of coercive force on organizations which leads to homogeneity of strategy. One way in which the government can influence firm behavior is through government purchases of goods and services. Firms in the defense industry, such as General Dynamics Corporation, Lockheed Corporation, Martin-Marietta, and others sell a majority of their output to the federal government in the form of weapons systems, military aircraft and vehicles, data processing systems and services, and so forth. Literally thousands of items are purchased by governmental units at the federal, state, and local level. Typically, such purchases involve contractual arrangements with the suppliers' behaviors often specified in great detail. For example, firms which do business with the federal government often must submit evidence of affirmative action in hiring practices. Government contracts often specify prices, delivery schedules, non-compliance sanctions, and many more requirements which must be met by the firm. The presence of such binding agreements will lead to similarity in the behavior of firms which wish to do business with government agencies.

Another way in which governments influence firm strategies is through the control of resources. The government owns large quantities of land in the United States which contain timber, minerals, oil and

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gas reserves, and other natural resources. Firms wishing to purchase or utilize government land for mineral exploration, oil drilling, or timber acquisition must comply with many regulations which guide their practices. These may specify environmental controls, reforestation, the price of the goods to be extracted, and more. By controlling large supplies of natural resources, the government can exert pressure on firms to behave in certain ways or risk losing a valued source of raw materials.

Government fiscal policy is yet another means of coercive isomorphism. By setting tax rates, budgeting governmental goods and services, and through monetary policy such as the Federal Reserve's setting the discount rate (and thereby the interest rate structure for the economy), firms are encouraged to engage in various sorts of activities. Tax rates may affect the investment decisions of organizations, as firms seek to acquire other companies for tax advantages. By offering tax relief to firms in certain industries, the government exerts a subtle pressure on firms to make decisions to pursue courses of action, participate in certain industries, or locate plants in specific areas (such as right-to-work states or in the "enterprise zones" of major metropolitan cities). Accounting rules, such as the valuation of inventory, and securities and exchange laws, which regulate financial reporting and capital markets, are other examples of the effects of government on firm strategy formulation. Governments also grant formal legitimacy through the legal chartering of corporations.

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The role of the government as an agent of coercive isomorphism is but one example of how the structure of many organizational fields can be impacted by institutional forces. The basic argument follows from the work of Pfeffer and Salancik (1978) on the resource dependence of organizations. They have suggested that firm structures are often contingent upon the key interdependencies of firms on other firms for essential resources. As Emerson (1962) has noted, power is a function of dependence. The power of Firm A over Firm B is a function of the degree to which B is dependent on A for necessary resources. To the extent that an organization must rely on the government for resource inputs or as a purchaser of outputs, the greater the power of the government to coerce behaviors from firms. Pfeffer and Salancik (1978) have noted that the decisions of governments have two characteristic features: politicians do not directly experience the consequences of their actions, and their decisions are applied to entire classes of organizations. Such decisions are less flexible and adaptive. Hence, government and political processes are one element of the coercive isomorphic forces within an organizational field.

The same logic of power-dependence relations applies to other organizational relationships. The greater the dependence of firms on another firm or group of firms as a source of resource inputs or as a customer for the firm's products or services, the greater the power of the supplier or the customer over the target firm and the greater the pressures for conformity in strategic practices. For example, the U.S. auto industry is dominated by three firms: Ford, General Motors, and Chrysler. However, there are literally hundreds of other firms which

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supply the so-called "Big Three" with parts for the production of automobiles. The auto assemblers have specified in great detail the requirements with which supplier firms must comply in order to be included in the supply base for the assembler company. These are codified (e.g., Targets for Excellence, 1987) and specify such things as the supplier's methods of strategy formulation (for example, firms must have a written business plan), strategic practices (firms will evaluate their suppliers; firms will do their best to reduce costs by five percent per year over the next five years; firms will employ statistical quality control methods), and the evaluation procedure which insures compliance and penalties for non-compliance. Since many (if not most) of the auto industry suppliers lack the resources of the Big Three, they have little choice but to comply if they wish to participate in the industry. Furthermore, many firms are extremely reliant on the auto industry as a customer for its products. In such cases, the power of the final assembly firms is magnified; the supplier firm must either do as required or face the prospect of going out of business. To the extent that the Big Three can require and enforce similar standards across companies, there will be a high degree of conformance and uniformity in the business practices and strategies of supplier firms.

Similarly, the retail toy company Toys 'R' Us controls nearly one third of the thirteen billion dollar retail toy market (Dunkin, Hammonds, and Maremont, 1988). By virtue of their dominance in the marketplace, Toys 'R' Us is able to influence toy manufacturers on a range of issues from pricing to product selection and development to

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advertising policy. While there are other large competitors, none possesses the size and scale of Toys 'R' Us. As a result, the firm is able to coerce its suppliers to pursue similar types of strategies, such as paying to advertise in a Toys 'R' Us ad circular.

Of course, the dependence model works both ways. Firms may be reliant upon a limited base of suppliers for necessary resource inputs. One case of such supplier dependence is presented by Mintz and Schwartz (1985). They examined directorates of large U.S. corporations and found that financial resource relationships were well represented on the boards of directors of many firms. Specifically, they found that the top executives of large U.S. banks and financial institutions were often members of several boards. Their analysis suggested that the concentration of power through the control of vital financial resources, such as loans, equity markets, and capital funding, allows the banking sector to determine to a large extent the activities of many firms in the industrial sector of the economy, including the largest firms. Similarly, a large variety of service infrastructures - often provided by monopolistic firms, such as telecommunications or utilities, or oligopolistic structures such as transportation - exert common pressures on the firms which must utilize them. Firms which are reliant on a common group of powerful suppliers will thus tend to adopt similar practices and strategies for dealing with the supplier group.

Trade and labor unions are an additional source of supplier coercive isomorphism in strategy. While many union contracts are negotiated at the local level, the existence of a national governing body which requires conformance to certain rules and procedures exerts

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an often powerful force on firm strategies. Since labor is frequently a major input into the productive process, firms must take collective bargaining agreements into consideration in developing strategic plans. Also, collective bargaining agreements are occasionally standardized across firms. For example, the United Auto Workers bargains with a "designated" target U.S. auto assembler, and the contract which results becomes the "pattern" for collective bargaining agreements at the other two assembler firms. To the extent that collective bargaining agreements are standard across firms within an industry or organizational field, there will be pressure for conformity in strategic behavior. In addition, the presence of collective bargaining agreements and labor unions can exert a force on non-union firms to offer similar wage and benefit systems or risk losing labor to unionized firms.

The imposition of strategic practices, structures, and operating procedures may also occur due to the ownership structures in the U.S. business system. Coser, Kadushin, and Powell (1982) have documented the use of standardized reporting procedures among subsidiaries of large conglomerate firms. Firms such as 3M Corporation require subsidiaries to specify strategic plans to the parent company, and new project proposals must meet the corporate "hurdle rate" criteria for return on investment (Peters and Waterman, 1982). Leibold (1987) presented evidence that the Allstate subsidiary of Sears, Roebuck and Company emulated the principles of its parent by "merchandising" insurance, adopting strategies and practices to reflect this strategy. Brown (1987) traced the purchase of InteCom, Inc., by Wang Laboratories

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from 1986 and found that the strategy for InteCom's Integrated Business Exchange (IBX) mirrored that of the Wang Business Exchange one year later. If several firms share a common owner, there may be a tendency for the strategies of the subsidiaries to show homogeneity in many areas due to the common requirements of the parent firm.

A recent study by Graves (1988) examined the effects of ownership of large amounts of stock in public firms by the firms termed "institutional investors" and corporate research and development (R & D) expenditures in the computer industry. Noting that many large organizations (pension funds, insurance companies, mutual funds, etc.) control significant amounts of the stock of many large corporations, Graves sought to examine the effects on corporate R & D spending. He suggested that institutional investors may not look favorably on such investment, preferring to have funds returned in the short term in the form of dividends, rather than the long-term growth which may be partially due to R & D efforts. His results indicated that R & D spending was lower in firms which had relatively higher levels of institutional investment. This suggests that ownership by large financial or investment organizations may in fact affect firm's strategic behavior.

There may also be differences due to the public versus private dimension of firm ownership. Firms which are publicly owned, i.e., whose stock is traded through recognized markets, face a different set of relationships than those organizations in which the ownership is held by a sole proprietor or a small private group of investors. Publicly traded firms must respond to requirements for information

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disclosure and financial reporting as mandated by the Securities and Exchange Commission. The performance of public firms is reflected in the market activity and can be compared to other similar firms. Publicly traded firms must manage to optimize shareholder value or risk the threat of a takeover or buyout. Private firms, on the other hand, do not have to publish annual reports for shareholders, do not need to make public their financial performance, are not subject to the vagaries of the financial markets, and are not threatened with hostile takeovers. Slater (1987) suggested that one reason many firms pursue leveraged buyouts - in which the management of the firm "takes the company private," that is, acquires the stock of the firm and in effect privatizes the organization - is to reduce or eliminate the effects of shareholder demands. Management can then take action which is more in the long-term interest of the firm rather than feel pressured by shareholders to maximize short-run returns. The nature of ownership - public versus private - may thus have an impact on the strategies which firms pursue. Firms which are tied to external constituencies through public ownership mechanisms are more likely to pursue similar strategies than those firms which are privately owned. Private owners are relatively free to pursue those strategies they wish, without facing coercion from shareholders.

Other social groups within the society may exert coercive forces for homogeneity in firm strategy. Consumer groups and consumer activists may pressure firms to meet various criteria in the manufacturing of goods or set standards for services. Periodically, concerns are expressed in the business press over the lack of ethical

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behavior among firms, and editorial writers and others will express concern and attempt to influence companies to adopt more ethical standards to govern their practices.

Cultural values and beliefs of a society may have a coercive influence on firm strategies. One recent example is the debate over merger and acquisition activity as a means of enhancing shareholder value (Slater, 1987). Corporate "raiders," such as T. Boone Pickens, argue that the threat of a corporate takeover forces managers to set strategies and operate their companies so as to maximize returns to the shareholders. A review of recent articles in business periodicals such as *Business Week* seems to indicate that the threat of takeover is a significant concern of many top executives. If society accepts the argument that merger and acquisitions benefit the economy, there will be a great deal of pressure on managers to set strategies and operate their businesses in order to optimize the shareholder's position. Whether or not this is in the long-term interest of shareholders is the subject of continuing discussion (Lubatkin, 1987, 1983; Singh and Montgomery, 1987). However, this illustrates how forces in the society and in suppliers (shareholders are the suppliers of equity capital to the firm) act as coercive forces for isomorphism. If firms are concerned about the threat of a takeover, they may tend to adopt similar strategies to avoid the acquisition such as the use of so-called "poison pills" and "greenmail."

A contemporary development in the literature on organization strategy suggests yet another means for coercive pressures toward isomorphism and homogeneity of strategy. Astley and Fombrun (1983) and

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Astley (1984) have argued for the presence of collective strategy among firms within an industry. Collective strategies are "attempts by sets of organizations to manage their mutual interdependence and the system dynamics of their interorganizational environments (Bresser, 1988:375). The concept of collective strategy indicates that firms take into consideration mutual interdependencies and relationships in establishing their individual strategy. It seems likely from previous discussions of ownership relations and supplier/customer coercive forces that firms which engage in collective strategic efforts will tend to adopt similar strategic behaviors in order to facilitate the performance of the collective. For example, product features may be standardized in order to allow for easy transfer of technology, as is the case with the use of the MS-DOS operating system for personal computers. Or, product quality levels may be mandated by an industry group, such as Underwriters Laboratories, which dictate product standards and perhaps production technology as well. Through the focus on an organizational group as the unit of analysis, collective strategy presents yet another plausible method of encouraging homogeneity in strategy across organizations.

This discussion suggests that the effects of rational governments and organizations and the structures of interdependencies between organizations serve to coerce or force organizations to adopt strategies and strategic practices which reflect rules which are legitimated by these institutions. Over time, these institutional forces will tend to pressure firms into adopting strategies which are similar in content and in practice in order to meet the demands of

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institutional legitimacy, which is a major resource for many firms (Carroll and Delacroix, 1982).

3.2b Mimetic Isomorphism

Coercive authority is one institutional force for isomorphism. Another powerful force which may influence an organization's strategy stems from uncertainty. When the organization's goals are ambiguous, when technologies are poorly understood, or when the environment creates symbolic uncertainty (March and Olsen, 1976), organizations may model their actions after other organizations. Mimetic behavior offers some clear advantages to firms in highly uncertain situations. Faced with ambiguous causes, unclear solutions, and dynamic change, modeling can lead to the adoption of a viable solution with little expense to the firm (Cyert and March, 1963). Modeling provides a rationale for action, and can establish premises for decision making and strategy formulation.

Environments of organizations are highly complex and dynamic (Duncan, 1972). The magnitude of the number of factors within the environment and the rate of change among factors can exceed the limited information processing capabilities of human beings (Nisbett and Ross, 1980). Research by Mintzberg, Raisinghani, and Theoret (1976) suggested that strategic decisions are characterized by novelty, complexity, and open-endedness. Strategic decisions involve choice under conditions of uncertainty and ambiguity. In such circumstances, firms may seek to model the strategies of other firms. The

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difficulties inherent in strategic decision processes can lead executives to adopt a "me, too" or "follow-the-leader" posture as a means of overcoming the problems of strategic analysis and choice.

Mimetic behavior, such as imitation or modeling, may be a response to uncertainty. Firms may be unaware that they serve as models for organizations or may have no desire to act in such a capacity (DiMaggio and Powell, 1983); nonetheless, they still become a source of strategies and practices which borrowing firms may use. Models may be diffused indirectly and unintentionally through employee transfer or turnover, or explicitly through organizations such as consultants and trade associations (DiMaggio and Powell, 1983). Mimicry has even been suggested as a legitimate form of business strategy (Hanan, 1985).

There are several examples of mimetic behavior in organization strategy. The study of the U.S. pharmaceutical industry by Cool and Schendel (1987) found that firms in the industry imitated the strategic resource allocations of rivals. The success of a rival or of a dominant firm in an industry may be a powerful force for mimicry, particularly in environments characterized by high levels of uncertainty. If managers are unable to ascertain the "proper" strategies for success, they may decide to emulate successful competitors on the assumption that the competitor's activities are somehow "effective" ones for the industry environment.

Dunkin, Rossant, and DeGeorge (1987) documented evidence that firms in the resort industry were mimicking the strategies of the successful Club Med resort chain, leading to reduced performance of

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Club Med. A study of hospitals and healthcare institutions by Coyne (1985) found that not-for-profit firms tended to emulate the growth strategies of investor-owned organizations, and indicated that one reason for this behavior may have been the fact that the growth rate for investor-owned firms was at least double that of the not-for-profit institutions.

Of course, successful firms may choose to copy the strategic practices of rivals as well. McWilliams (1988), in a case study of the IBM corporation - the leader in the data processing industry - found that IBM was willing to imitate competitors, such as Digital Equipment Corporation. This willingness may have been prompted by a perception that the industry was changing, and the company needed to change as well - but the high level of technological uncertainty and the dynamism of the computer industry made IBM's analysis for strategic purposes difficult. In such cases, even the dominant firm may choose mimetic behavior as a strategic response. Similarly, Skapinker (1986) performed a case study of the Xerox corporation. He presented evidence of a strategy on the part of the company to measure Xerox's performance against other companies and to then emulate the attributes that make those companies superior. He also noted that Xerox was undergoing a transition phase in its products, markets, and strategies, and that there was a high level of uncertainty as to the future direction of the firm.

The presence of powerful, dominant firms within an industry may be an additional force for mimicry. In industries characterized by high concentration ratios - that is, the sales of a few firms account for a

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large percentage of total industry sales - there may be a tendency for some of the non-dominant firms to copy the behavior of the dominant rivals. This may be particularly acute for firms which are close to the dominant firms in terms of sales and performance, but are not themselves a dominant firm. The case study of the Japanese securities industry by Horvat (1987), discussed previously, gives evidence of this behavior. The so-called "second tier" securities houses mimic the dominant firms as a strategic response to the internationalization of securities markets. The twenty one firms in the second tier lack the profitability, manpower, and capitalization of the four largest firms, and they face increasing competition from foreign brokerage firms and banks. In order to present themselves as legitimate members of the securities industry, these firms choose to imitate the strategic practices of the dominant firms. By operating in a manner similar to the large investment houses, the subordinate firms suggest that they are as capable of functioning in the industry as the dominant organizations.

There may also be a tendency for dominant firms to mimic one another in order to deny rivals a competitive advantage. A recent example has been the behavior of the U.S. auto makers - General Motors, Ford, and Chrysler. In order to increase sales and remove cars from inventory, Chrysler in the early 1980's offered customers cash rebates on purchases of new cars from dealer lots. These rebates ranged from \$500 to \$1,000. Within a short time span, General Motors and Ford began offering similar rebates. In the late 1980's, as a response to perceived high interest rates, Chrysler began offering buyers a reduced

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financing rate of 2.9 average percentage rate, as compared to the conventional finance rate which was much higher at banks and other lending institutions. Within literally days, General Motors and Ford followed suit. Recently, Teece (1988) noted that automakers were mimicking one another in the adoption of new car warranties.

Modeling also derives from employee transfers and through the presence of external agents, such as consultants. Employees may take with them knowledge of a firm's strategies and practices, which they are willing to export to rival firms or to firms in other industries. The auto supplier industry is one example. The author recently had opportunity to interview executives at several auto supplier firms, and found that many of these executives had worked for other supplier firms prior to their current employment. Also, many had experience with one of the Big Three firms - General Motors, Ford, or Chrysler - prior to obtaining a position with a supplier. Recent articles in news periodicals indicate that there is a propensity for military officers to obtain employment with defense contracting firms after retirement from active duty. To the extent that such employee transfers diffuse knowledge about the behaviors of potential models to other organizations, there may be greater tendencies for firms to mimic others.

Finally, much of the similarity in strategy may occur because there is a lack of variation in the strategies which are available for managerial choice and selection. Porter (1980) identified three basic strategy types, with variation within the three types. Miles and Snow (1978) found four types of strategy-structure relations; and Miller and

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Friesen (1978) delineated ten "archetypes" of strategy formulations. This suggests that, at a general or generic level of analysis, the range of strategic alternatives may be limited. Also, the "pool" of strategies from which manager can choose is restricted by the number and type of firms in existence. Modeling requires the presence of models which can be emulated. Kimberly (1980) studied organization births, and found that new organizations are modeled on old ones throughout the economy. He also determined that managers actively seek models upon which to build. If there are few models, firms are limited in the strategies which can be imitated.

Organizations may tend to model their strategies after similar organizations in the field which they perceive to be more legitimate or successful. The prevalence of this mimetic behavior can be credited more to the presence of institutional and structural arrangements within the organization field, and to the universality of mimetic processes than to any evidence that the adopted models enhance efficiency and performance (DiMaggio and Powell, 1983). The imitation and emulation of strategies is a significant factor in increasing the homogeneity of strategy among firms within an organizational field.

3.2c Normative Isomorphism

A third source of isomorphism in organization strategy is termed normative and is typically derived from professionalization. Following DiMaggio and Powell (1983) and Larson (1977), professionalization is defined as "the collective struggle of members of an occupation to

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define the conditions and methods of their work, to control the 'production of producers,' and to establish a cognitive base and legitimation for their occupational autonomy" (DiMaggio and Powell, 1983:152). The primary concern for this analysis is the growth in organization professionals, and in particular executives and managerial staffs of large corporations. Hall (1968) has asserted that the increased professionalization of workers whose futures are tied to the fortunes of the organizations which employ them has made the traditional dichotomy between organizational commitment and professional allegiance obsolete. Professions are also subject to coercive and mimetic processes, as are organizations. Furthermore, while the various kinds of professionals within organizations may differ from one another, there is often great similarity to professional counterparts in other firms. Two aspects of professionalization are sources of isomorphism. The first is the use of formal education requirements and the legitimation provided by university specialists. The second is the growth of professional networks which span organizations, and which allow information and models to be diffused quickly.

Universities and similar educational and training institutions are important centers for the development of organizational norms among professional managers and their staff. Shames (1986) studied the class of the Harvard Business School of 1949. He noted that many members of this class went on to secure positions as top executives in industry or government in the United States, and discussed the influence of their educational experience and the network of relationships among these

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executives as an influence on their career progression. He suggested that the similarity of their education and the relationships developed while in graduate school had an effect on the eventual success and performance of these executives.

Many business schools in the United States are influenced by the requirements of the American Association of Collegiate Schools of Business (AACSB), and must conform to the standards of the AACSB in order to achieve accreditation - a coercive institutional force for isomorphism in itself. The standards of the AACSB specify a common body of knowledge which must be taught to all undergraduate and graduate students in the business school, and as a result there is great similarity in course requirements across schools. In addition, the textbooks which are used must also meet with AACSB standards, and there is a remarkable homogeneity in the material which is presented to students. The fact that many organizations recruit students from specific college campuses and inquire about students' classroom performance is another force which pressures students to do well in learning material. The prevalence of the Master of Business Administration (MBA) degree among executives gives further evidence of the homogenization which occurs as a result of the educational process, since MBA programs typically offer a smaller variety of classes in the degree program. Also, executive training seminars and continuing education programs are further means whereby the normative forces for isomorphism in strategy may be exerted. As executives learn similar information and models about strategy and the strategy process, there

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An additional vehicle which encourages normative isomorphism is personnel flows among organizations. Through transfers, turnover, hiring practices, and promotion policies, firms create a system of exchange among executives which tends to filter and diffuse the knowledge about firm strategies and behaviors. As executives move through and between organizations, they are subjected to a wide range of socialization experiences and information acquisition opportunities. The presence of organizational career tracks insures that those who achieve senior management levels undergo similar experiences and development. To the extent that career tracks are similar across firms, there will be similarity in the perceptions and the choice behaviors of executives. The movement of executives among firms within an industry or organizational field is another means whereby norms are shared across organizations. If the organizations within an industry tend to select their applicants from the same pool, such as using the same universities, there will be homogeneity across firms in executives. While individual on-the-job socialization experiences may differ, many managers undergo anticipatory socialization which creates common expectations about personal behavior, organizational vocabularies, style of dress (Cicourel, 1970; Williamson, 1975), and standard methods of addressing and communicating with others (Ouchi, 1980). Therefore, as key strategic managers are selected from the same sources, filtered through a common set of attributes and experiences, and progress through different firms within an industry, the more they

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will come to view problems in a similar fashion, adopt similar policies and procedures, approach decisions in similar ways (DiMaggio and Powell, 1983), and formulate and implement similar strategies.

Professional and trade associations are another mechanism for the creation, definition, promulgation, and maintenance of norms and rules about organizational and professional behavior. Organizations and their executives who belong to such associations attend meetings and conventions at which the topics of discussion typically center around firm performance and managerial effectiveness. Speakers may be other members of the profession or they may be external agents: consultants, academicians, etc. Whatever the case, these sessions offer an opportunity for information to be exchanged and shared among managers. In addition, the opportunities for informal social contact between professionals at these seminars provides an additional means for the dissemination of knowledge and the building of a network of contacts who will be able to provide further data in the future. Another related source of normative isomorphism is the presence of trade publications or journals, which are circulated among members of the profession at various organizations. By providing a common forum for the exchange of ideas and information, such materials add to the diffusion of norms about organizational strategies and strategic practices.

A fourth mechanism of normative isomorphism is found in the interlocks among boards of directors of large corporations. One recent paper (Richardson, 1987) stated that there were over 100 major studies of directorship interlocks in the literature. The majority of the

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research efforts have been attempts to link directorship interlocks with firm performance (for example: Dooley, 1969; Pennings, 1980; Gogel and Koenig, 1981). However, many studies have pointed out the nature of interlocking directorships as mechanisms of organizational control (Allen, 1974; Mariolis, 1975), interorganizational cooperation (Palmer, 1983), and rationality (Useem, 1982). The presence of interlocking directorates can be a very powerful mechanism for isomorphism. Boards of directors are generally charged with overseeing the activities of the senior managers, and in often serve in an "advise and consent" capacity with respect to major strategic decisions. Because of their position in the corporate hierarchy and the fact that many board members serve on multiple boards within an industry or across industries, strategic practices which meet with board approval will often be similar across firms. Despite criticisms of research methods and the assumptions of research on interlocking directorates concerning the use of interlocks as an interorganizational strategy (Zajac, 1988), the "sharing" of board members can be a source for homogeneity of strategy. The presence of interlocking directorates among firms within an organizational field may be a significant force for normative isomorphism and strategic homogeneity.

Large organizations also find a relatively small set of major consulting firms which they can retain to perform various services (DiMaggio and Powell, 1983). The consulting organizations tend to diffuse a few, limited sets of strategic models within their client firms. Often, these consultants are retained to provide expertise in resolving specific problems which are similar across companies. Or, the

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consultant may use similar methods with various client firms. In this manner, certain practices can be spread throughout a group of companies due to the nature of the consulting relation, which allows one consultant to work for many organizations. The presence of a few significant consulting firms and the interrelationships among consultants and clients are an additional source of diffusion of information and subsequent homogeneity of strategic behavior.

The professionalization of management tends to proceed in tandem with the structuration of organizational fields (DiMaggio and Powell, 1983). The exchange of information, the flows of personnel, career paths and socialization processes, and the networks of relationships contribute to the creation of a commonly recognized set of rules for behavior, status, and norms and values which then become sources for further information flows across organizations. Ordering of status can occur through various means. The use of one or a few firms as key bargaining units in labor contracts may make these firms central in other areas as well. Government recognition of certain firms through awarding of contracts may give these organizations legitimacy and lead rival firms to copy their strategies and behaviors in order to obtain similar rewards. Certain firms may be recognized for their leadership in a field by designating executives as key members of trade associations and industry groups.

Often, diffusion of strategy occurs as managers move from organization to organization. Upwardly mobile executives often take with them patterns of behavior and strategic processes learned from their experiences in preceding jobs. Frequently, executives will move

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from central organizations to peripheral ones within an industry, as is the case with many auto supplier firm executives, who have left one of the Big Three manufacturers for a position at a supplier organization. Such movements also are often to positions of greater authority and responsibility, and the ability to influence the strategy process is magnified.

Through these several mechanisms, norms for firm strategies are spread through an organizational field. The structuration process of an organizational field makes it highly likely that the diffusion of strategies will, over time, lead to homogenization of strategic activity as forces for normative isomorphism exert their influence on the strategy process. The modern environment of organizations seems to be a very fertile ground for the spread of strategies among corporations.

3.2d Mechanisms of Isomorphism: Summary

DiMaggio and Powell (1983) have suggested that each of the preceding institutional isomorphic processes "can be expected to proceed in the absence of evidence that they increase internal organizational efficiency" (1983:153). That is, institutional forces for isomorphism in strategy are based not upon improving performance per se but rather on the institutional arrangements themselves. To the extent that the homogenization of strategy does lead to improved performance, the reason may be that organizations are rewarded for being similar to others within their field. Similarity in strategy can

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make it easier for firms to transact with one another, offers opportunities to attract career-oriented executives, and to be acknowledged as legitimate and respectable. It may often be the case that firms which pursue "deviant" strategies are seen by investors, customers, employees, and suppliers as "in trouble" or as "too risky." However, similarity in strategy does not indicate that conforming organizations are in any way superior in performance as compared to "deviant" firms.

Also, in many organizational fields pressures for competitive efficiency may be mitigated because the number of firms is limited and there are strong barriers to entry and exit. The presence of high barriers to entry of new firms into an industry (Porter, 1979b; Eaton & Lipsey, 1980; Harrigan, 1981a, 1980a) may allow firms within the industry to mimic each other's strategies, since the threat of entry of deviant firms is small. In the absence of pressures from deviant organizations, the institutional rewards for strategic homogeneity may encourage firms to imitate one another. There are also exit barriers (Harrigan, 1980b, 1981b) which can prevent firms from leaving an organizational field. If organizations are committed to an industry or a field for an extended period of time, the structuration process will lead to increased institutional forces and mechanisms for conformity and homogeneity of strategy.

While each of the three forces for isomorphic change derive from separate sources - coercive from dependence; mimetic from uncertainty and dominance; and normative from professionalization - in practice these are often intertwined and difficult to separate. Each is a

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conceptually distinct process, yet in organizational fields these forces frequently may interact. For example, governments may act as purchasers of goods and exert coercive forces on supplier firms; at the same time, governmental agencies can serve as a source of employees for suppliers which leads to normative forces for isomorphism. The effects of any single mechanism on isomorphic change and homogeneity of strategy may not be readily apparent from observation.

The presence of institutionalized forces and mechanisms is an indicator of the isomorphic pressure within an organizational field. While there may be other mechanisms which can lead to isomorphism, the focus of this research is on those which are institutionalized in the structure of the organizational field. Isomorphic pressure is a multidimensional construct; there are many forces and mechanisms which may be at work within an organizational field and which may exert differential effects on the homogeneity of the field. The effects of any single mechanism may be influenced or mitigated by others within the field, with the result that different organizational fields may exhibit different institutionalized patterns of isomorphism. For example, the educational experiences of executives may be offset by tenure within an industry. At some point, learning which has occurred while in a career may exceed the early training afforded by a college education and the effects of education may not be apparent.

The multidimensionality of the institutional isomorphic forces variable in the model necessitates the use of multiple hypotheses in conducting empirical research on institutional mechanisms and strategic homogeneity. The following section develops a set of research

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hypotheses which are based on the institutional perspective on strategic homogeneity developed in this chapter.

3.3 Institutional Isomorphism and Firm Strategy: Research Hypotheses

From the preceding discussions of the mechanisms by which isomorphic change occurs and the likely effects on firm strategies it should be possible to predict empirically the degree to which a group of firms within organizational fields will exhibit homogeneity in their business strategies. The value of an institutional perspective on strategy lies in its predictive utility, the ability to account for observed phenomena. The following hypotheses suggest three relationships which may be empirically examined using data on the characteristics of organizations in a field. These hypotheses are governed by *ceteris paribus* assumptions, and are predicated upon the central contention of this research: the greater the institutional forces for isomorphic change among a group of firms within an organizational field, the greater the homogeneity of strategy among those firms.

The prior discussion presented a broad theoretical treatment of the institutional perspective on homogeneity of strategy. The hypotheses which follow have been derived from the theory; however, not all of the mechanisms and variables suggested by the theory are represented in the selected research hypotheses. The field level of analysis chosen can affect the choice of experimental hypotheses. For example, studies which focus on firms within industries would not

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utilize certain of the theoretical variables in the research. The effects of government regulation on firms within an industry would tend to be very similar, since firms within an industry group frequently face the same set of government regulations. If "government regulation" were used as an independent variable - as a isomorphic force - there would be little variance across firms. It would be difficult to test empirically the effects of such regulation on homogeneity of business strategy. Or, if all the firms within a field operate within the same culture, the effects of variation in culture on the homogeneity of business strategy would not be discernable.

The intent of this initial investigation is to examine the effects of institutional isomorphic mechanisms on homogeneity of business strategy among firms within an industry. By limiting the study to a specific industry group, a measure of control - albeit perhaps a slight measure - is established over certain exogenous variables, such as governmental regulation, and cultural values. Therefore, some of the variables presented in the theoretical discussion of this paper will not be included in the hypotheses or in the methodology and analysis which follows. Within-industry studies would not use certain isomorphic mechanisms, since no variation is anticipated for these institutional forces.

Instead, attention will be focused on those variables which might be expected to have an effect on firms within an industry group. Since studies of strategy frequently examine firms within an industry (e.g., Hatten and Schendel, 1977; Hambrick, 1983b; Johnson and Thomas, 1987; Cool and Schendel, 1987, 1988), a within-industry study would be an

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important level of analysis. When examining firms within an industry, the issue of business strategy - the strategic decisions which affect competition within a specific product-market or industry group - is crucial to the performance of the firm. The use of the within-industry level of analysis focuses attention on the business level of strategy.

For this research, the organizational field level of analysis is the industry. These terms may be used interchangeably, and the reader should understand that the organizational field level of analysis and the industry are one and the same. By studying firms within an industry, it should be possible to develop a fairly good initial test of the utility of the institutional perspective as an explanatory mechanism for homogeneity of business strategy. The following hypotheses will be presented according to the three dominant forces for isomorphic change: coercive, mimetic, and normative.

3.3a Coercive Isomorphism: Research Hypothesis

The first hypothesis is derived from the discussion of coercive isomorphic forces and dependency.

Hypothesis 1: Within an organizational field, organizations which are relatively more dependent on the same customers will exhibit greater homogeneity of business-level strategy than organizations which are relatively less dependent on the same customers.

Pfeffer and Salancik (1978) suggest that organizations will adopt structures and practices as a response to dependence on other firms for valued resources. Customers are an important source of sales revenue

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for firms, and firms must make efforts to meet customer's demands and serve the customer's needs if they are to compete successfully in a market. Firms will adjust their strategies and strategic behaviors so as to meet the requirements of the customers. The presence of a limited set of customers upon whom firms are dependent means firms may have few options from which to choose in selecting their strategies. By limiting a firm's range of strategic options through the stipulation of required behaviors - via contracts, product design specifications, and other similar mechanisms - it is more likely that firms will choose similar strategies.

The fewer the customers for a firm's output, the greater the relative power of the customers (Porter, 1980). This situation is particularly acute in those industries in which there are relatively many firms trying to service few customers (Porter, 1980). For example, in the U.S. auto industry, the "Big Three" auto assembly/manufacturing firms of General Motors, Ford, and Chrysler purchase goods from hundreds of suppliers. The power of the assembler firms is substantial, since suppliers have few alternative outlets for their goods and many are dependent on the auto assemblers for a substantial portion of their revenues. Even though the parts which are being purchased may differ from supplier to supplier, many use similar technologies or manufacturing processes and as a result, part manufacture can be transferred with little cost to the assembler. Often, assemblers own the tooling - the primary component of manufacture - and use only the labor or machinery of suppliers. Suppliers are therefore highly dependent on the assemblers for sales

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revenue. Firms will adjust strategies and behaviors to meet the demands of the assemblers, since they are dependent on these customers for survival. Such dependence leads to isomorphic change, and in organizational fields which have few customers on whom the member organizations are dependent, the power of the customer is a significant force for isomorphism and homogeneity of strategy.

Note that this relationship among firms is indirect - it is based on the structural similarity of the firms within the field rather than on the presence of direct linkages among firms. Recall from the preceding discussion and Figure 3-2 that firms may be structurally equivalent due to the presence of similar linkages to other organizations, including firms which are outside the designated field of analysis. Thus, two firms A and B which are dependent upon the same customer for 80% of the sales revenue are structurally equivalent, while a firm C which is dependent on the customer for 10% of its sales revenue is not equivalent in the structural sense to the other two firms. The coercive force for isomorphism due to customer dependence on firms A and B are hypothesized to lead to homogeneity of strategy between these two firms, while the force on firm C would differ and, accordingly, it would be hypothesized that the strategy of firm C would differ from that of A and B.

3.3b Mimetic Isomorphism: Research Hypothesis

The hypothesis concerning mimetic isomorphism is based upon the discussion of uncertainty and the forces for mimicry.

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Hypothesis 2: Within an organizational field, organizations in which there is relatively greater perceived environmental uncertainty will exhibit greater homogeneity of business-level strategy than organizations in which uncertainty is relatively less.

In organizational fields characterized by high uncertainty, in which the environment is perceived as ambiguous, complex, and dynamic, executives may have difficulty in performing strategic analyses and in selecting strategies due to bounded rationality (Simon, 1947). This condition is problematic, since firms are often under pressure from shareholders and other constituent groups to delineate a clear strategy for the company in order to reassure investors and provide legitimacy (Mitroff, 1984; Meyer and Rowan, 1977). To overcome this condition, executives may use choice behaviors similar to those described by March and Cohen (1974) for organizations in which technology is poorly understood. Such decision-making processes often involve the importation of institutionalized rules and practices. In effect, executives who find themselves in organizational fields in which they perceive a high level of uncertainty may respond by copying the strategies of other firms in the field, particularly those of firms whom they perceive to be successful, as a means of satisfying stakeholders and providing a sense of direction for the firm.

Weick (1979) suggested that individuals in organizations must create meaning systems which interpret the environment and provide a basis for organizational action. If this interpretive process is problematic due to the nature of the environment, decision-makers may opt for one of several methods to provide a rationale for decisions. These may range from rational decision making, in which the process is

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based on a systematic evaluation of the problem, to incremental decision models in which the final choice results from a series of sequential decisions made within limits of rationality (Fredrickson, 1983). Previous research has indicated that rational models may not be feasible nor optimal in many organization environments (Mintzberg, 1973; Fredrickson and Mitchell, 1984; Fredrickson, 1984). Strategists may therefore utilize alternative decision-making techniques to provide legitimacy for their actions, among which is the use of available references (Pitz and Sachs, 1984). The presence of firms which can serve as reference models for strategic decision-makers can, in the face of an uncertain and ambiguous environment, provide the basis for strategic choice. Firms which mimic the behavior of other firms may do so as a means of avoiding the uncertainty inherent in the strategy formulation process. The institutionalized structure of an organizational can provide executives with available models. Hence, the greater the perceived environmental uncertainty among a group of firms in an organizational field, the more likely are those firms to mimic the business strategies of other firms and the more similar the resulting business strategies of those firms.

3.3c Normative Isomorphism: Research Hypothesis

The hypothesis concerning normative isomorphism and homogeneity of strategy is based on the discussion of the professionalization of organizational fields, the diffusion of norms among professionals, and the concept of connectedness in organizational fields.

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Hypothesis 3: Within an organizational field, organizations in which there are relatively many professional interrelationships among firms will exhibit greater homogeneity of business-level strategy than organizations in which there are relatively few interrelationships.

The effects of professionalization on firms within an organizational field occur primarily through the interrelationships among organizations, and specifically among organization executives. The greater the diffusion of knowledge and norms among firms due to the presence of such linkages, the greater the likelihood that the field will come to be dominated by professionals whose perceptions are similar and who will make similar choices concerning strategies. Also, greater professionalization can lead to a set of standards and behavioral norms which guide actions of individuals within the field. Such professional norms can be a powerful mechanism for isomorphism among firms.

Interrelationships which lead to normative isomorphism among firms can take several forms, as has been discussed previously. One mechanism occurs through similarity of educational experience. Executives with academic training and credentials have already undergone a socialization process in university programs (DiMaggio and Powell, 1983), and will have internalized a set of norms and values based upon their educational experience. To the extent that the educational process is similar among executives, the more likely it will be that similar attitudes and perceptions toward business firms and strategic activities will be developed. If firms within an organizational field select applicants from a few university programs, or if the applicants have similar formal educational experiences, there

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are forces for normative isomorphism already in existence. Managers bring these norms with them to their jobs. If organizations in a field are dominated by executives who have obtained MBA degrees from a limited set of academic institutions, it is likely that the norms among these executives will be shared to a greater degree than among firms whose top executives have differing educational backgrounds. Norms and perceptions of top executives are one element that influences the strategy process (Hambrick and Mason, 1984; Barnes, 1984; Anderson and Paine, 1975). If norms are shared among executives due to the professionalization of the managerial occupation through education, there will be forces for isomorphism within the organizational field, and strategies will tend to be homogenous.

Career paths and career development experiences are another means of increasing the connectedness and professionalization among firms within a field. There may be many routes available to managers which lead to senior positions within the firm, but there are few positions available at the top of most corporations. The traditional pyramid-shaped organizational structure leads to the condition where one executive (or very few executives) comes to dominate the formal authority relations and decision-making processes. Top managers are the focal group in the strategy formulation process, and the characteristics of senior managers may be critical in determining the strategies of the firm (Hambrick and Mason, 1984). If firms within an organizational field tend to select managers with similar career experiences and functional backgrounds, there will be a tendency for strategies to be homogenous across organizations within the field.

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Executives come to view strategic problems through the cognitive filters which may be partially formed as a result of previous experience (Barnes, 1984; Schwenk, 1984). To the extent that experiences are similar, the filters will be similar as well and the strategies which flow from decision processes will resemble one another (Norburn and Birley, 1988). For example, if firms within an organizational field tend to select managers from the engineering function for promotion to the senior management positions in the company, there will be a likelihood that such executives will view organizational problems from an engineering perspective. The strategies which such firms develop will be a response to these "engineering problems," and often the solutions will be "engineering solutions."

In addition to experiences in education and within organizations, socialization can occur across organizations as executives move from one firm to another over the course of their careers. The knowledge which is acquired as a result of a manager's career within a single company is transferred with the manager when there is a choice to change jobs and seek employment with another firm. In organizational fields with a high degree of such transfers, there may be a tendency for executives in different organizations to resemble one another as a result of career moves; what Kanter (1977) refers to as "the homosexual reproduction of management." As managers acquire knowledge from their work experience and transfer information to new firms within an organizational field, there is a tendency for the knowledge base of the field to become diffused. "The way we did it at the XYZ company" can

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be a model for an executive to use in a new position with the ABC corporation. As executives move between firms, the knowledge and strategies of firms becomes dispersed among organizations within the field and homogenization of strategies occurs.

Meyer and Rowan (1977) suggested that the more elaborate the relational networks among organizations and their members, the greater the collective organization of the environment. Industry trade associations and professional associations, such as the American Management Association, the National Association of Manufacturers, the Direct Marketing Association, etc., are one way in which executives from diverse organizations can meet together and share information and knowledge which is of mutual interest. The greater the relations among executives through such associations, the more likely it will be that information exchange will occur and knowledge become diffused within an organizational field. The diffusion of knowledge leads managers to view problems in similar ways, and the response to such problems will tend to mirror this similarity. Hence, strategies become homogenous across firms; managers formulate strategies in similar ways and according to similar perceptions.

Another mechanism of normative isomorphism comes from the information which executives acquire about trade and industry practices and professional activities. One source of dissemination of such information is through industry, trade, and professional publications. As executives read such journals, they acquire data about organizational concerns and practices. Also, industry groups often compile statistics and data on the firm's environment which may be

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utilized by executives in making strategic decisions. To the extent that the information base is common and shared among executives, the greater the normative forces for homogeneity of strategy.

The previous discussion of the effects of interlocking boards of directors on isomorphism highlights still another form of connectedness and professionalization among firms. Since boards generally have power to approve or disapprove major strategic decisions, the similarity in board structures which can be created through the sharing of directors via interlocks means that boards may come to view strategies in similar ways. For example, a banker may sit on the boards of three firms within an industry, due to the bank's importance as a source of funds for the various companies. The strategies pursued by the management at these three firms must meet with the banker's approval in order to be implemented, and it is likely that the banker will have similar views of the firm's strategies. The greater the homogenization of organizational boards, the greater the homogenization of strategies among firms within an organizational field as companies formulate strategies which will meet with board approval.

Independent consulting organizations or agents can be another powerful force for the diffusion of information about firm activities and strategic planning. Since consultants can be employed by many firms within an industry, and since consultants typically have access to a common data base within their firm or utilize a limited set of ideas for consulting purposes, they tend to spread very similar practices and behaviors among their client firms. If organizations within a field employ the same group of consultants, strategies and

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3.3d Research Hypotheses: Summary

The basic hypotheses relating the forces for isomorphic change and strategic homogeneity are depicted in Figure 3-4. These hypotheses do not exhaust the possible range of issues for empirical examination; however, they address many of the issues pertaining to a within-industry field level of analysis. These hypotheses are not intended to specify the nature of the relationships among the variables. Certain factors may be non-linear or subject to ceiling effects; there may be interactions among the various factors; and so on. The hypotheses which have been developed here are presented to provide a basis for an initial empirical exploration of the effects of isomorphic forces on firm strategy and to develop a rationale for the measurement of the mechanisms which may influence the homogenization of firm strategy. These hypotheses suggest that the issue of institutional isomorphism and company strategy is subject to empirical test, and sets forth the propositions that guide the following research and analysis.

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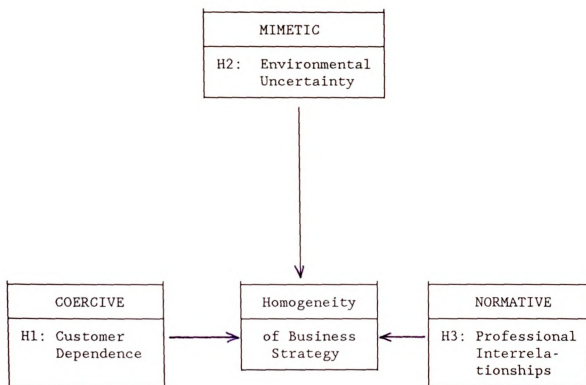


Figure 3-4

Model of the Research Hypotheses

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Chapter Four

Institutional Isomorphism and Business Strategy: An Empirical Study

4.1 Introduction

The hypotheses developed in the preceding chapter were tested to determine the utility of an institutional framework in explaining homogeneity of strategy among organizations. This chapter describes the empirical investigation of these hypotheses. The organizational field is defined, and a method of partitioning groups within the field or analytic purposes is explained. The measures of the dependent variable - business strategy - and the independent variables - institutional isomorphic mechanisms - are described in detail. The procedure for analyzing the data as described, and an assessment of statistical power is included. The method used to gather the necessary data is given. The chapter concludes with the resenatation of the results of the study and the analysis of the research hypotheses.

4.2 The Organization Field

The theoretical discussion of institutional isomorphism in the previous chapter presented the organization field as the critical unit bridging the organizational and institutional levels of analysis. The purpose of this section is to define empirically the organization field under investigation and to explain the methods of partitioning organizations used in this analysis.

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4.2a The Organization Field: Conceptual Definition

An organization field has been defined as a group of organizations that are related through some common set of attributes or linkages thought to be of theoretical significance and specified a priori by the researcher. An organization field is a partitioning of universe of organizations into subsets that are related through specified elements or processes (DiMaggio, 1986). Organization fields are often defined in terms of the interactions among firms, information flows between firms, and firms' identification as members of a recognized domain, such as American universities, public utilities, or fashion retailers (Zucker, 1987). The use of the field level of analysis permits researchers to examine the effects of interorganizational structure on field level variables (DiMaggio, 1986). Examples of field level variables includes duplication and range of services in metropolitan hospital systems (Fennell, 1980); the power and control of financial firms over industrial organizations (Mintz and Schwartz, 1985); homogeneity of organizational structure (Meyer et al., 1988); or, in this research, homogeneity of strategy.

DiMaggio (1986) suggested that one approach to partitioning organization fields for empirical research is to use an "institutionalized domain, [such as] health, higher education, [or] the aircraft industry" (1986:337). One common designation of an institutionalized domain is the industry classification. An industry is defined as a "group of competitors [firms], producing substitutes

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that are close enough that the behavior of any firm affects each of the others either directly or indirectly" Porter, 1979b: 214). Firms within an industry are "assumed to be alike in all economically important dimensions except for their size," and "a considerable body of market research posits that many industries are characterized by the existence of market power shared among their firms" (Porter, 1979b: 214). The designation of an industry has been operationally institutionalized through the use of the Standard Industrial Classification code (SIC) of the U.S. Census Bureau. The SIC codes classify industries on four levels of aggregation. There are four digits in a SIC code, which correspond to the four levels. The first two digits designate broad industry categories and the third and fourth digits identify subcategories within the broad industrial classification (Hayden, 1986). For example, the first two digits "37" are designated as "Transportation Equipment." Within this industry, code number 371 identifies firms that are motor vehicle manufacturers; code number 372 identifies firms that are aircraft manufacturers; and so on. At the four-digit level, SIC code number 3711 identifies firms that are primarily motor vehicle manufacturers, code number 3714 designates firms that are manufacturers of motor vehicle parts and accessories, etc. Office of Management and Budget, 1987). Individual firms are assigned to an industry category based upon the primary product or services they provide.

The use of an industry as an analytic device is often found in research on strategy (cf., Rumelt, 1974; Hatten and Schendel, 1977; Johnson and Thomas, 1987; Cool and Schendel, 1987). By focusing on a

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articular industry, it may be possible to have some control over the environmental forces that would affect firms' strategic activities. Since firms within an industry are presumed to be alike in terms of the basic economic dimensions, examining firms within a particular industry would allow for partial control of certain exogenous factors that might confound the results of the study. The use of the industry level as the organization field under investigation could control for the effects of variables such as cultural differences, effects of government regulation, and economic conditions, which might influence firm behavior in different ways.

Competitive forces within industries are thought to lead firms to pursue differing strategies in order to develop or maintain a competitive advantage (Porter, 1985). The research hypotheses of this study suggest that institutional as well as competitive forces are present in organization fields and may lead firms to pursue similar rather than different strategies. Use of the industry as the field level of analysis allows the research to focus attention on the effects of field level variables - such as interfirm dependence, professionalism, and uncertainty - which are characteristic of institutional arrangements.

4.2b The Organization Field: Empirical Definition

For this study, the U.S. automobile supplier industry (SIC code number 3714) was selected for investigation. Automobile suppliers were elected for several reasons. The auto industry represents a

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significant economic force in the United States. Data provided by the Motor Vehicle manufacturers Association (1988) indicated that transportation expenditures comprised 21 percent of the annual outlays of the average American household. There were, as of 1987, 348 motor vehicle manufacturing facilities in the U.S. that employed 705,692 workers. Auto manufacturers and parts suppliers spent over 11 billion dollars in 1988 on new plants and equipment, representing 7.2 percent of total U.S. manufacturing outlays for the same. In addition, the motor vehicle industry and allied industries - such as road construction, petroleum refining, etc. - accounted for 14.4 percent of total U.S. employment, or slightly more than one in seven jobs, with total payrolls of nearly 129 billion dollars.

The role of suppliers in the industry is important, with any firms producing a wide array of components and parts, which constitute large portion of the finished product. There are a large number of firms within the industry - well over 2800, according to the Motor Vehicle manufacturers Association (1988) - allowing for a relatively large sample of organizations in the study. While all firms provide components for the manufacture of automobiles, these organizations produce different parts and use different production methods. This diversity in the components produced and in the productive process assists in generalizing the results from the sample of firms in the study to the population of automobile suppliers, since the findings are not limited to a particular product group or production method.

In contrast to the large number of supplier firms, the customers for the production outputs of U.S. auto suppliers are generally

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limited to the three major domestic manufacturers - General Motors Corporation, Ford Motor Corporation, and Chrysler Corporation - along with a few foreign firms, such as Nissan Motors, Honda Motor Cars, and Bavarian Motor Works. This limits the customer base for suppliers' outputs and can lead to high levels of dependence. The auto industry has been in existence since the late 1800s, which allows ample time for firms to establish interorganizational relationships and institutionalized arrangements. While many firms may be subject to highly structured and institutionalized forces, other firms have fewer ties with the industry, leading to differences in the isomorphic forces within the field.

4.2c Structural Analysis of the Organization Field: Subgroup Partitioning

While auto supplier firms are the organization field for this study, it is possible to identify groups of firms within the field. The interest of this research is the effects of certain institutional variables on homogeneity of strategy. The effects of these variables on individual firms within the field are hypothesized to differ as a function of the position of the firm within the field. This research will therefore compare groups of firms in the auto supplier organization field based upon the presence or absence of institutional mechanisms of isomorphism among organizations. for example, the dependence on common customers is one such mechanism; hence, the use of auto supplier firms, which sell their output to a small number of

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customer firms, will enable this study to explore the effects of the coercive mechanism of customer dependence on homogeneity of strategy. Within the auto supplier industry, other groups of firms can be similarly identified by the type and level of mechanisms for isomorphism present in the institutional structure of firms within the field.

DiMaggio (1986) reviewed field-level studies of organizations and suggested that there are four methods for partitioning organizations into subsets for analytic purposes: 1. Naturalistic approaches, in which partitioning occurs on the basis of "a priori, common sense descriptors, categorical definitions of organizational form" (1986:341). An example of such partitioning among the auto supplier field might include categorizing firms according to the components they manufacture such as engine components, electrical components, chassis components, or body and trim components. 2. Classification on the basis of attributes, in which organizations are classified in groups based upon measures of some attributes of the firms. For example, classifying organizations as "large" or "small" in size based on the number of employees in each firm. 3. Partitioning may be based on structural cohesion. Such methods use sociomatrices like the one shown in Figure 3-1 to divide the population of organizations into sets based upon the interactions among the member organizations. 4. Partitions based on structural equivalence. As with the structural cohesion approach, this method also examines the relations among members of a population of organizations. Unlike the cohesion method, though, structural equivalence divides organizations into groups based upon

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similarity to organizations in other blocks or fields without the requirement that these firms be connected to one another.

The three hypotheses of this study are based on differing mechanisms for institutional isomorphism. Coercive isomorphism (Hypothesis 1) could occur among a group of organizations based upon their structural equivalence, that is, the similarity of position of these organizations in the field without regard for the connectedness of firms to one another. For hypothesis 1, similarity is based upon firms' dependence upon the same customers, with greater dependence on similar customers hypothesized to lead to greater homogeneity of business strategy through coercive forces for isomorphism.

Hypothesis 2 discussed the effects of uncertainty and mimetic isomorphism on the homogeneity of business strategy among a group of organizations. The perceived environmental uncertainty of any firm is a self-perceived attribute of the organization. The hypothesis asserts that firms with similarly high levels of perceived uncertainty will exhibit greater homogeneity of business strategy due to mimicry of institutionalized patterns of business behavior.

Hypothesis 3 was based on structural cohesion among organizations. Cohesion results from the presence of formal or informal institutionalized relationships among firms. Such ties may be direct, such as could occur when there is an exchange of personnel among firms. Or, firms also may have indirect ties to one another through common membership in trade associations or shared use of external consultants. Characteristics of an organization's strategic managers such as educational experience also may serve to create professional ties, even

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in the absence of direct linkages. Similarity in career experience, a multi-firm career path, and executive tenure is thought to lead to increased professionalism among executives. Since key executives such as the firm CEO often have a major effect on the firm's strategy (Dittrich, 1988; Hambrick, 1981; Chandler, 1962), similarity in the professional backgrounds of strategic managers also would create direct ties and increase the professionalism of firms within the field. According to an institutional framework, firms that interact maximally with their firms and minimally with other members of the population have greater institutional pressure for isomorphism and homogeneity of business strategy. Hypothesis 3 suggested that firms with high interaction - that is, which have any professional ties to other firms, both direct and indirect - would exhibit greater homogeneity in business strategy than firms with few professional interactions.

4.2d Structural Analysis of the Organization Field: Partitioning Methods

Auto industry supplier firms are partitioned using the independent variables of this study: measures of institutional isomorphic force. The partitioning is limited to those variables which are expected to influence the level of institutionalization of firms within the field. Not all institutional variables are included in the partitioning of firms. Certain variables - such as government legislation, cultural factors, and economic conditions - would not be expected to vary at

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the level of analysis used in this study and are thus not useful for partitioning supplier firms.

Several techniques are available to accomplish such partitioning; examples of some of these algorithms can be found in DiMaggio 1986); also Brieger, Boorman, and Arabie, (1975), among others. One such method for partitioning is to group firms based on their standard deviation of some attribute scores. Subgroups of firms might also be created using the standard deviation from the mean score on an attribute and comparisons would be made of individual sub-groupings. The partitioning of firms based on their perceived environmental uncertainty, which is measured by a single scale core, was done using this method.

This method is sufficient for those situations in which differences can be measured by a single attribute score such as the measure of perceived environmental uncertainty. However, it is less than satisfactory for those in which two or more measures are used, since the means and standard deviations might not be measured with similar scales. Differences in the measurement scales would prevent direct partitioning, since the scales can be based on different metrics. Or, the characteristics being measured may not be directly comparable. To accomplish this partitioning a second technique as utilized in this research: cluster analysis.

Cluster analysis is a statistical technique that attempts to identify similar groups of objects or subjects based on some attribute or set of attributes (Aldenderfer and Blashfield, 1984). The researcher can specify the variables to be used in creating the

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clusters and the clustering algorithm computes distances between subjects based upon the variables of interest. The purpose is to identify groups of subjects with similar features met which are distinct from other groups within the population. Cluster analysis has been used in strategy research to identify strategic groups (McGee and Thomas, 1986; Hatten and Schendel, 1977), and has also been used in research on institutional forces in organization environments (Oliver, 1988).

The CLUSTER algorithm used in the SPSS/PC statistical package (SPSS Inc., 1984) was used to generate clusters of firms for two of the institutional forces: dependence and professionalism. The method of clustering is based on Ward's minimum variance method of cluster analysis (Blashfield and Aldenderfer, 1978), which has been reported to have superior accuracy as compared to other methods, such as weighted average or centroid methods (Blashfield, 1976). In Ward's minimum variance method, the distance between two firms is based on squared Euclidean distance, which is the sum of the squared differences in values for each variable:

$$\text{Distance}(x,y)=\sum (x_i - y_i)^2 \quad (4-1)$$

The distance between two firms is a measure of how far apart the firms are on the variables of interest. The actual formation of clusters is based on an agglomerative hierarchical procedure, in which clusters are formed by grouping cases together until all cases are members of a single cluster. In hierarchical clustering, firms are joined with firms that are closest" in terms of the distance measures. Cases are added to existing groups, or groups are combined with other

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groups, until all cases are combined into one cluster. At each stage, a coefficient is displayed, corresponding to the distance measure used. The coefficient can be used to determine how many clusters should be created from the data. The larger the differences in coefficient scores between cluster levels, the greater the distance of the clusters being combined, and the less similar the firms in the clusters.

In performing the cluster analysis, firms were assigned to clusters or groups based on the institutional forces and mechanisms present or acting on the individual firms. The program CLUSTER in SPSS (SPSS, 1984) as used for the analysis. CLUSTER allows the researcher to specify the number of clusters to be formed and presents information on the hierarchical agglomeration method of clustering, which indicates the distance coefficient. For each of the clusters, firm scores on the independent variables - the measures of institutional isomorphic force - can be averaged to determine the magnitude of the institutional force acting on the group.

The research hypotheses presented in the previous chapter suggest firms that have strong isomorphic forces present in their environment will exhibit greater homogeneity in their business strategy. Cluster analysis will identify supplier firms within the organization field that are similar to one another in the level of institutional isomorphic force when force" is measured with two or more different variables. These clusters of firms can be combined to partition the firms in the organization field into the subgroups necessary for the analysis. In order to obtain the best possible contrasts, the clusters were combined to form three subgroups of supplier firms: suppliers

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The decision to partition firms into three groups was based upon the hypotheses of the research, that is, to compare firms relatively "high" with those relatively "low" on institutional forces for isomorphism. For this research, the comparative analysis focused on the "high" and low" groups only. Since this study sought to determine the extent to which institutional mechanisms may affect the homogeneity of strategy, firms were partitioned and compared according to the extent to which such institutional isomorphic mechanisms were present among firms within the organization field.

Firms with "high" institutional forces should exhibit greater homogeneity, that is less variance, in business strategy than the firms with low" institutional forces. The analysis of differences in the variance in business strategy between the two extreme groups would be most likely to yield theoretically significant results. If the hypotheses fail to receive support at this level of analysis, it is doubtful that comparisons among groups with less differentiation would yield significant findings.

4.3 The Dependent Variable: Measures of Business Strategy and Strategic Homogeneity

The dependent variable in this study is the business-level strategy of firms within the auto supplier industry, and in particular the homogeneity of strategy among firms within this industry. Issues

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in the measurement and operationalization of strategy have been discussed by several authors (Snow and Hambrick, 1980; Ginsberg, 1984; Venkatraman and Grant, 1986). Strategy is a multidimensional construct (Snow and Hambrick, 1980), and measures of strategy should reflect the multidimensionality of the construct.

4.3a Measuring Business Strategy

Business strategies are concerned with the operational and functional strategies that enable a firm to compete within a specific business or industry. Hofer and Schendel (1978) noted that patterns of resource deployments are a crucial component of an organization's strategy. The resource deployments of a firm are a strategic choice, which helps the firm achieve its goals and objectives and can give the company a competitive advantage over rivals.

Another component of a firm's business strategy is the positioning of the firm's products or services with respect to its customers. The major issues concern the price and quality of the products and services offered by the company as compared with those offered by competitors. Firms will seek to position their products as unique within the minds of customers to obtain a competitive advantage over rivals (Hofer and Schendel, 1978; Porter, 1980).

Hambrick (1980) argued that measuring business-level strategies requires multivariate measurement. These two features of business-level strategies - resource deployment and product positioning - represent two of several elements of the business strategy of a firm.

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Investment in plant and equipment, expenditures on marketing, research and development, product pricing, promotion, and quality decisions - are all related elements that comprise the strategic business decisions of the firm. Business-level strategy, as a multidimensional construct, must be measured using multiple business strategy variables.

One such multivariate method of measuring business-level strategy variables is used in the PIMS data base (Buzzell and Gale, 1987). A series of questions are asked of participating firms pertaining to resource allocations, product positioning, and other strategic issues. Information gathered from the PIMS questionnaire is believed to generate valid data Anderson and Paine, (1975). Use of the PIMS data base and the questionnaire data occurs often in the literature on strategy (Ramanujam and Venkatraman, 1984; Anderson and Zeithaml, 1984; Zeithaml and Fry, 1984; Prescott, Kohli, and Venkatraman, 1986).

For this research, information was obtained for seventeen business strategy variables. These variables were divided into six categories: Industry variables, Product Competition variables, R & D variables, Production/Investment variables, Efficiency variables, and marketing variables. These categories and their associated measures (and the abbreviations used in the tables in this study) are shown in Table 4-1. These measures were based upon questions and data from the PIMS data base. The basic scheme for grouping the data was developed by Hofer (1975). The categories have been used often in strategy research and seem to represent generally accepted framework for analyzing strategic business behavior Anderson and Zeithaml, 1984; Zeithaml and Fry, 1984; Hambrick, 1983a; Hambrick and Schechter, 1983; Hambrick, MacMillan, and

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Table 4-1

Business-Level Strategic Variables

(Note: Abbreviations for these variables which are used in the research are in parentheses following each variable description.)

Industry Variables

1. Technological change: There have been major technological changes in the product offered by the business or its major competitors, or in the method of production, in the last 8 years. (TECCHG)
2. Relative compensation average: Wage and salary levels relative to competitors. (RELWAG)

Product Competition Variables

3. Product quality average: Percent of products superior to customers products from the customers' perspective minus percent of products inferior to customers products from the perspective of the customer. (PQLAVG)
4. Relative price: The average level of selling prices of the business' products and services relative to the average price of the three largest competitors. (RELPRC)
5. Market share: Sales of the business as a percentage of sales in the served market. (MKTSHR)

R&D Variables

6. New products, % of sales average: New products as a percent of total sales. (NEWSLS)
7. Product R&D/revenue average: Product and service R&D expenses divided by net sales. (PRDREV)
8. Process R&D/revenue average: Process R&D expenses divided by net sales. (PRCREV)

Production/Investment Variables

9. Total inventory/revenue average: Total inventory divided by net sales. (INVREV)
10. P & E newness average: Net book value of plant and equipment divided by gross book value of plant and equipment. (PENEW)
11. Investment/revenue average: Average investment (book value) divided by net sales. (VSTREV)

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Table 4-1 (cont.)

Efficiency Variables

12. Capacity utilization average: Percent capacity utilization. (CAPUTL)
13. Sales/employee average: Total sales divided by number of employees. (SLSEMP)
14. Revenue/employee average: Net revenue divided by number of employees. (PRFEMP)

Marketing Variables

15. Sales force/revenue average: Sales force expense divided by net sales. (SFEREV)
16. Media advertising and sales promotion/revenue average: Expenditures for media advertising, catalogs, exhibits and displays, premiums, coupons, samples, and temporary price reductions for promotional purposes divided by net sales. (ADVREV)
17. Relative sales/promotion expenses: media advertising and sales force expenses relative to three largest competitors. (RELSLS)

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Day, 1982; Buzzell and Wiersma, 1981; MacMillan, Hambrick, and Day, 1982).

4.3b Measuring Homogeneity of Business Strategy

The central issue for this research is the homogeneity of business strategy among firms and its relationship to various institutional forces for isomorphism in corporate behavior. Any cluster or group of firms within an organization field will generate a mean value and a distribution of values for each of the measures of the elements of business strategy, based upon the values of the measures for the individual firms within the group. The measure of the variation in strategy is the variance of the distribution of values for the measures of strategy, or its square root, the standard deviation. The institutional perspective on isomorphic forces for strategic homogeneity would suggest that the variance in business strategies among those firms that face significant institutional forces for isomorphism would be less than the variance for those firms in which the institutional isomorphic forces are relatively lower.

Organization fields subject to high institutional forces or isomorphism and homogeneity of strategy will have less variance in the strategy measures than those in fields with few institutional forces. The smaller the variance, the greater the homogeneity of strategy; the greater the variance, the greater the heterogeneity of strategy. Note that homogeneity of strategy is measured by variance and not by the mean. Homogeneity is the similarity of strategy among a group of firms

- firms exhibit less variation in their strategic activities. However, it is possible for two groups of firms to have the same mean score on some variable. Homogeneity refers to the dispersion of scores around a mean score. Firms which are homogeneous will tend to cluster around one another very closely; there will be little variation in the cores. Firms which are heterogeneous will have high variance and be relatively widely dispersed. This is illustrated in Figure 4-1.

4.4 The Independent Variables: Measures of Isomorphic Forces

4.4a Coercive Isomorphic Force: Customer Dependence

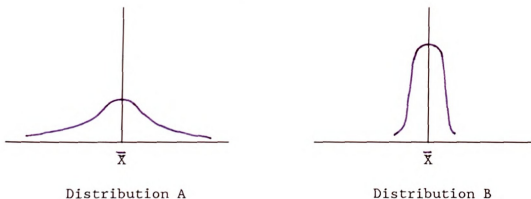
Coercive isomorphic forces are concerned with the issue of dependency. The degree of dependence of firms within an organization field on a limited set of customers is hypothesized to influence strategic homogeneity. The greater the dependence of firms on the same limited group of customers, the greater the homogeneity of strategy. Measures are needed to determine the amount of firm dependence on customers. To derive such a measure of dependence, this study borrowed on concepts from micro-economic theory and from the analysis of channels of distribution in the marketing literature.

The measure of customer dependence uses the concept of market power. If the firms' sales are highly concentrated - that is, if the same, limited number of customers account for most of the firms' revenues - then supplier companies are relatively more dependent on customers than those industries in which sales are widely dispersed

Homogeneity means similarity of a group of items
or less variance in a group of items.

For any 2 distributions of scores on some factor,
homogeneity occurs when one distribution has less
variance than the other distribution.

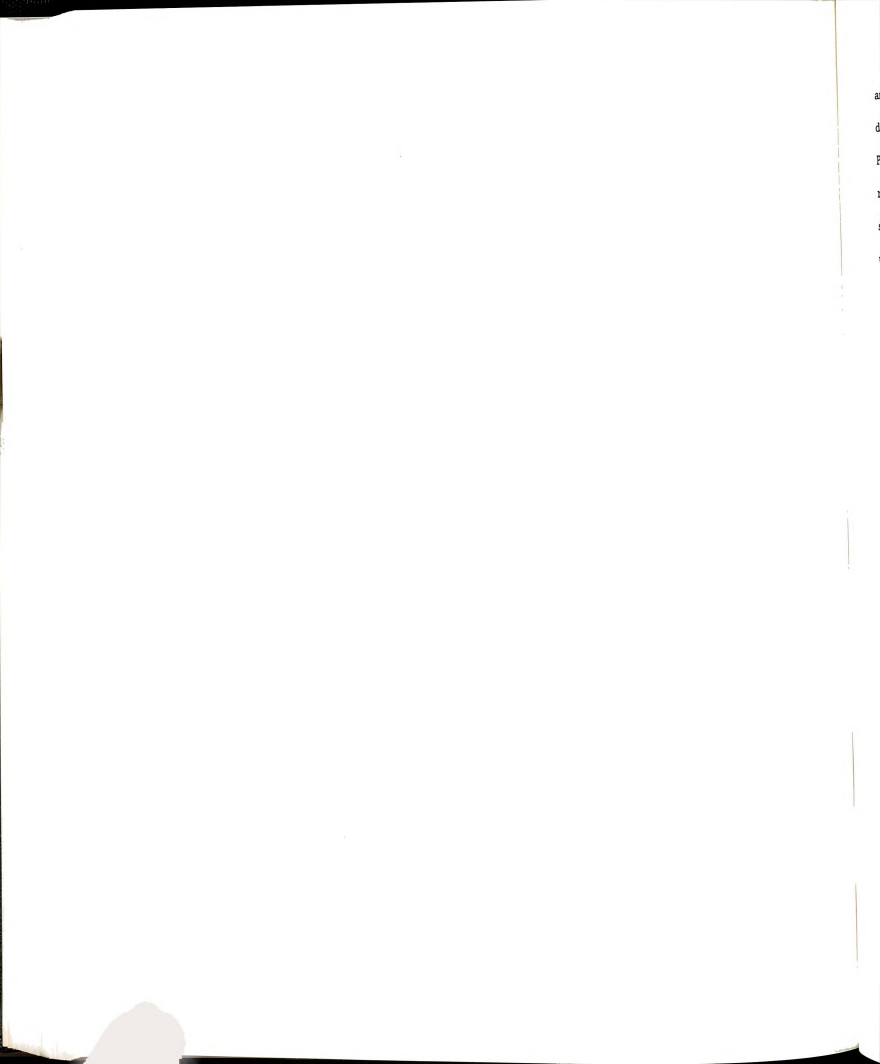
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The scores for Distribution B show less variance than those
for Distribution A. The Scores of Distribution B are more
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Figure 4-1

Measuring Homogeneity: The Variance
of the Distribution



among many heterogeneous customers. This follows from the preceding discussions of dependence, power, and coercive isomorphic forces. Porter (1980) noted that customer firms are powerful if buyers are relatively concentrated or if they purchase large volumes relative to seller sales, if the products that buyers purchased are standard or undifferentiated, if there are low switching costs, or if the buyer can pose a credible threat for backward integration. All these conditions are present in the relationship between the auto manufacturers and the suppliers; hence, the buyers exert a powerful and coercive force over suppliers. The suppliers are relatively more dependent on the buyers/manufacturers for resources in the form of sales revenues.

Research on distribution channels among organizations has frequently defined dependence as a function of firm sales (El-Ansary and Stern, 1972; Frazier, 1983). For any single firm, dependence is the degree to which a firm must maintain a relationship with another firm in order to achieve desired goals (Frazier, Gill, and Kale, 1989). Using the sales dimension, dependence is measured as the percentage of a firm's total sales generated from sales to a customer firm or group of customer firms. Within the domestic auto supplier industry, the dominant group of customers are the three largest U.S. auto manufacturers: General Motors, Ford Motor Company, and Chrysler corporation. For the U. S. auto supplier firms in the study, the degree of current customer dependence was measured as the percentage of total firm sales that results from sales to the domestic U.S. auto manufacturers. This measure is represented as a ratio:

Firm Sales to a Domestic Auto Manufacturer

Customer Dependence = $\frac{\text{Firm Sales to a Domestic Auto Manufacturer}}{\text{Total Firm Sales}}$ (4-2)

Total Firm Sales

If sales of a firm are highly concentrated in a few customers, the firm is relatively dependent on the customers for needed resources in the form of revenues. If many firms have similarly high levels of sales concentrations and are highly dependent on a common customer base, this will lead to coercive isomorphism and homogeneity in strategy among these firms. The greater the dependence of any single auto supplier firm, the greater the coercive force exerted on the firm by the buyers/manufacturers. To the extent that such buyer coercion leads to greater pressure for isomorphism, the greater the homogeneity of strategy with other firms with similar dependencies. For those firms that do not face such revenue concentration and dependence, there is less coercive pressure for isomorphism and there will be less homogeneity of strategy among these firms.

Researchers have argued that dependence is not only a function of the current level of sales but also of projected future sales levels as well (Frazier, 1983; Frazier, Gill, and Kale, 1989). That is, if a firm anticipates increasing sales to a customer in the future, the firm is relatively more dependent on that customer than if sales were anticipated to decline. From the perspective of business strategy, future sales levels would have a significant impact on the formulation and implementation of strategies, since strategies focus on the future activities of the organization. Such projections of future sales would

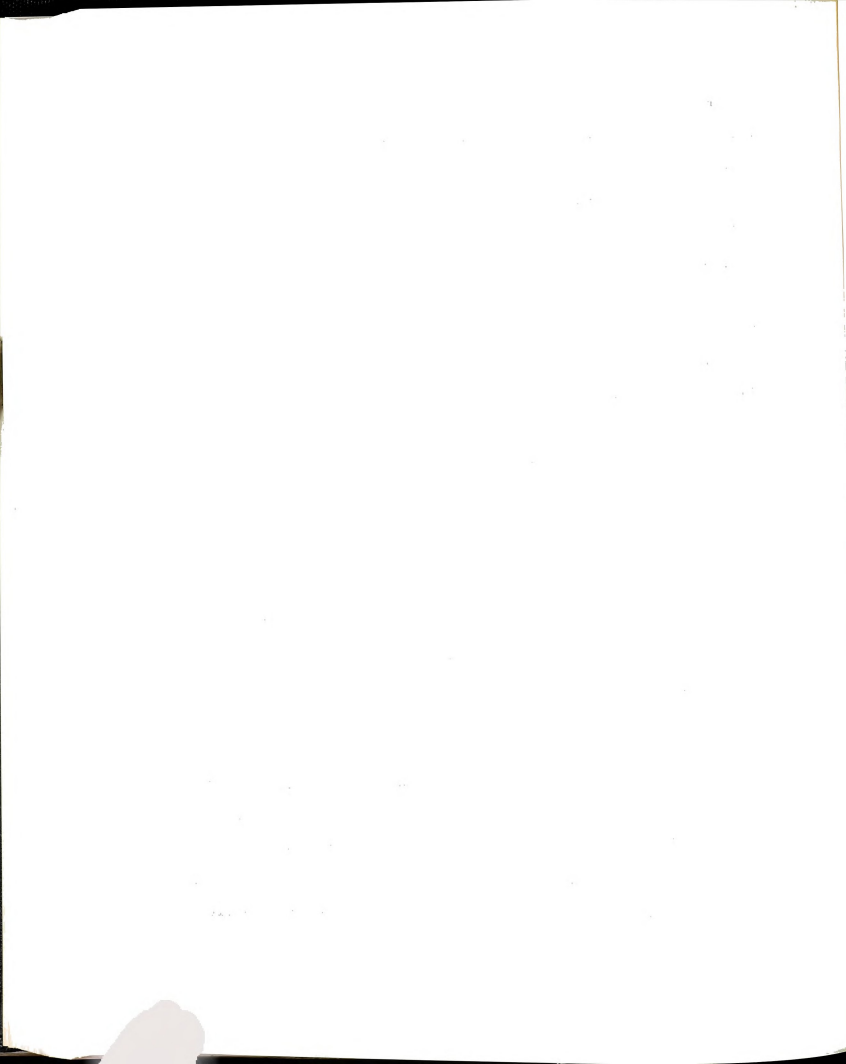
impact the strategy process and would determine the degree of potential dependence. Therefore, following Frazier, Gill, and Kale (1989), the second measure of dependence in this study is the firm's projected sales to the U.S. auto manufacturers in the next five years. This is measured on a scale from -4 (sales will DECREASE significantly) to +4 (sales will INCREASE significantly).

4.4b Mimetic Isomorphic Force: Perceived Environmental Uncertainty

The discussion of mimetic isomorphism and strategic homogeneity and the research hypothesis derived from that discussion suggest that firms will be more likely to imitate the strategies of other firms within an industry when firms perceive the environment to be uncertain. Environmental uncertainty and strategy formulation was discussed by Duncan (1972). Duncan described uncertainty on two dimensions: complexity and dynamism. Dynamic environments are those in which the factors relevant for strategic decision making are constantly changing. Complexity refers to the number of relationships among factors and their interaction; in highly complex environments, the relations among factors are such that they require a high level of abstraction by the strategist. Duncan described three aspects of complex and uncertain environments that appear useful for indicating uncertainty: (1) the adequacy of information about the environmental factor, (2) the importance of the factor - that is, the influence of the factor on the firm's success or failure, and (3) the predictability of the factor's reaction to the firm's decision.

From this basic conceptualization of uncertainty, several authors have attempted to define and develop measurements of an organization's environmental uncertainty (e.g., Anderson and Paine, 1975; Boulton, Lindsay, Franklin, and Rue, 1982; Dess and Beard, 1984; Koberg, 1987; Daft, Sormunen, and Parks 1988). Boulton et al. (1982) suggested that dynamism and complexity interact with the information available to managers to affect uncertainty, and that uncertainty is reflected in managers' abilities to predict the future status of the various environmental factors. Using this concept of predictability, Miles and Snow (1978) developed a measure of perceived environmental uncertainty (PEU). Their measurement instrument will be used for this research.

The instrument contains six scales composed of 25 items, which measure perceived environmental uncertainty for six major dimensions of firm's external environment: (1) suppliers of raw materials and parts; (2) competitors' behavior; (3) clients or customers; (4) financial/capital markets; (5) government regulatory agency actions; and (6) behavior of labor unions. Managers were asked to evaluate the predictability of each item on a seven-point Likert scale. Means from each of the six scales were summed for the total PEU score. The scale was used to measure perceived environmental uncertainty recently by Ireland, Hitt, Bettis, and DePorras 1987). They reported coefficient alphas for this scale ranging from .60 for the clients scale to .89 for the government regulatory agency scale. The overall alpha for the instrument was .73. As with the measures of coercive force, it was hypothesized that the greater the perceived environmental uncertainty, the more likely firms will be to mimic the strategies of other firms



within an organization field and the greater the homogeneity in strategic activity.

4.4c Normative Isomorphic Forces: Professional Interrelationships

The measures of normative isomorphic forces are based upon the institutionalized interorganizational relationships that give rise to professionalization within an organization field. The presence of normative forces is often due to the connectedness of firms within an organization field. The greater the relationships among firms within the auto supplier industry, the greater the diffusion of information and the more likely it will be that firms will pursue similar strategies. Normative force is based upon the number of linkages among firms within the industry or field. In order to measure these linkages, a sociomatrix approach for measuring connectedness was used to evaluate the field structure of the auto supplier industry and the normative forces for isomorphism and homogeneity of strategy.

The institutional framework also suggests that professional ties can occur indirectly through similarity of organization members. Managers may move from one organization to another within an organization field. This movement is one way in which models and strategies may become diffused among the firms within the field. Another is the amount of experience an executive has with firms in the industry. Over time, individuals will come to learn established patterns of behavior and build up professional relationships with others in the field. The presence of such institutional arrangements

and the opportunity to acquire institutionalized forms of behavior may be a significant means of increasing professionalism within an organizational field. Thus, in addition to the presence of formalized professional linkages, characteristics of strategic managers would be expected to influence the level of professionalism within the field and lead to greater homogeneity of strategy.

Measuring connectedness. The procedure for measuring the connectedness of firms through the educational and career experiences of key executives, membership in trade associations, shared sources of information, and use of common consultants is based upon fundamental concepts of sociomatrix analysis as presented by DiMaggio (1986). Structural analysis uses sociomatrices that represent relations among organizations in a field. A representative sociomatrix was displayed in Figure 3-1. To conduct the analysis, data was obtained on the ties or linkages that exist between organizations within the industry. For the purposes of this research, it is the basic structure - the number of linkages, the interrelationships among firms - that is crucial in the assessment of normative isomorphic forces for homogeneity of strategy.

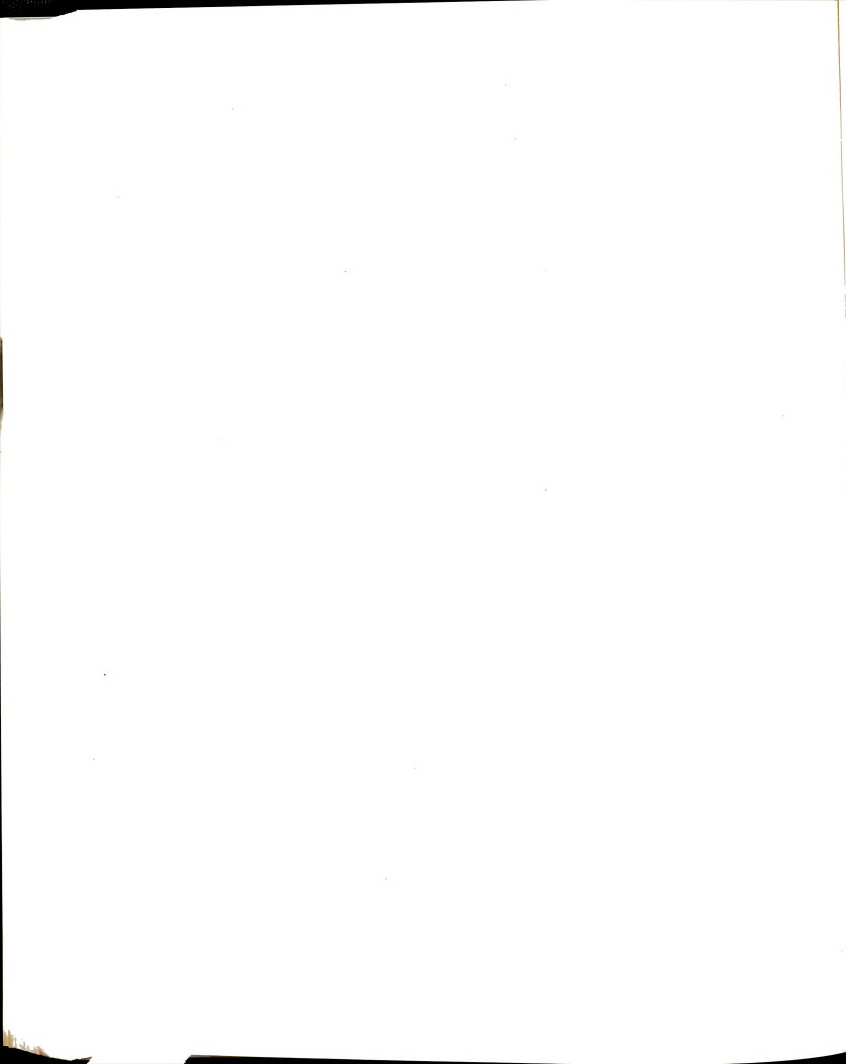
The number of professional relationships or linkages among organizations is one measure of the normative force of professionalization. There are several elements in the environment of the auto supplier industry that can lead to the formation of professional ties among firms. These elements and their associated measures are described in the following paragraphs. For any single firm, the normative isomorphic force via connectedness was measured as

the total number of linkages or professional ties the organization was found to have to other organizations in the field. In effect, a series of sociomatrices were created for each of the professional linkage mechanisms and these matrices were "collapsed," or added together, to form one matrix representing total linkages among firms within the auto supplier industry.

Measures of Professionalism: Interfirm Linkages

Executives' Educational Experiences. Similarity in educational experience is one normative force for isomorphism. In this study, data was obtained on the educational background of the Chief Executive Officers (CEOs) of firms within the industry. The role of the CEO is often crucial in the strategy process (Dittrich, 1988), and data from CEOs has been used often in research on strategy (Daft, Sormunen, and Parks, 1988; Lamb, 1987; Miller, Kets de Vries, and Toulouse, 1982). The normative force for isomorphism that results from professional ties due to educational experience was measured as the number of linkages with other firms due to similar educational background of the firms' CEOs. A similar education background among two or more CEO's was defined as occurring (1) when the CEOs hold the same terminal degree(s), (2) in the same major field of study, and (3) obtained the degree within 2 years of one another. For any single firm, the number of linkages was the number of CEOs within the industry whose educational background as similar to that of the firm's CEO.

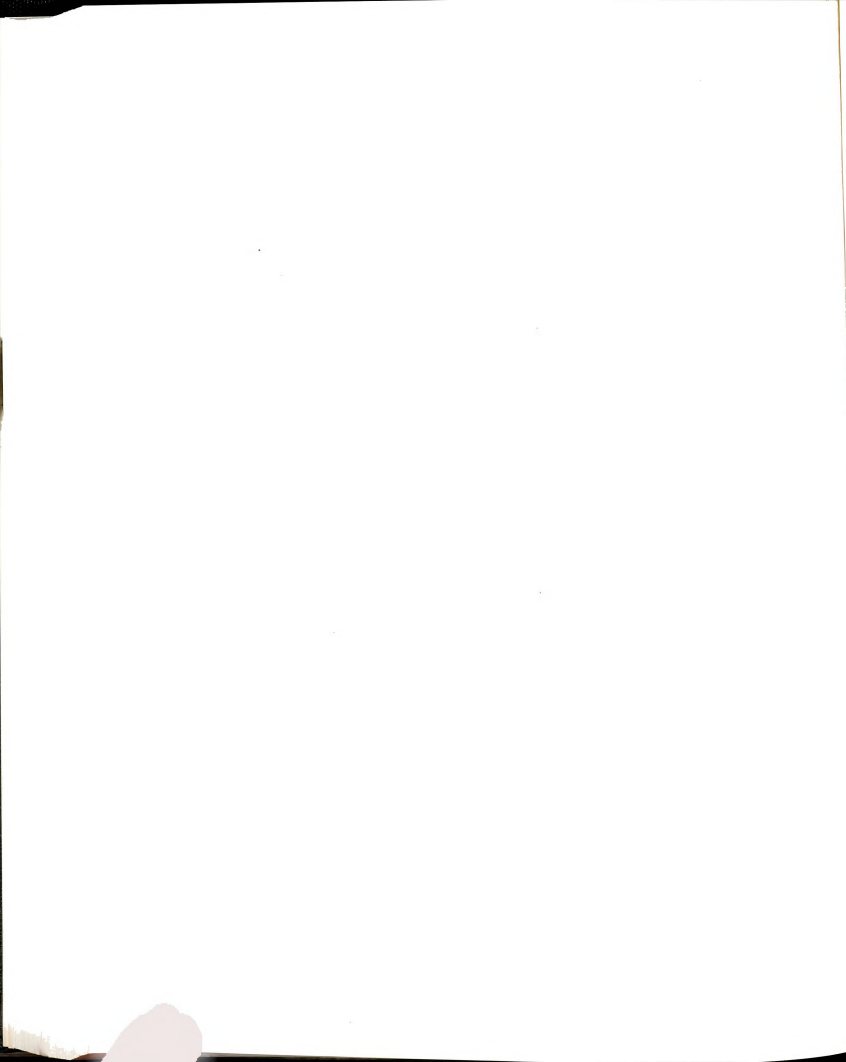
Executives' Career Experience. The institutional perspective suggests that firms can be connected through the career experiences of key executives. That is, if two executives have similar career paths



in their respective organizations, they will share similar perceptions of the industry environment and will behave in a similar fashion in their decision-making activities. Similarity of career experience would lead to greater firm connectedness and increased professionalism.

Data on executives' careers was obtained from executives' self-report of career paths. Similarity of executives' career experiences was measured as the number of executives within a field holding similar positions in their organizations before promotion to the CEO position. Similarity of position is defined as similar functional area of specialization or career experience, for example marketing or engineering. For any single firm, the measure of career experience linkages was the number of executives within the industry who report having career experience similar to that of the firm's CEO.

Firm participation in trade associations. This was measured as the number of linkages among firms due to membership in similar industry, trade, or national associations. If two firms were members of the same trade association, there was one link between the firms. For any individual firm, it was the number of firms reporting membership in the same trade association. That is, if 43 firms are members of a particular trade association, the individual firm has links to 42 other organizations. The greater the number of linkages among firms within the industry through trade associations, the greater the firm score. Using sociomatrices, the number of linkages with other firms due to the presence of common membership in a trade association was computed for each association. There were several trade



associations for firms within the industry, and matrices were computed for each. These matrices were collapsed in order to provide a matrix for total linkages through trade association membership.

Common information sources. This was measured as the number of linkages among firms due to the use of common trade, industry, or professional publications as information sources by the CEOs of firms within the industry. For each title or publication, a matrix was computed indicating the number of firms whose CEO regularly reads the particular publication. As an example, if 14 executives regularly read the Wall Street Journal, any individual firm is "linked" to 13 other firms. Matrices for each title or publication were collapsed to determine the total number of linkages among firms from use of similar information sources.

Common consultants. The number of common consulting relations among firms within an industry was measured as the number of linkages among firms due to the utilization of the same consulting firms or agents. Data on the professional consultants that firms employ was compared with other firms within the industry to determine the number of linkages among firms due to the use of the same consultants. This resulted in a series of matrices for each consulting agent or firm. As with the measures of trade association memberships and information sources, the matrices were collapsed to yield a total score for this measure.

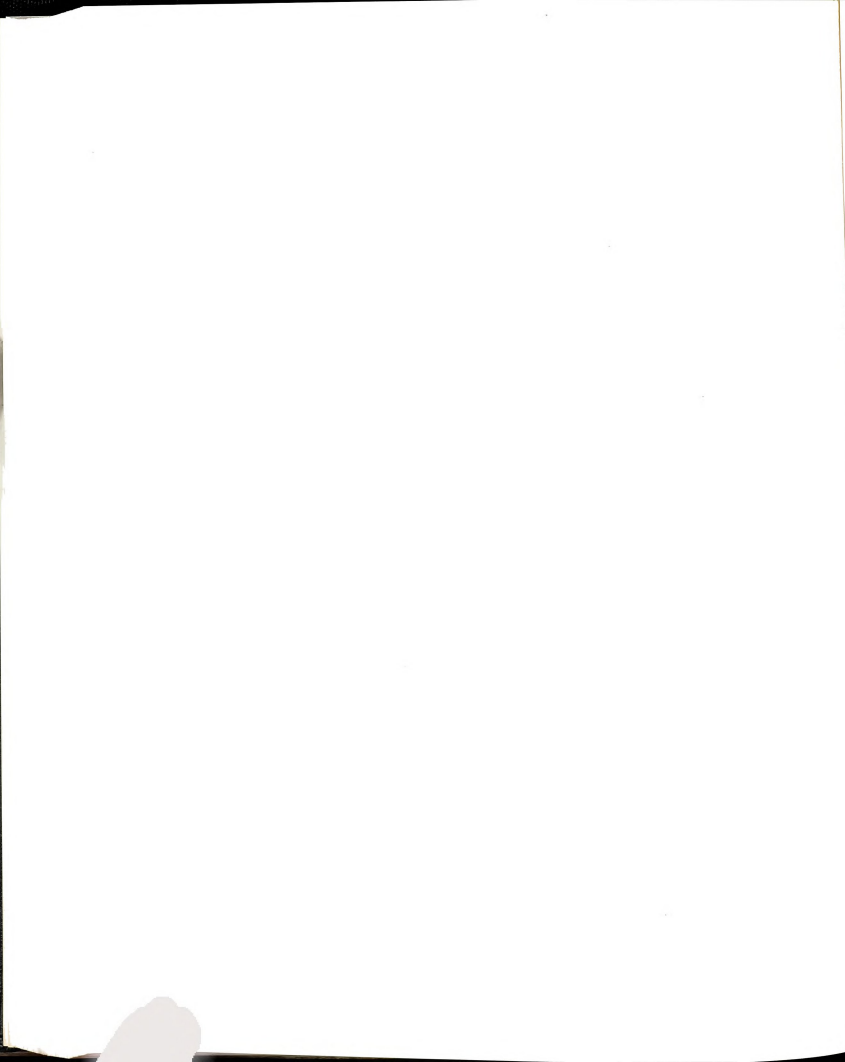
Measuring Total Firm Connectedness. The preceding scores on the various measures of professional linkage were used to determine the total number of linkages among firms within the organization field and

thus the "connectedness" of firms. The number of linkages among firms for each of the five areas - education, career experience, trade association memberships, information sources, and common consultants - were summed to determine a "Total Linkages" score, which represents the degree of connectedness among firms within the field. For any individual firm, the "Total linkages" score was the measure of firm connectedness.

Measures of Professionalism: Professional Characteristics of Firm Strategists

The role of the Chief Executive Officer (CEO) in the strategy process is a central one (Hambrick, 1981; Chandler, 1962). Because of the importance of the CEO in the formulation of strategy and in the strategic activities of the organization, they have often been used to obtain information on firm strategy (Robinson and Pearce, 1988; Hitt and Ireland, 1985). As the key figure in the strategy process, professional linkages of the CEO would be important in determining the total level of professionalism impacting on firm strategy. Two aspects of such professionalism - CEO ties with other firms in the industry through mobility and CEO tenure - were included in the measure of firm professionalism.

Employment with other firms within the auto industry. One way organizations can develop ties to other firms is through the characteristics of senior-level strategic managers. If executives are employed with several firms within an industry, they may come to acquire knowledge and information about firm operations and activities that can be transferred to their firms. In this way, patterns of



behavior can be diffused throughout organizations and may become institutionalized within the field. The greater the number of firms with which an executive is employed, the greater the acquisition and diffusion of knowledge and the greater the professional ties or linkages among organizations. Employment with other firms within the auto industry was measured as the number of organizations, whose primary business is automotive in nature, with which the CEO of any single firm has been employed, based on executives' self-reports of their career mobility.

Executive Tenure. If executives have spent a great deal of time within an industry or organization, they will tend to have more opportunities to develop ties to other firms within the field, be they customers, suppliers, or competitors. The more experienced the executive, the more likely it is that the individual strategist will acquire institutionalized knowledge and behavior patterns or will create such institutional mechanisms. Tenure can be a powerful mechanism for increasing professionalism among top-level managers. An executive's tenure was measured as the number of years the executive has been employed with firms within the industry. Executives were asked to indicate their total years experience within firms in the auto industry.

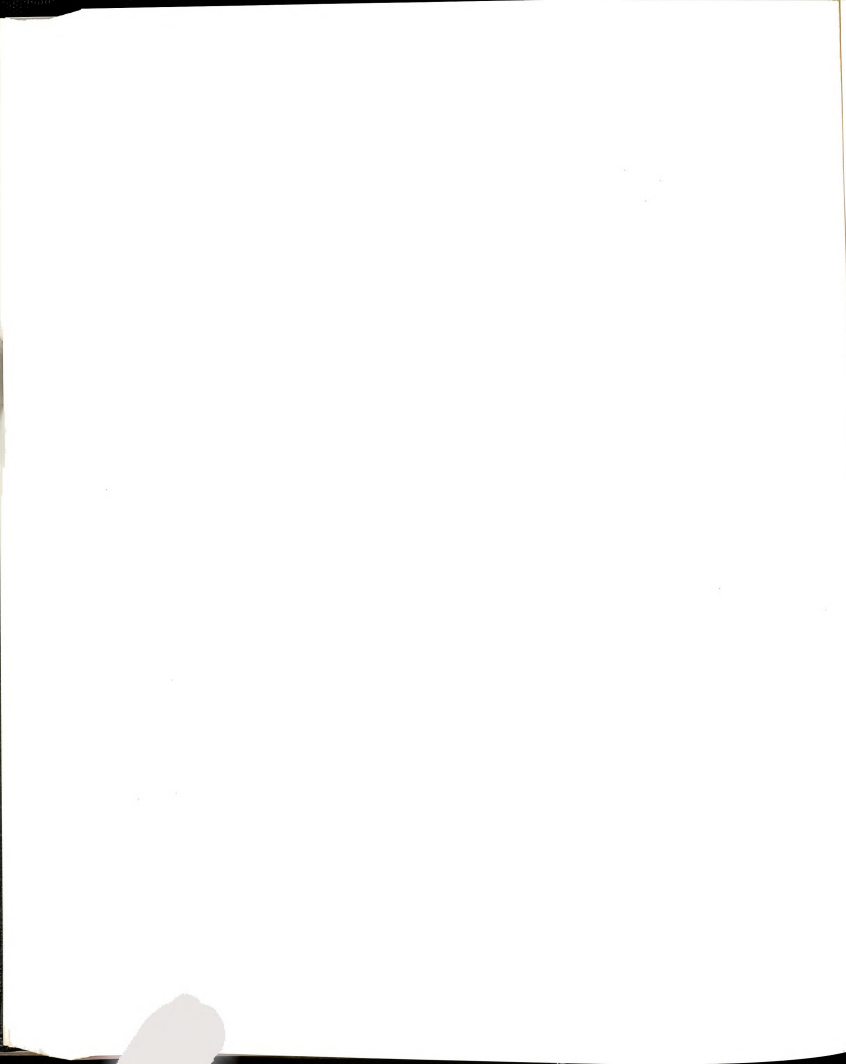
4.5 Data Analysis

4.5a Homogeneity of Variance: Use of the Fmax Statistic

Each of the three research hypotheses concerns the effects of institutional isomorphic mechanisms on homogeneity of business strategy. Homogeneity of strategy has been operationalized as the variance among firm's strategic activities. The primary issue for this study is the variance in firms' strategic business behaviors as a function of the institutional isomorphic forces. The hypotheses can be summarized as suggesting that the greater the institutional forces acting on a firm, the more homogeneous that firm's business strategy will be to those firms having similar institutional forces.

For any isomorphic mechanism there will be a mean score - an average level - and a standard deviation for that mechanism among firms in the field. If the research hypotheses are to be supported, it would be expected that those firms with high levels of institutionalized isomorphic forces would have less variance in their strategic behaviors than those firms with relatively lower levels of isomorphic forces.

For each subgroup of firms within the field, a mean score for each of the strategy variables and a variance for those scores was calculated. The homogeneity of strategy is the variance of the strategic variables. The smaller the variance, the greater the homogeneity; the greater the variance, the greater the heterogeneity. Firms were partitioned into three groups, as discussed previously: those which are relatively "High," those which are relatively "Low,"



and those which are relatively "Intermediate" in the magnitude of institutional isomorphic force. For the research hypotheses to be supported, the variance for the "High" institutional isomorphic group would be lower than the variance for the "Low" group.

The "Intermediate" groups are somewhat problematic. Partitioning techniques can be used to separate and create the comparison groups, but the differences in isomorphic force between a firm in an "Intermediate" group and those in the "High" or "Low" groups may be small compared with the entire sample of firms in the organization field. While firms may be partitioned into different groups in the analysis, the differences between the groups may not be of sufficient magnitude to detect variation in homogeneity of business strategy across clusters. Accordingly, since the differences between the "High," "Low," and "Intermediate" groups are somewhat uncertain, the three groups were not be used for this analysis. Attention was focused on the "High" and "Low" groups only, in order to maximize the differences and provide a robust test of the hypotheses. Given the exploratory nature of the study and the research hypotheses, this procedure provided an adequate test of the hypotheses.

For the hypotheses to be supported, the variance of the strategy variables for the "High" institutional group must be lower than and significantly different from the variance of the strategy variables for the "Low" institutional group. Whether the variance is lower or higher can be determined by inspection of the data. The issue of the significance of the difference can be determined using one of the available tests or homogeneity of variance. Generally, such tests have



been employed to determine if the variance among experimental groups is homogeneous, as is required for several statistical procedures, such as the analysis of variance. For his research, however, the issue is one of differences in variance between groups, and thus the use of such tests is the primary analytic method. The use of the variance as a descriptive statistic, though infrequent, has been documented by several researchers (Martin and Games, 1977; Johnson and Baker, 1973; Birch and Lefford, 1967).

There are several different available tests for homogeneity of variance available in the literature. The most prevalent are Hartley's F_{max} , (Pearson and Hartley, 1958) Cochran's (1941) C test for the homogeneity of variance and the Box-Scheffe test (Martin and Games, 1977). Hartley's F_{max} and Cochran's C can be used when the sample size of the groups is approximately equal; the Box-Scheffe test should be used when sample sizes are unequal. A description of these statistics is found in Kirk (1982) and Winer (1971). Hartley's F_{max} statistic is seen as sufficiently sensitive for analytic purposes (Winer, 1971). Games, Winkler, and Probert (1972), in a comparison of tests for homogeneity of variance, found the F_{max} to be quite robust to assumptions of non-normality and to have high statistical power. The F_{max} statistic involves dividing the largest treatment group variance by the smallest:

largest of the group variances

$$F_{\max} = \frac{\text{largest of the group variances}}{\text{smallest of the group variances}} \quad (4-3)$$

smallest of the group variances

Given the hypothesis that the treatment variances are all equal, the sampling distribution of the F_{\max} statistic has been tabulated by Hartley (Pearson and Hartley, 1958). The distribution of the statistic is found in a table in Winer (1971). The parameters for the distribution are the number of treatments, k ; and $n - 1$, the degrees of freedom for each of the sample group variances. If the observed value of F_{\max} is greater than the tabled value for the corresponding confidence level test, the hypothesis of homogeneity of variance is rejected. When the sample sizes are somewhat unequal, the largest of the sample sizes may be used to obtain the degrees of freedom necessary for use of the F_{\max} table. This leads to a slight positive bias in the test.

4.5b Homogeneity of Variance: Controlling for Critical Exogenous Variables

Testing the hypotheses involves application of the F_{\max} statistic to the individual strategy variable variances, along with inspection of the value of the variance to determine if the variance for "High" institutional firms is smaller than that of the "Low" institutional firms. To provide the best possible test of the hypotheses, it is beneficial to control for the effects of certain exogeneous variables

that might influence the strategies of firms and lead firms to appear homogeneous apart from the influences of institutional forces.

One such external factor would include the organization itself. Organization characteristics have been thought to have an effect on firm strategy (Child, 1972; Rumelt, 1974; Miles and Snow, 1978; handler, 1962). One dimension often used to characterize organizations is firm size (Scott, 1987; Blau and Schoenherr, 1971). Firms with greater size might have more resources available to use in strategic activities, leading to a differentiation among the groups in the measures of strategy. Thus, comparisons were made of the groups in terms of firm size, measured as the number of employees, to be certain the groups did not differ on this dimension. A t-test was made of the mean size of the analytic groups after partitioning to be certain that there were no significant differences in firm size.

A second factor that might affect homogeneity of business strategy would be the product or products the firm manufactures. The parts and components which suppliers produce for auto manufacturers can differ significantly. Firms which produce so-called "commodity" parts, such as fasteners (screws, nuts, and bolts), springs, or similar "standardized" components might adopt different strategies than firms which produce more specialized products. For example, firms producing commodity items would be more inclined to use a low-cost strategy (Porter, 1979a). Since products are indifferentiated, a profitable strategy requires firms to lower production costs to attain sufficient profit margins. Conversely, firms that produce highly specialized parts would be more inclined to pursue a differentiation or perhaps a

niche strategy (Porter, 1979). Profits would be derived from differentiating the product from others in the customer's perception.

Likewise, firms that supply similar parts would be expected to exhibit homogeneity in business strategies due to the activities associated with firms' competitive behavior, not the institutional forces in the environment (Anderson and Zeithaml, 1984; Hofer, 1975). The analytic sub-groups should indicate the same relative proportions of products manufactured among the firms within the groups in order to control for differences in this dimension between the sub-groups.

A third factor is the manufacturing process used by the firm. There is a suggestion in the literature that the technology of the firm has significant effect on the firm's strategic activity (Kantrow, 1980). If firms employ similar production methods, similarity in strategy may be due to the demands placed on the firm's strategic activities by the production process. If the analytic sub-groups of the study differ in the production processes utilized, differences in strategic behavior may be due to the difference in manufacturing activities. This would confound the test for homogeneity of variance between the two groups. As with the products produced, firms in the analytic sub-groups should indicate the same relative proportions of various production processes employed among firms within the sub-groups in order to control for differences in production technology between the two groups.

A comparison was made of the groups under analysis to ascertain if there were significant differences between the groups in the products

manufactured and the production processes employed by the firms within each group. There were two issues that were considered in this analysis. First, subgroups should exhibit differences in products and in the production processes among firms within the group. This would control for any similarity that might be due to homogeneity of products or manufacturing methods. Second, the two sub-groups should be similar to one another in the distribution of products and production processes of firms within the sub-groups to control or variance due to such differences.

Both the products manufactured and the production methods of supplier firms in the sample were assessed by comparing the relative proportions of products and production methods of firms within the analytic groups. The manufacturing techniques of firms within the study were classified into 5 categories, based on a scheme provided in the ELM Guide to Automotive Sourcing (1988): Metal Stampings (including forging, stamping, and welding); Metal Fabrication (including fabricating, forming, and heading); Castings (including diecasting and machining); Plastics (including molding and extrusion); and Miscellaneous Manufacturing (including assembly, die manufacture, and unspecified production processes). The products produced by supplier firms were also classified into 5 categories, again based upon a scheme provided in the ELM Guide: Power Train components (including engine components, fuel systems, exhaust systems, transaxles, and drive trains), Chassis components (including steering systems, wheels and tires, suspension systems, and braking systems), Auto Body components (including seating, passenger restraint systems, and trim), Electrical

components, (including electronics, climate control, and engine electrical), and Generic or Miscellaneous components. Firms in the study were classified according to the dominant manufacturing process employed and the primary product as indicated in the firm's self-reports in the ELM Guide.

These classification systems yielded a distribution for firms in the sample, which indicated the proportion of firms which utilize a specified manufacturing process and which manufacture a given product. In order to make inferences about these proportions, a Chi-Square test of goodness of fit was used (Mason, 1974). To determine if firms in the sub-groups are similar to one another, the proportion of firms within each sub-group employing a specific production method or manufacturing a specific product type should not differ significantly from one another. If the differences in the proportions between the sub-groups are not significant, it can be argued that neither the production process nor the product manufactured would have a systematic effect on the homogeneity of business strategy between the two groups of firms in the analysis.

4.5c Homogeneity of Variance: Testing the Research Hypotheses

It was necessary to evaluate the research hypotheses for each of the measures of the dependent variables separately in addition to conducting the overall assessment. The measures of business strategy were assessed using the six categorical classifications presented in Table 4-1: industry, Product Competition, R&D, Production/Investment,

Efficiency, and marketing. The evaluation of the data had to consider the pattern of results or the dependent variables in determining the results of the study. The nature of the study and the variables meant that there was a qualitative aspect to the analysis.

To impose some rigor on the qualitative dimension of the analysis, a decision rule was created to evaluate the individual research hypotheses. The decision rule was based upon the statistical analysis employed and the variables used in the research. The central tenet of all three research hypotheses was that the stronger the institutional mechanisms or isomorphism among a group of firms, the greater the homogeneity of variance among the business strategies of the firms. The decision rule used in this assessment was as follows: for the research hypothesis to be supported, a majority of the variances in the measures of business strategy had to be significantly lower for the group of firms with high institutional isomorphic mechanisms than for the group of firms with low levels of such institutional mechanisms. The total number of such significant differences had to exceed that expected by chance.

The measurement model developed for this study is shown in Figure 4-2. This model reflects the measurement to be used for the independent variables, and the analysis of the difference in the variance of the strategy variables across groups. This model was derived from the theoretical model that forms the basis for the hypotheses of this research.

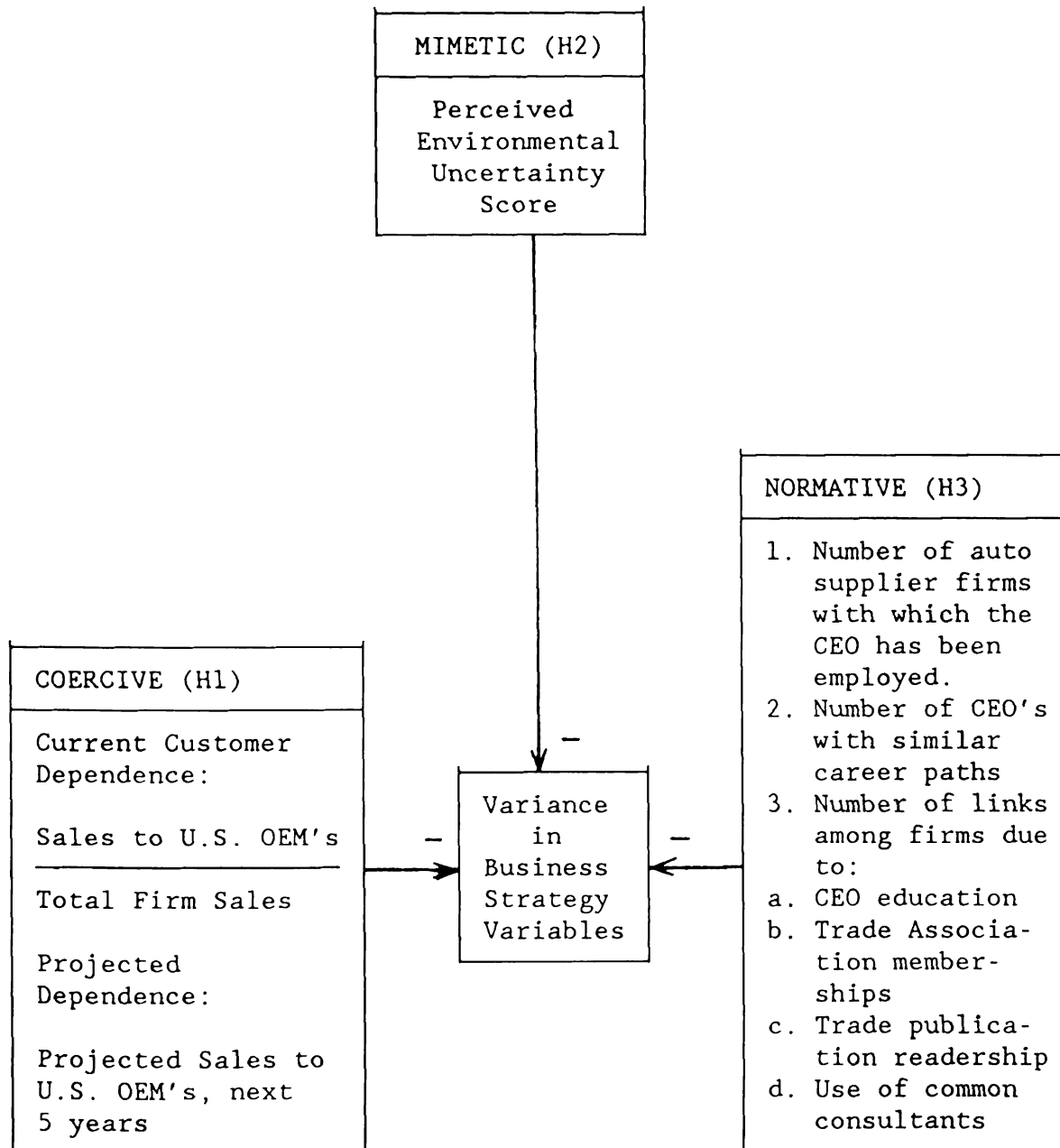


Figure 4-2

Measurement Model of the Research Hypotheses

4.5d Power Analysis

The power of a statistical test is the probability that it will yield statistically significant results (Cohen, 1977). It is the ability of an experiment to detect differences between alternative conditions when they are present (Keppel, 1982), or in more precise language, the probability of a type II error in the research - failing to reject the null hypothesis when it is false (Kirk, 1982). The primary method for controlling the power of an experiment is through the determination of the appropriate sample size (Keppel, 1982).

To determine the power and the adequate sample size for the proposed research, an analysis of experimental power was done. Cohen (1977) provides an extended treatment of statistical power analysis for various tests of significance. It is important to note that a primary consideration in performing such tests is the estimate of the anticipated effect size to be obtained, the type I error rate - the level of significance or alpha - and the specification of the desired power - the type II error rate or the beta - for the research. Generally, a minimum power level of .80 is desired.

The determination of the effect size requires either an estimate based on some predictions by the researcher or the availability of data on which to base some informed estimate of the effect size to be obtained in the experiment (Keppel, 1982). For the proposed research, data was available from an earlier study by Skivington and Buchko (1988). The study examined 70 auto suppliers on a variety of dimensions, including nine measures of business strategy and the level

of customer dependence, representative of the dependent and independent variables in the proposed study respectively. The firms were separated into three groups based on the scores on the dependence measure, using the mean and the standard deviation for the entire sample. Within-group variances were calculated and a series of F tests were performed on each of the nine measures of business strategy to assist in the calculation of the effect size.

Using the procedures described in Cohen (1977) and Keppel (1982), the effect size for each of the nine measures of strategy were calculated and the lowest effect size was used for the power analysis. The lowest computed effect size was .30, corresponding to a medium effect size when using the F test for significance (Cohen, 1977). When testing for differences between variances of two samples, there is an F test statistic available (Bruning and Kintz, 1977) that can be used for the determination of power. The Fmax statistic is normally used when testing differences in variance among several samples, but it may be used on two samples and is generally preferred because of its superior power and ease of calculation (Keppel, 1982). The Fmax is the statistic to be used in the actual data analysis of this research. Because of the absence of power tables for the Fmax statistic, however, the F test for homogeneity of variance was to be used. This provided a somewhat conservative estimate of the power of the study.

For this research, the desired type I error rate (α) is .05, the type II (β) error rate desired is .80, the estimated effect size is .30, and the comparisons were based on two groups. Data from a series of tables in Cohen (1977) indicates that for the preceding

parameters, 45 firms would be needed in each group to have sufficient power. The target size for cluster composition was 45 firms per cluster or group.

An additional concern was the alpha level, or the probability of a Type I error. Since business strategy is a multi-dimensional construct, multiple measures were used - in fact, 17 measures were used in total for the study corresponding to the 17 dependent variables. With alpha equal to .05, there was a high probability that at least one of the seventeen measures would be significant by chance alone. For the hypotheses to be supported, a sufficient number of the measures had to be significant to exceed the chance level and give confidence in the conclusions of the study.

4.6 Methodology: Data Collection

4.6a Sample

For this study, firms designated as auto industry suppliers were selected from the ELM Guide to Automotive Sourcing annual for 1988. The guide lists over 770 firms who have responded to a survey concerning the nature of their organization and the firm's activities within the auto industry. Among the data represented in the Guide is the firm name and address, the name of the CEO, senior Sales/Marketing officer, and the senior Purchasing executive, the annual sales of the firm, the product(s) which the firm produces, number and size of plants (in square feet), auto manufacturer quality ratings, number of

employees, the year the firm was founded, major non-automotive customers, and export activity. A representative listing for a firm is shown in Appendix A-4.

Five hundred and twenty firms were selected at random from the Guide. An attempt was made to contact the CEO of each firm via telephone to solicit their participation in a study of auto supplier firms. Three hundred and thirty-one CEOs indicated a willingness to participate or at least "look at a survey"; 7 responded negatively and the remainder did not respond to the phone call.

Each of the 331 firms who agreed to participate in the study was mailed a survey form which is described in the following section. Completed surveys were received from 137 firms, a response rate of 41.4%. Given the length of the survey and sensitive nature of much of the information requested, this response rate was considered acceptable. Fourteen firms returned surveys and indicated they were unwilling to participate in the research. A comparison of the responding firms from those who did not respond did not find any significant differences between respondents and non-respondents on dimensions provided in the Guide. In particular, no differences were found in firms' average size, measured as the number of employees ($t = 1.671$, $p = .05$), age ($t = 1.282$, $p > .10$), components manufactured (Chi square = 2.212, $p > .10$), or manufacturing processes used (Chi square = 2.718, $p > .10$).

The 137 firms who responded to the survey were compared with the entire population of firms in the ELM Guide to determine if there were significant differences in firm size, products manufactured, or

manufacturing processes between the sample of firms and the population. No differences were found for firm size ($t = 1.122$, $p > .10$). Nor were there significant differences in the distributions of products manufactured (Chi square = 2.31, $p > .10$) or the manufacturing processes used by firms (Chi square = 2.77, $p > .10$).

4.6b Data Collection: Survey

In order to obtain the data necessary for developing the measures and testing the hypotheses of this research, a survey was mailed to the Chief Executive Officer of each firm in the sample. A copy of the survey is attached in Appendix A-3. The survey contained a series of questions requesting the following information:

1. Basic Company Data: number of employees, extent of unionization, age.
2. Sales Data: total annual sales revenue, sales revenue by major customer group, revenue from new products.
3. Operating Data: information on the size of the market served and market share, plant capacity utilization, R & D expenditures, advertising and sales expenses, receivables, finished goods inventory, value of plant and equipment, profit, and extent of technological change.

4. Competitive Assessment: status of the firm's products and expenses relative to competitors. Measured on a 5-point scale, from more than 10% lower than competitors" to "more than 10% higher than competitors."

5. Projected Activity: assessments of the CEO about projected firm activity in the future concerning sales and operating activities of the company. These items were assessed using a scale ranging from -4 (a significant decrease in activity) to +4 (a significant increase in activity).

6. Strategic Planning: the extent of formal strategic planning activity of the firm. Six dimensions of strategic planning were described, and executives were asked to indicate if their firm's strategic planning process included each particular dimension.

7. Miscellaneous firm data: information concerning the linkages among firms in various interorganizational networks. Executives were asked to indicate the industry associations to which the firm belongs, the professional or industry publications which the CEO reads regularly, and the consulting firms which the firm employs.

8. Environmental Perceptions: this is the Miles and Snow perceived Environmental Uncertainty (PEU) scale discussed previously.

9. Individual Information: data on the firm's CEO - educational experience, career experience, and tenure.

10. Board of Directors: names and affiliations of the members of the firm's Board of Directors.

Strategic-level managers, primarily firm CEOs, have been used often as a source of data on company strategy (Robinson and Pearce, 1988; Pearce, Robbins, and Robinson, 1987; Hitt and Ireland, 1985; Lyles and Mittroff, 1980; Mintzberg, Raisinghani, and Theoret, 1976). CEOs, by virtue of their position in the organization and their role in the strategy process, are viewed as the most accurate source for gauging the firm's strategic planning and defining the firm's strategy (Hambrick, 1981; Chandler, 1962). Reports from CEOs can often provide information not available from other sources of data (Huber and Power, 1985). Given the nature of this study, the CEO was viewed as the key informant, the individual most capable of providing the required information (Huber and Power, 1985). As a data check, respondents were asked to indicate their current job title on the questionnaire. The results indicated that the CEO did fill out the questionnaire as requested in the initial telephone contact. This high response from CEOs may have been due to the preliminary phone conversation, which secured the agreement of the CEO to participate in the survey. The information obtained from this survey provided the necessary data for measurement of the variables of this research. Table A-1 in the Appendix presents the operational measures of the independent variables in the study and the survey items which correspond to the independent

variable measure. Appendix Table A-2 presents the operational measures of the dependent variables in the study and the survey items which correspond to the dependent variable measures.

4.7 Results

4.7a Summary Statistics for the Firms in the Study

Table 4-2 presents summary data and statistics for the variables used in this study. The variable name is shown in Column One. Column Two indicates the number of cases with valid data for each variable. Some of the firms did not respond to certain items, either out of an unwillingness to share what they perceived as sensitive or confidential information or a lack of data. Column Three indicates the mean for the variable, and Column Four presents the standard deviation. The remaining columns present the zero-order correlation matrix for the study variables.

The pattern of significant correlations indicated no systematic relationships among the variables of the study. Of primary concern was the relationships among the independent variables, the measures of institutional isomorphism. High correlations between these variables would indicate that similarities in results across hypotheses could be due to the similarities in the variables. Though this is not necessarily unexpected - given the nature of institutionalization, it might even be anticipated - such relations might confound the results of the study.

Table 4-2
Means, Standard Deviations, and Correlations of the Research Variables

Variable	N	Mean	S.D.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)
1. FRIDEP	129	0.49	0.32	1.00																						
2. FRJDEM	134	2.76	1.35	.18*	1.00																					
3. FRJLAW	137	3.26	1.35	.18*	.03	1.00																				
4. FRINS	126	1.94	1.83	.24*	.19*	1.00																				
5. EXTER	125	17.78	11.13	.25*	.08	.02	1.00																			
6. TOTLINKS	120	169.89	77.85	.35*	.12	.09	.18*	.11	1.00																	
7. TECHUG	134	3.88	1.11	.14	.20*	.11	.03	.11	.16*	1.00																
8. RELRAG	137	3.26	0.97	.08	.08	.01	.07	.13	.07	.04	1.00															
9. FRJLAW	137	3.26	1.35	.18*	.03	.11	.03	.11	.16*	.04	.22*	1.00														
10. FRJLAW	137	3.26	1.35	.18*	.03	.11	.03	.11	.16*	.04	.22*	.05	1.00													
11. MTSHR	97	13.16	12.80	.05	.09	.20*	.01	.17	.05	.11	.25*	.26*	.15	1.00												
12. NEWSLS	133	19.52	19.81	.23*	.06	.10	.02	.09	.25*	.11	.05	.02	.01	.23*	1.00											
13. FREVER	119	2.03	2.03	.03	.01	.08	.06	.08	.03	.14	.04	.02	.01	.01	.01	1.00										
14. FREVER	119	2.03	2.03	.03	.01	.08	.06	.08	.03	.14	.04	.02	.01	.01	.01	.01	1.00									
15. FENVER	106	6.67	6.08	.30*	.25*	.05	.20*	.07	.28*	.20*	.01	.08	.01	.09	.17*	.12	.07	1.00								
16. FENVER	92	0.57	0.17	.15	.12	.18	.02	.24	.07	.01	.31*	.16	.05	.12	.01	.13	.01	.04	1.00							
17. STEVER	98	25.20	14.54	.12	.18*	.15	.06	.08	.11	.07	.03	.13	.11	.01	.22*	.05	.18*	.03	.48*	1.00						
18. CAPUTL	126	16.26	16.26	.13	.11	.08	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	1.00					
19. CAPUTL	126	16.26	16.26	.13	.11	.08	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	1.00				
20. FREVER	90	4.63	5.70	.15	.11	.04	.07	.13	.07	.11	.05	.09	.13	.21*	.16	.04	.19*	.15	.03	.17	.23*	.42*	1.00			
21. FREVER	115	3.11	2.47	.30*	.12	.18	.04	.13	.09	.07	.08	.01	.03	.19*	.05	.17*	.04	.29*	.05	.02	.16*	.16	.03	1.00		
22. FREVER	114	0.40	0.52	.16*	.04	.01	.02	.10	.18*	.01	.17*	.07	.06	.05	.14	.22*	.02	.31*	.04	.01	.18*	.05	.14	.40*	1.00	
23. NEWSLS	113	2.68	1.98	.15	.06	.02	.01	.09	.10	.01	.32*	.01	.24*	.09	.09	.08	.07	.10	.08	.01	.20*	.07	.13	.23*	1.00	

*p < .05

**p < .01

A review of the table indicates that systematic relations exist between the measure of current dependence (1) and the three measures of professionalism (4,5, and 6), and between the number of firms for which the CEO has been employed (4) and the remaining two measures of professionalism (5 and 6), with the significance of these correlations exceeding the .01 level. The latter is anticipated; firms which are high on one dimension of professionalism would be expected to be high on all dimensions, given the discussions in the previous chapter of institutionalized professionalism.

The relation between dependence and professionalism might be due to the nature of institutionalization. Firms which are highly dependent would develop many similar ties, because of their structural equivalence in the field and the connectedness and cohesion of firms within the field structure. However, current levels of dependence and professionalism are not related to the measure of future or anticipated dependence. Since dependence was measured by both current and future dependence, the lack of a significant relationship for this association indicated that there may be sufficient independence in the measures to allow for separate tests of the two hypotheses.

A second issue concerns the relations among the dependent variables, the measures of business-level strategy. High correlations among variables might lead to a conclusion that a significant finding for one variable would be found for its correlated variable as well, due to the intercorrelation. The data analysis in this study indicated that the correlations among the dependent variables did not affect the results in a systematic manner.

Table 4-3 indicates the distribution of all firms in the sample for the production process classification system. The first column indicates the firm's major production method. In the second column the frequency for all firms in the ELM Guide within each production process category is shown, and column three calculates the relative percentage for each production process for all firms. Column four presents the distribution for the sample of firms in the study, and the final column contains the percentage of firms in the sample within the production process categories. As seen in the table, the sample distribution is reasonably similar to the population (Chi square = 2.77, $p > .05$, not significant).

Table 4-4 indicates the distribution of all firms in the sample for the product classification system presented previously. The first column indicates the firm's major product. The second column depicts the frequency - the number of firms - within each category for the firms in the LM Guide. The third column gives the percentage of firms in within the product category. Column four indicates the product category frequency for the firms in the sample, and the final column the percentage for the sample firms. As with the distribution for production processes, there was no significant difference between the sample firms in the study and the entire population of firms represented in the ELM Guide (Chi square = 2.31, $p > .05$, not significant).

Table 4-3

Distribution and Frequencies for the Manufacturing
Processes Utilized by the Auto Supplier
Firms in the Study

Manufacturing Process:	All Firms: Frequency	All Firms: Percentage	Sample: Frequency	Sample: Percentage
Metal Stampings	203	22.7%	28	21.1%
Metal Fabrication	61	6.8%	11	8.3%
Castings	115	12.8%	19	14.3%
Plastics	169	18.9%	30	22.6%
Miscellaneous/ Unknown	348	38.8%	45	33.8%

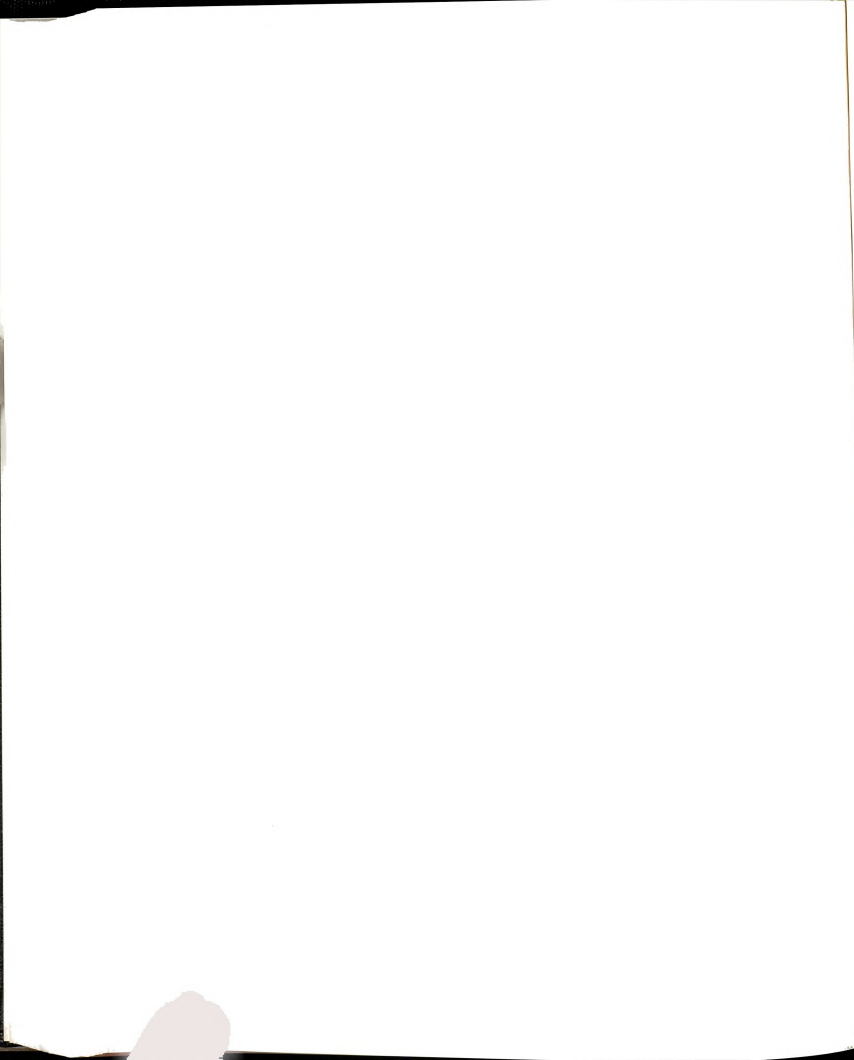
Chi-square: 2.77, $p > .05$ (n.s.)

Table 4-4

Distribution and Frequencies for the Primary
Products Manufactured by the Auto
Supplier Firms in the Study

Primary Products:	All Firms: Frequency	All Firms: Percentage	Sample: Frequency	Sample: Percentage
Power Train Components	189	20.4%	20	15.9%
Chassis Components	91	9.8%	13	10.3%
Auto Body Components	241	26.0%	31	24.6%
Electrical Components	171	18.4%	25	19.8%
Miscellaneous/ Unknown	235	25.4%	126	29.4%

Chi-square = 2.31, $p > .05$ (n.s.)



4.7b Hypothesis 1: Dependence and Homogeneity of Strategy

Dependence was measured as the percentage of firm sales to the U.S. Original Equipment Manufacturers, or OEMs, and as the amount of forecasted sales growth to OEMs in the next five years. Following Aldenderfer and Blashfield (1984), the cluster analysis of the firms based upon these variables indicated the presence of three distinct groups. The difference in the distance coefficient between the three group and two group solution was equal to 91.73, while the difference between the three group and the four group solution was equal to 22.51. The magnitude of the differences in the distance measures suggests that the three group solution would be most appropriate for the data. This is shown graphically in Figure 4-3, which is Aldenderfer and Blashfield's (1984) decision heuristic for cluster determination. They suggest that the point at which there is a noticeable flattening in the curve implies that a reasonable cluster solution has been achieved. To verify this, Mojena's Rule One (Aldenderfer and Blashfield, 1984; Lorr, 1983) was applied to the fusion coefficients from the cluster analysis. This "stopping rule" for determination of the number of clusters develops a test statistic Alpha which is equal to:

$$\text{Alpha} = X + kS \quad (4-4)$$

where X is the mean of the fusion coefficients, S is the standard deviation of the fusion coefficients, and k is the standard deviate (z score or significance level) (Mojena, 1977). Mojena used a Monte Carlo

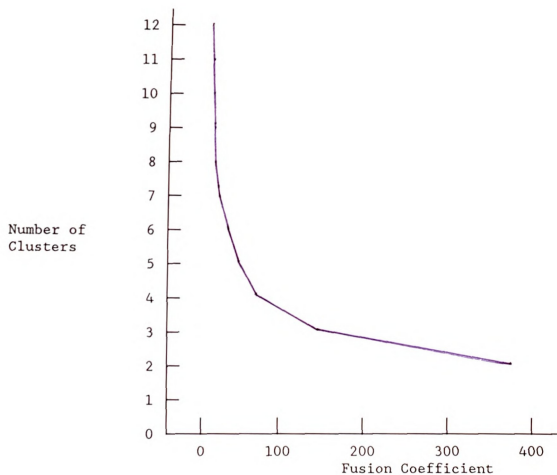
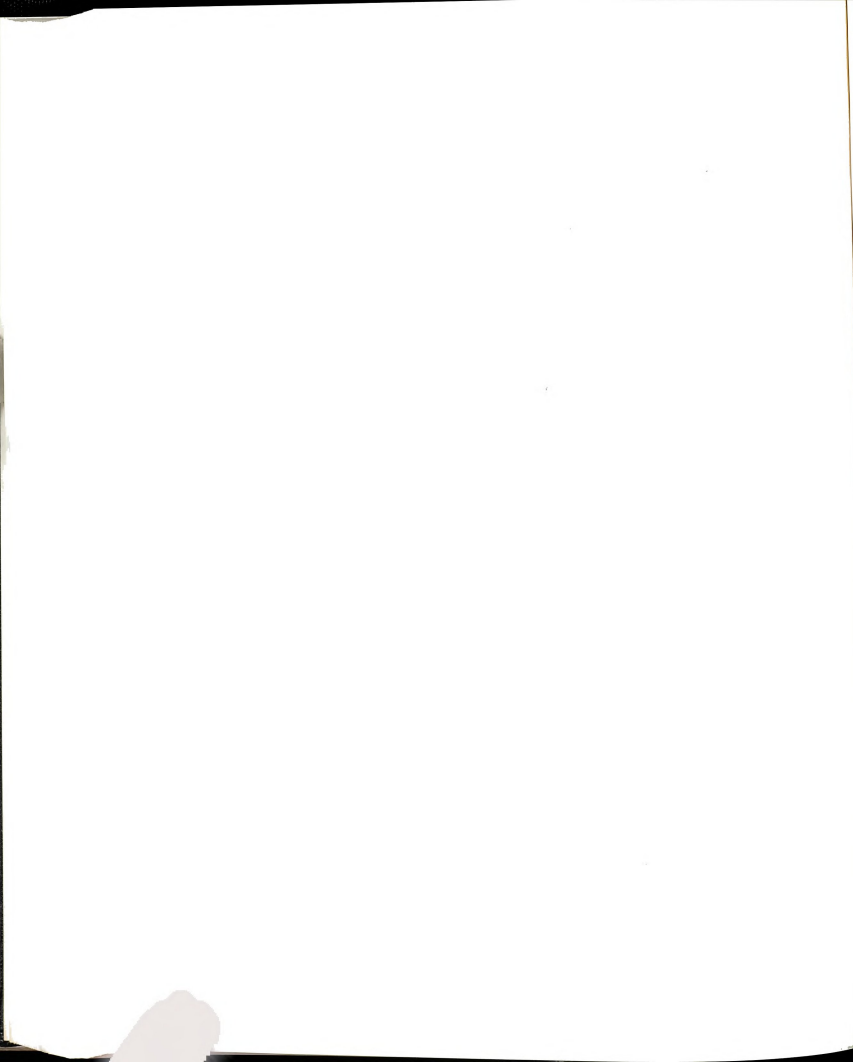


Figure 4-3

Plot of the Number of Clusters Versus the Fusion
Coefficient, Ward's Method Solution of the
Firm Dependence Data Set



simulation to generate clusters and found that the appropriate rule is to stop clustering when the difference between two fusion coefficients exceeds Alpha. For the cluster analysis using the dependence measures, Alpha was equal to 77.231 at the .05 significance level. Recall that the difference between the three and the two group solution was 91.73, while the difference between the three and the four group solution was 22.51. Mojena's Rule One suggests that the three cluster solution is the appropriate stopping point for determining the number of clusters.

The data for the three-group cluster solution is presented in Table 4-5, which indicates the scores of firms in the groups for the measures of the dependent variables. A t-test of the differences in the mean scores for the independent variables was done to determine if the differences between the high and the low clusters were significant. The results of the t-test are reported on the lower portion of Table 4-5. Following Aldenderfer and Blashfield (1984), comparison of differences in the cluster scores on the key variables is one method of validating a cluster solution. T-tests were also conducted for the differences in the independent variable measures between the high and intermediate groups and the intermediate and low groups. Projected dependence differed between all three groups, and current dependence differed between the intermediate and low dependence clusters as well. The significance of the t-tests between the clusters tends to support the three cluster solution.

The first cluster (N=49) was characterized by high current sales levels (Current Dependence = .58, or 58% of current sales) and the anticipation of significant increases in future sales (Future Sales =

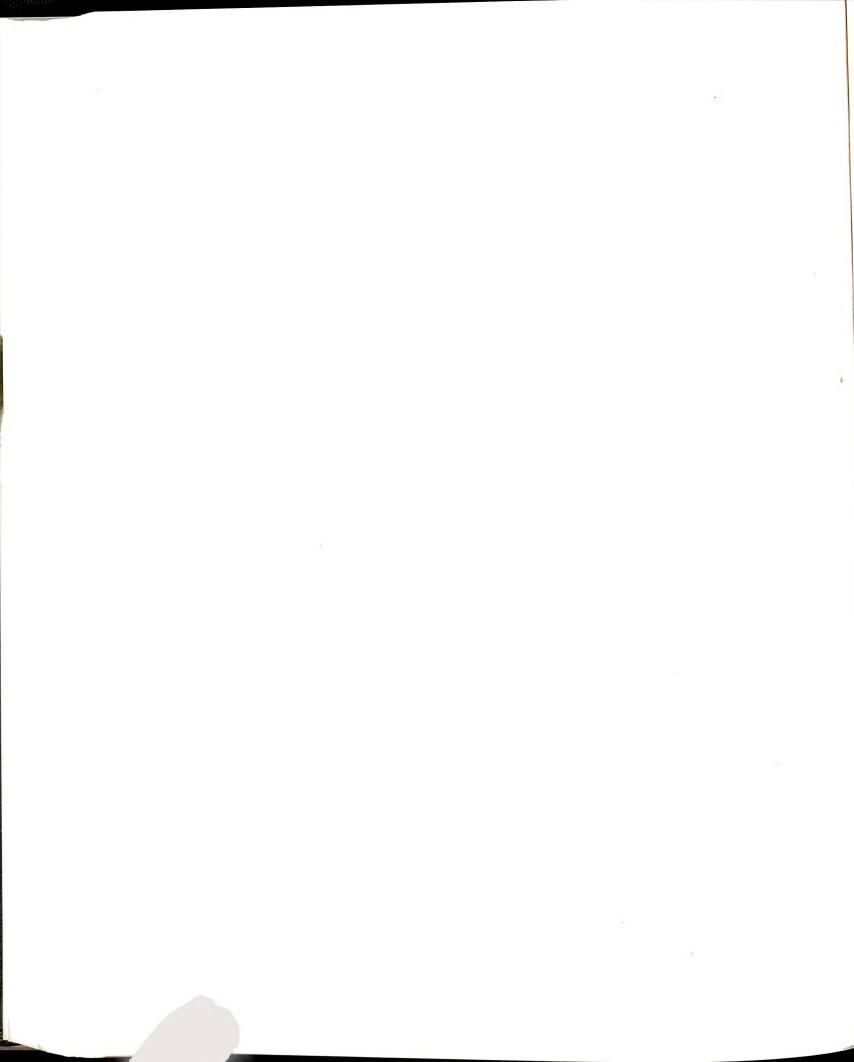
Table 4-5

Means, Standard Deviations, and t-tests of the
Differences in the Analytic Clusters of Auto
Supplier Firms in the Study - Dependence

	High Dependence Cluster 1	Intermediate Dependence Cluster 2	Low Dependence Cluster 3
Cluster Size	49	35	48
Current Sales			
(Dependence) - Mean:	0.58	0.50	0.36
Standard Deviation:	0.28	0.34	0.31
Projected Sales			
(Dependence) - Mean:	3.31	2.00	0.43
Standard Deviation:	0.47	0.00	1.53

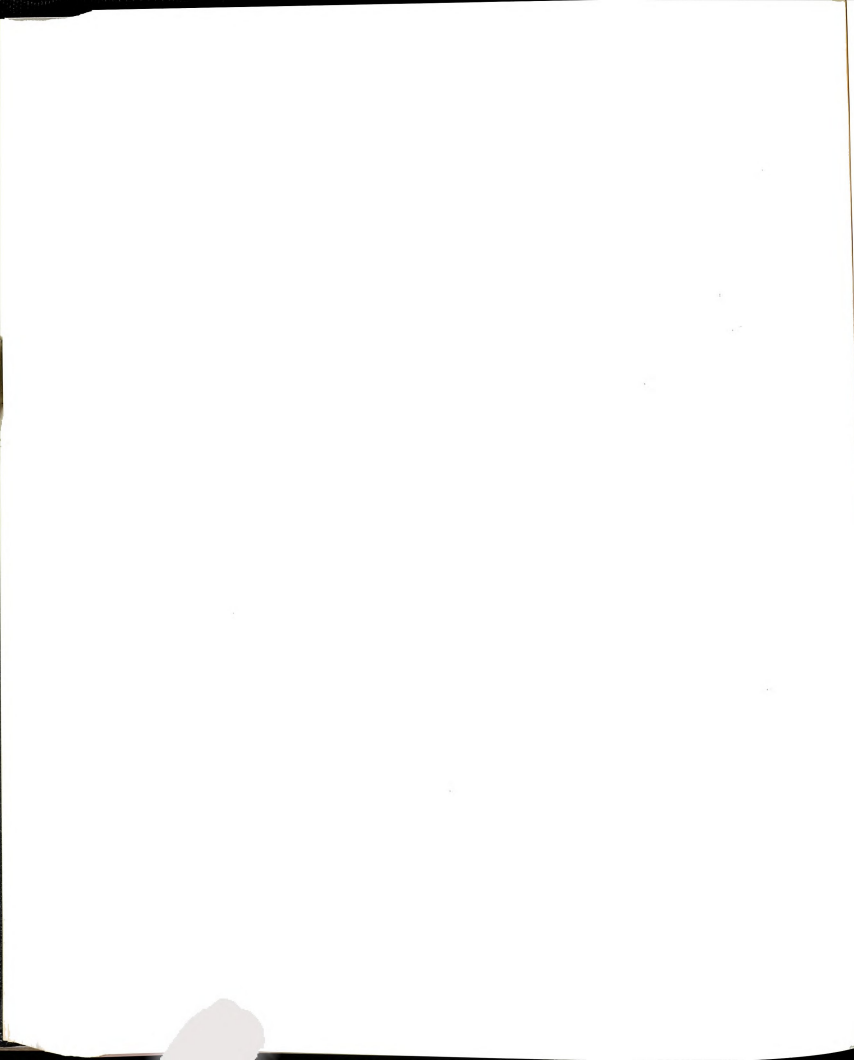
t-tests:

Cluster 1 v. Cluster 3 - Dependence:	t = 3.49, p < .01
Cluster 1 v. Cluster 3 - Projected Sales:	t = 12.52, p < .001
Cluster 1 v. Cluster 2 - Dependence:	t = 1.17, p < .10 (n.s.)
Cluster 1 v. Cluster 2 - Projected Sales:	t = 16.38, p < .001
Cluster 2 v. Cluster 3 - Dependence:	t = 1.92, p < .05
Cluster 2 v. Cluster 3 - Projected Sales:	t = 5.99, p < .001



3.31). Cluster 2 (N=35) indicated moderate current sales (.50), and a moderate level of future sales growth anticipated by these firms (2.00). Cluster 3 firms (N=48) had relatively low current sales (.36), and anticipated little to no growth in future sales to OEMs (0.43). Five firms were not included in the cluster procedure because of missing data. The t-tests of the difference in the means of the current sales dependence and the projected future sales dependence measures for Clusters 1 and 3 were significant ($t = 3.49$ and 2.52 respectively), suggesting that these clusters differed in terms of the measures of dependence.

To test Hypothesis One, a test of the homogeneity of the variance in strategy variables between Cluster 1 (the "High" dependence firms) with the variance for the strategy variables in Cluster 3 (the "Low" dependence firms) was conducted. Before conducting the actual analysis, the control variables of firm size, manufacturing process, and products manufactured were compared for the two groups. It was found that Cluster 3, the "Low" dependence firms, included two firms whose unusually large size led to a difference between the groups in mean firm size. Accordingly, these two firms were omitted from the analysis and the two groups were found to be similar in terms of the average size of firms ($t = .407$, not significant). Note that this provided a more rigorous test of the hypothesis. Since these two firms were members of the "Low" institutional group, the omission of their data tends to diminish the variance in strategy for firms in this group. It was therefore less likely that significant differences in the variance among the strategy variables would be detected between the



two groups. Also, omitting these firms controls for differences in the two groups which might have been due to firm size. A series of Fmax tests were performed both before and after eliminating these two firms. The results were not significantly different.

An evaluation was made between the two groups of the manufacturing processes used and the products manufactured by the firms in each group. The results of this analysis are reported in Tables 4-6 and 4-7. Table 4-6 presents the distribution of manufacturing processes for firms in the High Dependence and the Low Dependence clusters. The results of the Chi square test are shown. Chi square was equal to 8.35, which was not significant. There were no differences between the clusters in the manufacturing processes used by the firms.

The distribution for products manufactured by the firms in the High Dependence and the Low Dependence clusters are presented in Table 4-7. The results of the chi square goodness-of-fit test indicated a significant difference in the distributions of the two clusters of firms chi square equal to 13.40, $p < .05$). Inspection of the data in the table revealed that the Low Dependence cluster had fewer firms manufacturing power train components and more firms which manufactured auto body parts and electrical components than would be expected. This was a concern, since it suggested that the Low Dependence firms might exhibit greater homogeneity of variance because of the increased similarity in the components manufactured among the upplier firms in the cluster.

To determine if this difference might adversely affect the results of the analysis, a sub-group analysis was conducted on the firms in the

Table 4-6

Distribution and Frequencies for the Manufacturing
Processes Utilized by the Auto Supplier Firm in
the Sample (Including Chi-square test)

Hypothesis 1 - Dependence:

Manufacturing Process:	High Dependence: Frequency	Low Dependence: Frequency
Metal Stampings	8	13
Metal Fabrication	5	3
Castings	7	9
Plastics	13	7
Miscellaneous/Unknown	16	14

Chi-square: 8.35, $p > .05$ (n.s.)

Table 4-7

Distribution and Frequencies for the Primary Products
Manufactured by Auto Supplier firms in the Sample
(Including Chi-square test)

Hypothesis 1 - Dependence:

Primary Products:	High Dependence: Frequency	Low Dependence: Frequency
Power Train Components	5	11
Chassis Components	4	4
Auto Body Components	16	8
Electrical Components	11	7
Miscellaneous/Unknown	13	16

Chi-square: 13.80, $p < .05$

Power Train Components group and on firms in a combined Auto Body/Electrical components group. The analysis mirrored the Fmax test conducted on the entire sample of firms in the study. For firms in the Power Train components group, the results of the analysis indicated that firms in the high dependence condition had greater variance in the measures of strategy than firms in the low dependence group. However, the total size of the sample of firms in the two groups (High Dependence $N = 5$, Low Dependence $N = 11$) lacks sufficient statistical power to detect true results. Thus, the conclusions of this sub-group analysis are unclear. Given that the results would tend to refute the study hypothesis, however, including these firms in the final analysis does not affect the test of the hypothesis.

Firms in the Auto Body/Electrical Components subgroups were also analyzed using the Fmax test for homogeneity in variance. The results of this subgroup analysis did not differ significantly from the overall results of the study. The Fmax statistics were similar to the analysis in all but two measures: Relative Price and Market Share. For these two variables, the results indicated no differences between the two groups in the variance. The conclusion was that this subgroup did not differ significantly from the sample of firms in the study.

Table 4-8 presents the results of the homogeneity of variance analysis for these two groups of firms. For each cluster of firms, the mean score and the variance for both the independent variables (current dependence and Projected Sales) and the seventeen measures of business strategy the dependent variables - along with the number of firms reporting valid data for each variable, are presented. The value of

Table 4-8
Homogeneity of Business Strategy: Variance in Business Strategy Variables
as a Function of Firm's Dependence

	High		N	Low		N	Hartley's F _{max}	Hypothesis Supported?
	Mean	Variance		Mean	Variance			
<u>INDEPENDENT VARIABLES:</u>								
Dependence	0.58	0.88	49	0.36	0.10	46		
Projected Sales	3.31	0.22	49	0.43	2.34	46		
<u>DEPENDENT VARIABLES:</u>								
<u>INDUSTRY VARIABLES -</u>								
Technological Change	4.04	1.14	48	3.58	1.23	46	1.079	
Rel. Compensation Avg.	3.33	0.93	49	3.28	1.19	46	1.280	
<u>PRODUCT COMPETITION VARIABLES -</u>								
Product Quality Average	94.83	67.57	46	95.80	106.63	44	1.578	Y
Relative Price	3.35	0.44	49	3.28	0.92	46	2.091+	Y
Market Share	10.83	119.67	36	15.62	242.71	34	2.028+	Y
<u>R&D VARIABLES -</u>								
New Products, % of Sales Avg.	23.56	538.89	46	16.21	202.60	45	2.660*	N
Product R&D/Revenue Average	2.17	5.08	44	1.57	2.17	44	2.341*	N
Process R&D/Revenue Average	1.46	3.11	43	1.88	3.07	43	1.013	N
<u>PRODUCTION/INVESTMENT VARIABLES -</u>								
Inventory/Revenue Average	5.43	23.61	40	8.33	58.80	41	2.490*	Y
P & E Newness Average	0.57	0.03	34	0.55	0.03	36	1.000	Y
Investment/Revenue Average	21.84	101.76	35	28.03	310.78	39	3.054*	
<u>EFFICIENCY VARIABLES -</u>								
Capacity Utilization Average	72.67	322.68	45	69.69	298.40	45	1.081	
Sales/Employee Average	100.27	2262.78	49	105.84	1628.80	46	1.389	Y
Profit/Employee Average	3.73	15.39	31	4.41	52.10	36	3.385*	
<u>MARKETING VARIABLES -</u>								
Sales Force Expense/Revenue Avg.	2.99	3.50	43	3.47	9.96	44	2.866*	Y
Media Adv. & Sales Promo./Revenue	0.41	1.77	41	0.35	0.19	43	9.316*	N
Relative Sales & Promotion Exp.	2.75	1.21	48	2.61	1.31	44	1.083	
							*p .05	
							*p .01	

*p .05
*p .01

the Fmax test statistic from the Hartley Fmax test for the homogeneity⁸² is shown in Column Eight, along with the significance level. The final column indicates whether the difference in the variance between the two groups was significant and in the predicted direction, i.e., the variance for the "High" dependence firms had to be lower than that of the "Low" dependence firms.

The results shown in Table 4-8 indicate that 9 of the 17 measures of business strategy differed significantly between the two groups. Recalling that the level of significance specified for the analysis was .05, does the overall pattern of significant findings indicate support for the hypothesis? That is, with an alpha equal to .05 and 17 measures of strategy, one of the findings would be significant by chance alone. To determine if the results were significant, the binomial probability distribution was used. At a known or specified error rate of .05 with 17 measures, the probability of finding 9 significant results is less than .0001. It was concluded that the two groups were significantly different.

The data from the table also can be assessed according to the general classification scheme provided for evaluating business strategy. The Industry variables assess the firm's strategy concerning general industry trends in two areas - the amount of technological change and the firm's compensation structure compared with other firms in the industry. No significant differences were found in the variances of the two groups for either the technological change or the relative compensation variables $F_{\max} = 1.079$ and 1.280 respectively, $p > .05$). The degree of dependence of firms on major customers did not

seem to affect the extent of change in the products or processes of the firm, nor was there an observed difference in the wage rates relative to others in the industry. The absence of significant variation suggests that there may be homogeneity of strategy among all supplier firms on these industry-wide dimensions.

The second category of strategy measures were the Product competition variables, which are often critical to the firm's business strategy. Competitive activities in the market often influence the firm's performance. For this category of business strategy variables, the findings were significant. Firms with greater levels of dependence exhibited less variance and therefore greater homogeneity in their strategic behavior than those with lower levels of dependence for two of the three measures of product competition: the relative prices of the firm's goods (Variance High = .44, Variance - Low = .92, $F_{max} = 2.091$, $p < .05$) and the firm's relative market share (Variance - High = 119.67, Variance - Low = 242.71, $F_{max} = .028$, $p < .05$). The variance in product quality average relative to competitors was lower for the high dependence firms suggesting less homogeneity than for the low dependence firms (67.67 versus 106.63), but this was not statistically significant ($F_{max} = 1.578$, $p > .05$). For two of the three product competition variables, results indicated that firms with high levels of dependence have greater homogeneity in their product competition strategies than those with low levels of dependence.

This pattern of results was reversed for those variables associated with a firm's Research and Development (R&D) business strategies, particularly for those variables associated with product

research and development. Firms with a high level of dependence on the auto industry indicated much greater variation in the percentage of their total sales represented by products developed or introduced within the last five years than firms with low dependence (Variance - High = 538.89, Variance - Low = 202.60, max = 2.660, $p < .01$). Similarly, supplier firms with high dependence indicated more variance in the amount of funds spent on product R & D efforts than firms with low dependence (Variance - High = 25.08, Variance - Low = 2.17, max = 2.341, $p < .01$). The difference in expenditures on attempts to improve the production processes through process R & D was not significant (Variance - high = 3.11, Variance - Low = 3.07, Fmax = 1.013, $p > .05$). For this category of business strategy variables, the results tend to refute the research hypothesis.

The third category of business strategy variables concerned the firm's production and investment activities, specifically in working capital in the form of inventory and in fixed capital represented by plant and equipment expenditures. Here the hypothesized pattern of results was found once again for two of the three variables in the category. High dependence supplier firms indicated much less variance and thus greater homogeneity in their investments in inventory than firms with low dependence (Variance - High = 23.61, Variance - Low = 58.80, Fmax = 2.49, $p < .01$). Also, firm's investment activities in plant and equipment as a percentage of their total revenues showed more homogeneity among firms with high dependence than or firms with low dependence levels (Variance - High = 101.76, Variance - Low 310.78, Fmax = 3.054, $p < .01$). The measure of the "newness" of a firm's plant

and equipment -that is, the extent to which capital investments are recent - revealed no significant difference between the two groups Variance - High = .03, Variance - Low = .03, $F_{\max} = 1.000$, $p > .05$). The overall pattern of the results for this category and the relative strength of the findings lends moderately strong support to the research hypothesis linking dependence and homogeneity of strategy.

The Efficiency category of business strategy variables was designed to reflect the productivity of the firm's operations. Perhaps the crucial measure in this category was the firm's profit per employee, which measures the firm's net profit as a function of the number of employees. For this variable, the data indicated strong support for the research hypothesis (Variance - High = 15.39, Variance - Low = 52.10, $F_{\max} = 3.385$, $< .01$). This measure reflected several strategic investment and operating decisions, and thus it is significant that the firms which have high dependence exhibited less variation and more homogeneity in their strategic activity than firms with low dependence. Two other variables were also examined in this category. No significant differences were found between the groups in terms of the plant capacity utilization percentage (Variance - high = 322.68, Variance - Low = 298.40, $F_{\max} = 1.081$, $p > .05$), or the sales revenues generated per employee (Variance - high = 2262.78, Variance - Low = 1628.80, $F_{\max} = .389$, $p > .05$). In general, the data from this category offered very limited support for the research hypothesis.

The final category examined strategic resource allocations associated with firms' sales and marketing activities. For this category, the findings were equivocal. Supplier firms with high levels

of dependence exhibited less variation and more homogeneity in their expenditures in support of the sales force than the group of firms with low dependence (Variance - High = 3.50, Variance - Low = 9.96, $F_{\max} = 2.846$, significance $< .01$). However, with respect to firm's expenditures on advertising and sales promotion activities, firms with high dependence indicated greater variation and therefore less homogeneity than low dependence firms (Variance - High = 1.77, Variance - Low = .19, $F_{\max} = 9.316$, significance $< .01$). No difference was found between the two groups in terms of their perceived sales and promotion expenditures relative to their competitors (Variance - high = 1.21, Variance - Low = 1.31, $F_{\max} = 1.083$, significance $> .05$). The pattern of results from this analysis did not support the research hypothesis.

The overall findings from this analysis indicated that the variance for firms with high levels of dependence was lower for six of the seventeen variables in the study, while the opposite occurred for three of the variables measured in the research. Nine out of the seventeen variances between the two groups were significant, which exceeds the number which would be expected by chance (at the .05 level of significance, one of the seventeen differences would be expected to be significant). This suggests that automobile supplier firms with relatively high levels of dependence will exhibit greater homogeneity in their business strategies than firms with lower levels of dependence.

At the level of categorical classification, a similar conclusion was reached. Three out of the six categories of business strategy

activity -Product Competition, Production/Investment, and Efficiency - indicated greater homogeneity for firms with high dependence than for firms with low dependence. One category - R & D - suggested the opposite results, one category - Marketing - was equivocal, and the remaining category -Industry Variables - found no differences in the variance between the groups. The conclusion drawn from this analysis of the results of the study is that auto supplier firms with high levels of dependence on auto manufacturers did, in general, exhibit greater homogeneity in their business strategies than supplier firms which have low levels of dependence on manufacturers. Hypothesis One is supported.

4.7c Hypothesis 2: Uncertainty and Homogeneity of Strategy

The measure of a firm's uncertainty regarding its environment is the total score on the Miles and Snow (1978) Perceived Environmental uncertainty (PEU) scale. Of the 137 firms responding to the survey, valid scores were received from 110. For the auto supplier firms in the sample, the mean score on the PEU was 76.14, and the standard deviation was 14.35. The mean score is marginally lower than the results reported by Miles and Snow (1978). In their initial use of the scale, they examined 27 firms in the food processing industry and 22 firms in the electronics industry. Food processors had a mean PEU score of 82.5 and a standard deviation of 8.95. Electronics firms had a mean score of 80.0 and a standard deviation of 7.40.

Since the sub-group partitioning is based on a single firm attribute - in this case, perceived environmental uncertainty - the firms were divided into sub-groups based on the scores for the variable in question. To accomplish this partitioning, the mean and standard deviation were used to create three groups of approximately equal size. After testing to be certain that the distribution of scores approximated normality, data from a table on the normal distribution indicated that partitioning the firms into three groups of approximately equal size could be accomplished by adding and subtracting .43 standard deviations to the mean score. Applying this partitioning method to the data, Group 1 (the "High" uncertainty group) consisted of firms with a PEU score greater than 82.83 ($N=47$), Group 2 (the "Intermediate" uncertainty group) included firms with a PEU score greater than 70.73 but less than 82.83, and Group 3 (the "Low" uncertainty group) consisted of firms with a PEU score less than 70.73.

The results of the partitioning process yielded two comparison groups. Forty-seven firms were classified as being "high" in perceived environmental uncertainty (PEU). The mean PEU score for firms in this group was 87.89, and the standard deviation was 7.39. Forty-eight firms were designated as low" in perceived environmental uncertainty. The average PEU score for firms in this group was 53.50, and the standard deviation was 13.65. A t-test of the differences between these two means indicated that the two sub-groups were significantly different from one another with respect to their perceived environmental uncertainty ($t = 15.08$, significance $< .001$).

The two groups were analyzed for differences in the mean size of the firms in the groups, the production methods employed, and the products which the firms produce. Results found no differences in the two groups in mean firm size, measured as the number of employees ($t = 1.82$, $p > .05$). Differences in the two groups in production processes and in products manufactured were evaluated using the chi square goodness of fit test. The distribution for production processes and the resulting chi square is presented in Table 4-9. The distribution for products and the chi square test is presented in Table 4-10. The results of the chi square tests indicated no significant differences between the groups for either the production methods (chi square equals 8.235, $p > .05$) or for the products manufactured (chi square equals 9.44, $p > .05$).

Table 4-11 presents the results of the homogeneity of variance test between Group 1, firms with relatively high levels of uncertainty, and Group 3, firms with relatively low levels of perceived environmental uncertainty. The presentation of the data is identical to that in Table 4-8 or firm dependence.

The Hartley Fmax test for homogeneity of variance indicated significant differences for only three of the strategy variables: The product quality average (Variance - High = 103.07, Variance - Low = 33.05, Fmax 3.119, $p < .01$), product R & D expenditures as a percent of sales revenue (Variance - High = 2.56, Variance - Low = 5.39, Fmax = 2.105, $p < .05$), and Media/Advertising expenses as a percent of revenue (Variance - High = 1.74, Variance - Low = .17, Fmax = 10.235, $p < .01$). Two of these three differences were in the opposite direction as that

Table 4-9

Distribution and Frequencies for the Manufacturing
Processes Utilized by the Auto Supplier Firms
in the Sample (Including Chi-square Test)

Hypothesis 2 - Uncertainty:

Manufacturing Process:	High Uncertainty: Frequency	Low Uncertainty: Frequency
Metal Stampings	10	7
Metal Fabrication	5	4
Castings	9	6
Plastics	11	10
Miscellaneous/Unknown	12	21

Chi-square: 8.24, $p > .05$ (n.s.)

Table 4-10

Distribution and Frequencies for the Primary Products
 Manufactured by the Auto Supplier Firms in the
 Sample (Including Chi-square test)

Hypotheses 2 - Uncertainty:

Primary Products:	High Dependence: Frequency	Low Dependence: Frequency
Power Train Components	7	8
Chassis Components	8	3
Auto Body Components	11	7
Electrical Components	9	10
Miscellaneous/Unknown	12	20

Chi-square: 9.44, $p > .05$ (n.s.)

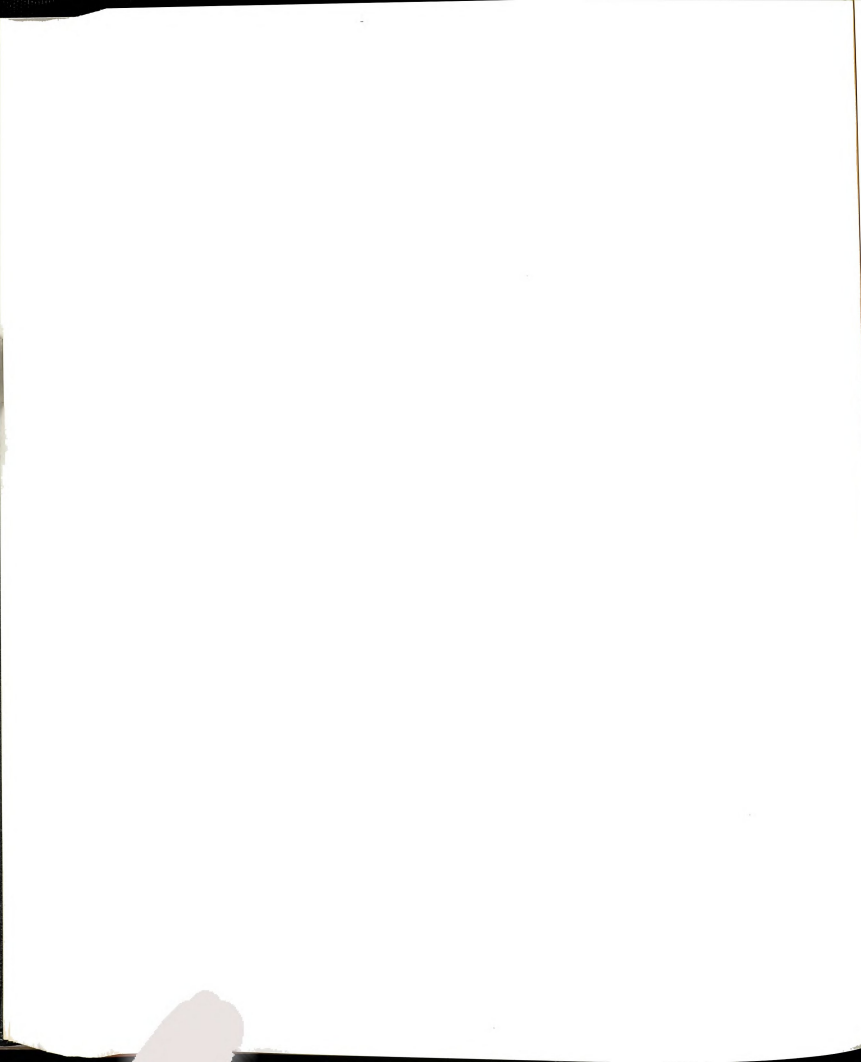


Table 4-11
Homogeneity of Business Strategy: Variance in Business Strategy Variables
as a Function of Perceived Environmental Uncertainty

	High		N	Low		N	Hartley's F _{max}	Hypothesis Supported?
	Mean	Variance		Mean	Variance			
INDEPENDENT VARIABLES: Perceived Environ. Uncert.	87.89	54.62	47	53.50	186.21	48		
DEPENDENT VARIABLES:								
INDUSTRY VARIABLES -								
Technological Change	3.87	1.14	47	3.65	1.22	47	0.847	
Rel. Compensation Avg.	3.21	0.95	47	3.19	0.84	48	1.131	
PRODUCT COMPETITION VARIABLES -								
Product Quality Average	94.93	103.07	43	96.72	33.05	46	3.119*	N
Relative Price	3.13	0.55	47	3.40	0.63	48	1.145	
Market Share	10.00	161.62	36	14.81	152.35	35	1.061	
R&D VARIABLES -								
New Products % of Sales Avg.	20.41	348.79	44	15.44	259.49	47	1.344	
Product R&D/Revenue Average	1.97	2.56	44	1.88	5.39	39	2.105+	Y
Process R&D/Revenue Average	1.87	6.30	42	1.85	5.03	38	1.252	
PRODUCTION/INVESTMENT VARIABLES -								
Inventory/Revenue Average	6.45	38.66	41	8.01	52.33	36	1.354	
Plant & Equip. % of Sales Avg.	0.54	0.03	37	0.57	0.03	30	1.000	
Investment/Revenue Average	23.08	229.02	37	25.65	164.59	34	1.391	
EFFICIENCY VARIABLES -								
Capacity Utilization Average	73.09	362.04	46	74.32	257.29	44	1.407	
Sales/Employee Average	109.47	4289.16	45	99.78	2452.38	46	1.749	
Profit/Employee Average	3.85	33.37	32	5.47	36.99	32	1.108	
MARKETING VARIABLES -								
Sales Force Expense/Revenue Avg.	3.28	3.51	44	2.45	3.48	39	1.009	
Media Adv. & Sales Promo./Revenue	0.47	1.74	44	0.29	0.17	38	10.235*	N
Relative Sales & Promotion Exp.	2.69	1.22	45	2.48	0.92	46	1.326	

*p < .05

*p < .01

suggested by the hypothesis: Product Quality Average and Media Advertising and Sales Promotion expense as a percent of revenue. Firms with high uncertainty indicated greater variance and less homogeneity in business strategy. Within the various categorical classifications of business strategy variables, no pattern was found in the results.

The lack of significant results prompted an additional test of the hypothesis. An attempt was made to partition firms into subgroups using the six sub-scales of the Miles and Snow (1978) Perceived Environmental Uncertainty scale. The results of the cluster analysis yielded 4 clusters of firms. The high uncertainty group ($N = 23$) had a mean PEU score of 87.53; the low uncertainty group ($N = 34$) had a mean PEU of 48.44. The max test of the homogeneity of variance between the two groups did not differ significantly from that obtained from the partitioning based on the total PEU score. Only two strategy variables - Product Quality Average and Product R&D Expenditures as a percentage of firm revenues - indicated moderate differences in the variance. With a .05 significance level, two significant findings among seventeen measures might be anticipated by chance ($p = .1575$). Furthermore, the two significant results were equivocal; the data supported the hypothesis for Product Quality, but refuted the hypothesis for Product R&D expenditure. The results of the sub-scale cluster analysis did not differ from the results obtained using the more parsimonious partitioning method. The hypothesis did not receive support.

The general lack of findings led to the conclusion that there was no difference in the two groups of firms with respect to the homogeneity in business strategy as a function of differences in

perceived environmental uncertainty. The inability to find any conclusive pattern of results and the general lack of significant findings indicated that auto supplier firms with greater levels of perceived environmental uncertainty do not have greater homogeneity in their business strategies than firms with low levels of perceived environmental uncertainty. It was concluded that, for this study, the data did not lend support to Hypothesis Two.

4.7d Hypothesis 3: Professionalism and Homogeneity of Strategy

Of the three measures of professionalism in this study, the first two were based upon characteristics of the firm's CEO career experiences: the number of firms within the industry with which the CEO has been employed, and the number of years the CEO has been employed with firms in the industry. The third measured examines the connectedness and interrelationships of firms within the field via interfirm linkages through the use of common consultants, information sources, education of the CEO, membership in trade and professional associations, and CEO career path. These linkages were summed to get a total interfirm linkages score.

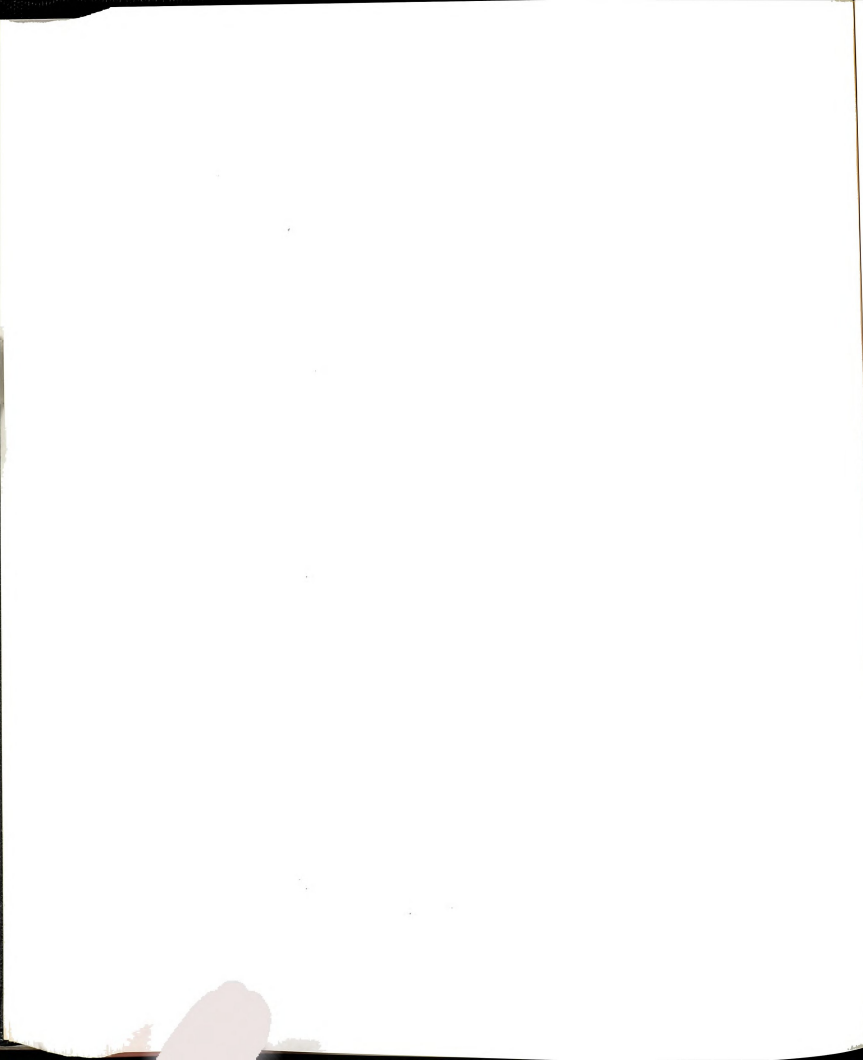
The firms were grouped using a cluster analysis based on the three variables of professionalism. A total of 117 cases were available for clustering; 20 cases were omitted because of missing or incomplete data. The results of the cluster analysis indicated the presence of four groups. The difference in the distance coefficient from the four cluster to the three cluster solution was 25.076; for the three cluster

to the two cluster solution the difference in the distance coefficient was 180.505. The magnitude of these measures suggested that three was the most reasonable number of clusters to be obtained from the analysis. This was further supported using the decision heuristic presented in Aldenderfer and Blashfield (1984). The results of this analysis are shown in Figure 4-4, which resembles that presented in Figure 4-3. The curve flattens out at the three cluster solution, indicating that three clusters would be the optimum solution.

Mojena's Rule One was also applied to the fusion coefficients from this clustering procedure. The Alpha for determining the stopping level was 159.52. Based on the differences in the fusion coefficients reported, Rule One suggests that the three cluster solution is optimal.

Cluster 1 (N=46) was composed of firms with a high level of CEO experience, both in the number of firms with which the CEO has been employed (2.33) and industry tenure (18.57), and a high average number of linkages among firms (243.85). Cluster 2 (N=21) included firms with a moderate level of CEO experience (number of firms = 1.19, number of years = 6.05) and a moderate number of interfirm linkages (172.95). Cluster 3 (N=50) contained firms with a moderate level of CEO experience (firms = 1.60, years = 16.20) and a low number of linkages among firms (98.62).

Based on the levels of professionalism identified within the groups, the "High Professionalism" group, Cluster 1, was compared with cluster 3, representing groups with "Low Professionalism." The results of the cluster partitioning are given in Table 4-12. A t-test of the



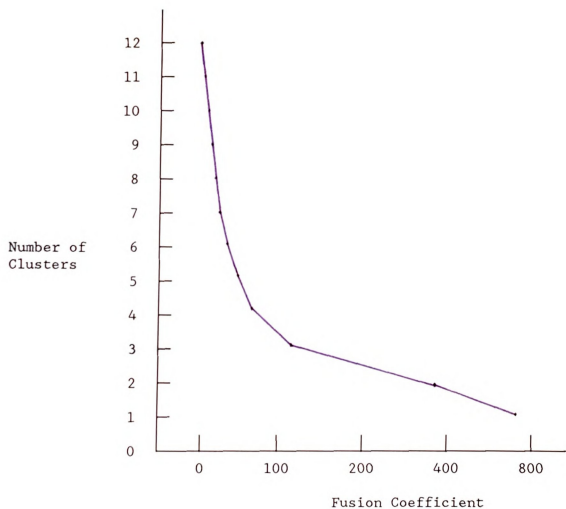


Figure 4-4

Plot of the Number of Clusters versus the Fusion Coefficient, Ward's Method Solution of the Firm Professionalism Data Set

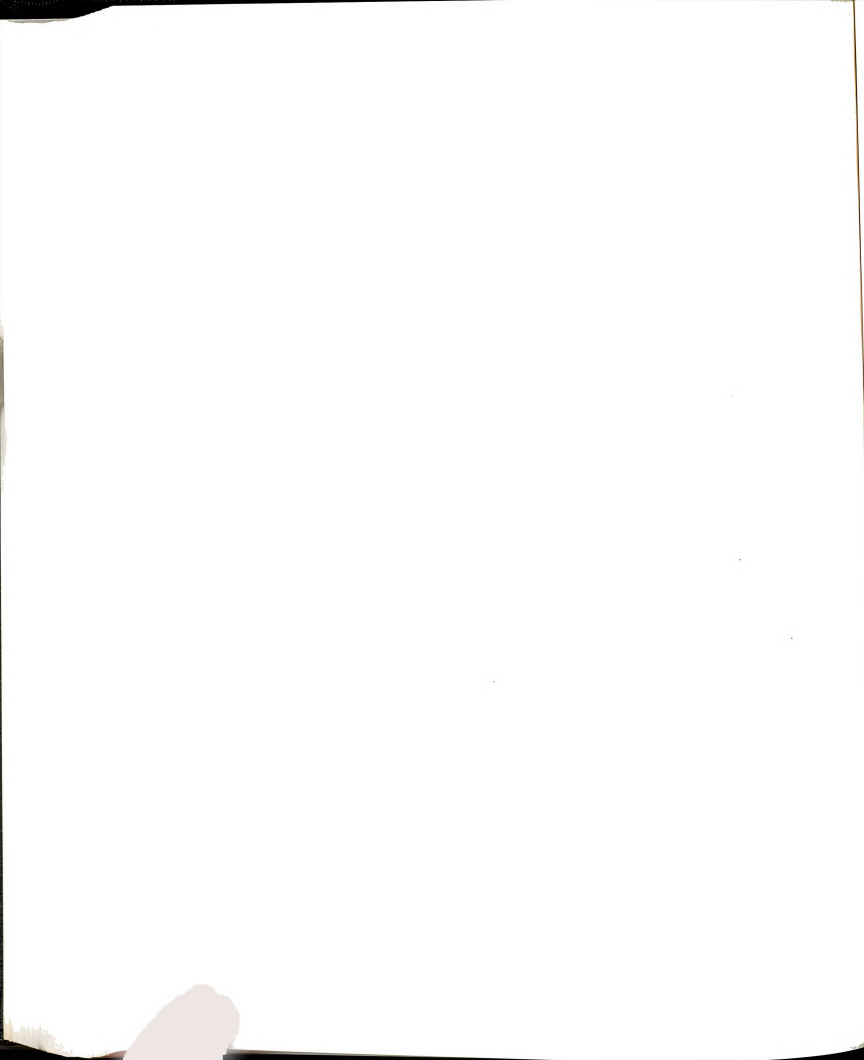


Table 4-12

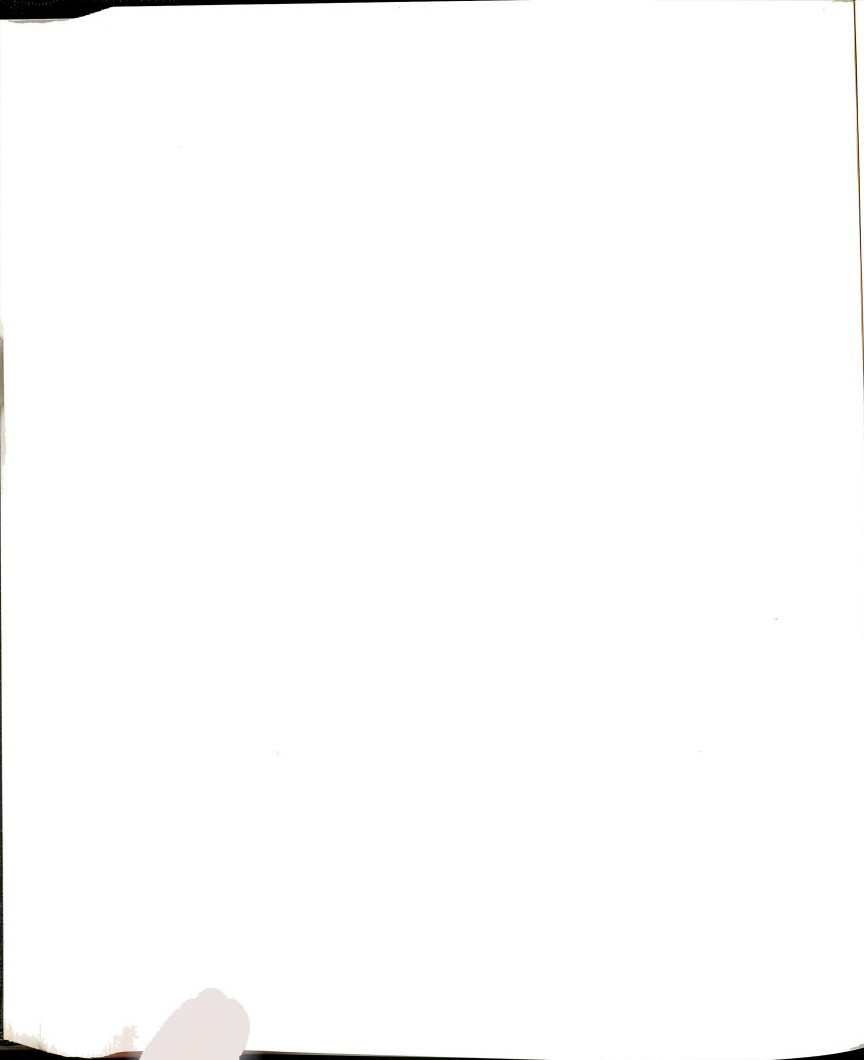
Means, Standard Deviations, and t-tests of the Difference
in the Analytic Clusters of Auto Supplier Firms
in the Study

Hypothesis 3 - Professionalism:

	High Professionalism Cluster 1	Intermediate Professionalism Cluster 2	Low Professionalism Cluster 3
Cluster Size	46	21	50
CEO Experience - Number of Firms	2.30	1.19	1.60
Employed - Means:	2.35	1.17	1.52
CEO Tenure - Years - Mean:	18.57	16.05	16.20
Standard Dev.:	11.07	7.35	12.36
Professional Linkages Among Firms - Mean	243.85	172.95	98.62
Standard Dev.:	47.71	11.14	41.91

t-tests:

Cluster 1 v. Cluster 3 - CEO Experience:	t = 1.75, p < .05
Cluster 1 v. Cluster 3 - CEO Tenure:	t = 0.98, p < .05 (n.s.)
Cluster 1 v. Cluster 3 - Linkages:	t = 15.70, p < .01
Cluster 1 v. Cluster 2 - CEO Experience:	t = 2.02, p < .05
Cluster 1 v. Cluster 2 - CEO Tenure:	t = 0.94, p < .05 (n.s.)
Cluster 1 v. Cluster 2 - Linkages:	t = 6.63, p < .001
Cluster 2 v. Cluster 3 - CEO Experience:	t = 1.09, p < .05 (n.s.)
Cluster 2 v. Cluster 3 - CEO Tenure:	t = 0.05, p < .05 (n.s.)
Cluster 2 v. Cluster 3 - Linkages:	t = 7.67, p < .001



differences in the measures of professionalism was performed. Results indicated that the comparison groups differed significantly in both the number of firms with which the CEOs were employed ($t = 1.75, p < .05$) and the number of firm linkages ($t = 15.70, p < .01$). The difference in tenure was not significant ($t = .98, p > .05$). Additional differences were noted between the high and the intermediate and the intermediate and the low professionalism groups in the number of interfirm linkages, and the difference in the number of firms employed was also significant between the high and the intermediate group. As discussed by Balshfield and Aldenderfer (1984), the significant differences in the cluster variables for the comparison groups tend to validate the obtained solution.

The two groups were compared to determine if differences existed in the size of the firms in the groups, the manufacturing processes used, and the products produced by the firms. Average firm size was not significantly different ($t = .585, p > .10$). Table 4-13 presents the distribution of manufacturing processes and the results of the chi square goodness-of-fit test to determine if the distributions differed. The results indicated that the two groups did not differ on this dimension (chi square equals .21, $p > .05$). Table 4-14 presents the distribution of the products manufactured by the firms and the chi square test to determine if significant differences existed between the two comparison groups. The data indicated that there was no difference between the groups on this dimension (chi square equals 6.456, $p > .05$).

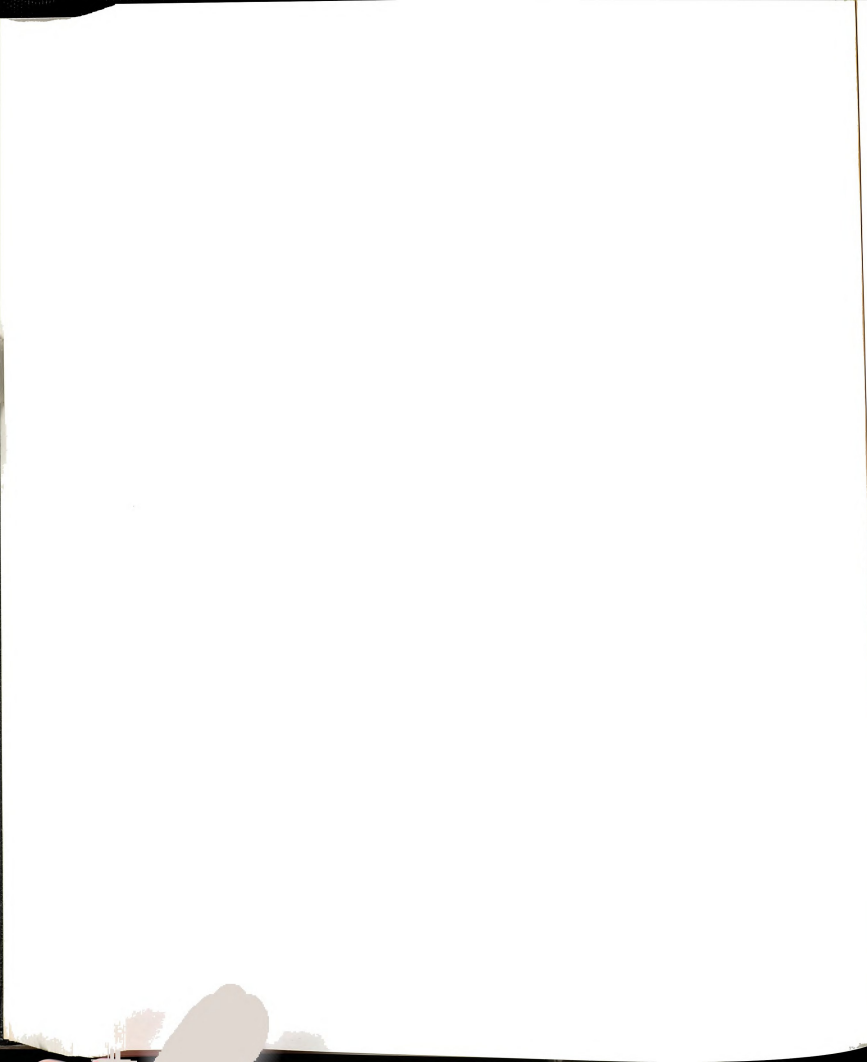


Table 4-13

Distribution and Frequencies for the Manufacturing Processes
Utilized by the Auto Supplier Firms in the Sample
(Including Chi-square test)

Hypothesis 3 - Professionalism:

Manufacturing Process:	High Professionalism: Frequency	Low Professionalism: Frequency
Metal Stampings	8	8
Metal Fabrication	6	4
Castings	8	8
Plastics	8	13
Miscellaneous/Unknown	16	17

Chi-square: 3.21, $p > .05$ (n.s.)

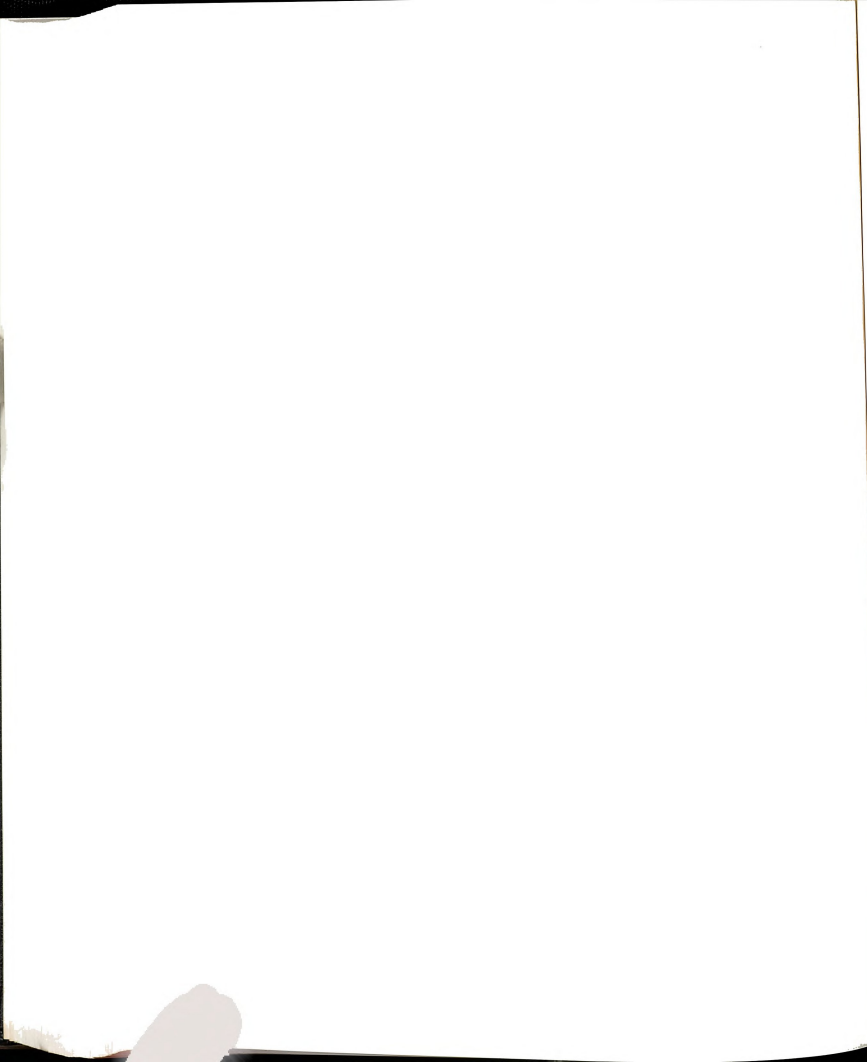


Table 4-14

Distribution and Frequencies for the Primary Products
 Manufactured by the Auto Supplier Firms in the Study
 (Including Chi-square test)

Hypothesis 3 - Professionalism:

Primary Products:	High Professionalism: Frequency	Low Professionalism: Frequency
Power Train Components	8	6
Chassis Components	8	4
Auto Body Components	8	11
Electrical Components	8	11
Miscellaneous/Unknown	14	18

Chi-square: 6.46, $p > .05$ (n.s.)

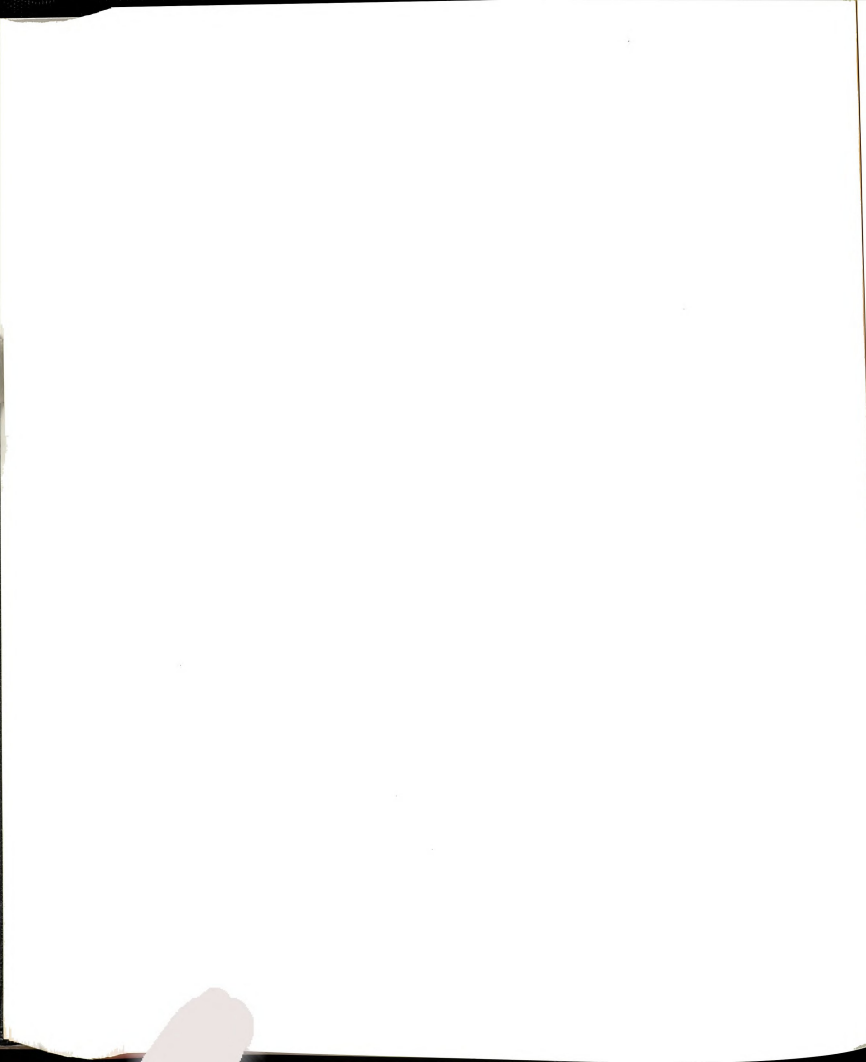


Table 4-15 gives the results of the test of homogeneity of variance for the two clusters of firms. The format is identical to that used previously. The data indicated that firms in the cluster identified as having relatively "High Professionalism" had less variance and therefore greater homogeneity in seven of the seventeen business strategy variables. In three instances, the differences in the variance were in the opposite direction from that predicted by the hypothesis, with high professionalism firms having less homogeneity in strategy. To determine if the results were significant, the binomial probability distribution was used. At a known or specified error rate of .05 with 17 measures, the probability of finding 10 significant results is remote ($p < .0001$). It was concluded that there were significant differences in the variances between the two groups.

Analysis of the data indicated several interesting results. Similar to the dependence analysis, Industry Variables of Technological Change (Variance - High = 1.06, Variance - Low = 1.25, $F_{max} = 1.179$, $p > .05$) and relative Compensation - that is, wages relative to competitors (Variance High = .84, Variance - Low = 1.10, $p > .05$) - yielded no significant results. Firms with high levels of professional linkages did not have less variation in these business strategy variables than firms with low levels of professional linkages, suggesting homogeneity across all firms in the industry for this dimension.

The findings for Product Competition variables differed greatly from the pattern found in the previous dependence analysis. The variables of Relative Price and Market Share were not found to differ

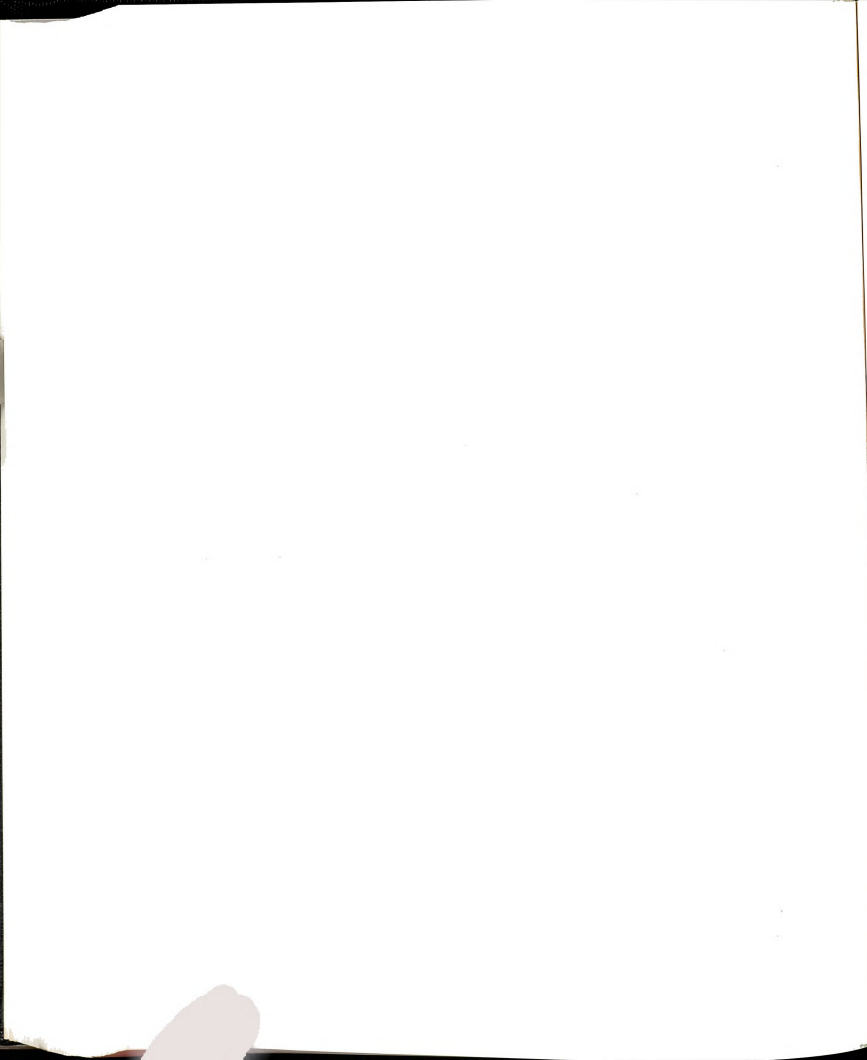
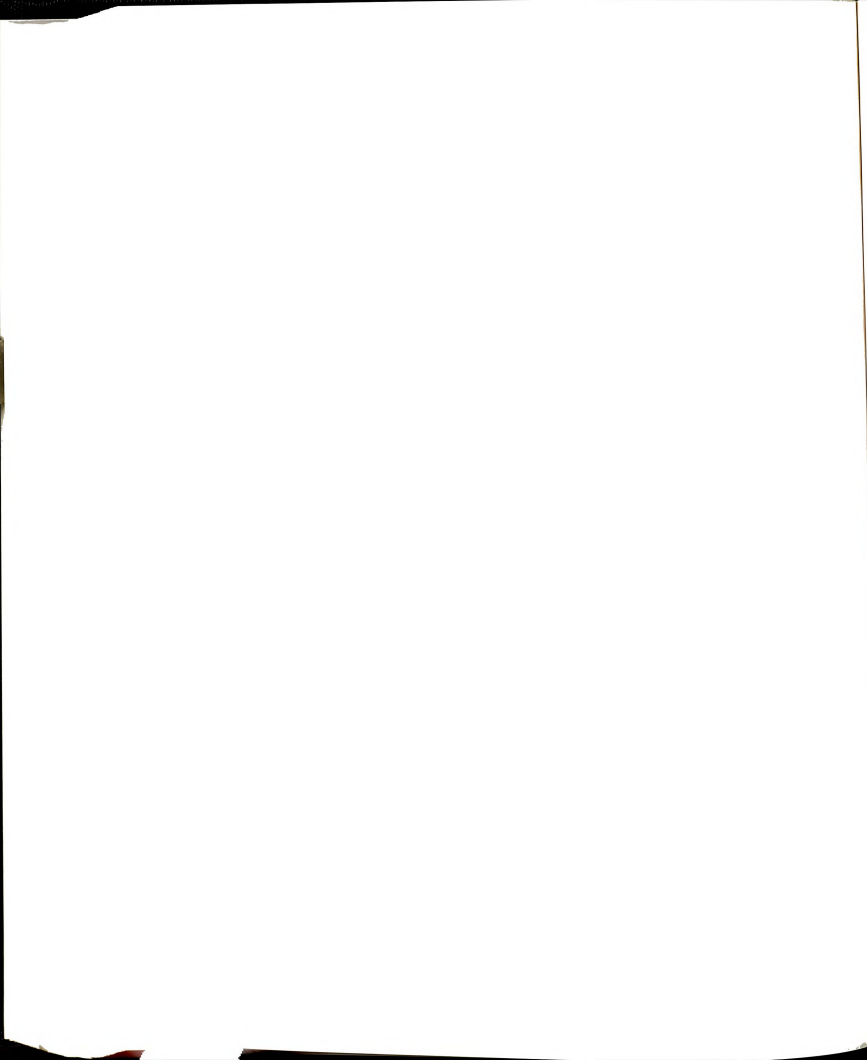


Table 4-15
Homogeneity of Business Strategy: Variance in Business Strategy Variables
as a Function of Professionalism

	High		Low	F _{max}	Hartley's Hypothesis Supported?
	Mean	Variance	Mean	Variance	N
INDEPENDENT VARIABLES:					
Experience: No. of Firms	2.30	5.51	1.60	2.32	50
Experience: No. of Years	18.57	122.65	16.20	152.69	50
Interfirm Linkages	243.85	2276.22	98.62	1756.32	50
DEPENDENT VARIABLES:					
INDUSTRY VARIABLES -					
Technological Change	3.97	1.06	3.69	1.25	48
Rel. Compensation Avg.	3.50	0.84	3.20	1.10	50
PRODUCT COMPETITION VARIABLES -					
Product Quality Average	93.78	136.27	96.78	26.30	49
Relative Price	3.22	0.62	3.52	0.70	50
Market Share	11.57	181.94	14.42	152.71	32
R&D VARIABLES -					
New Products, % of Sales Avg.	25.54	496.23	12.90	124.81	48
Product R&D/Revenue Average	1.90	1.88	1.92	4.27	44
Process R&D/Revenue Average	1.66	1.68	1.61	4.11	42
PRODUCTION/INVESTMENT VARIABLES -					
Inventory/Revenue Average	5.05	17.46	8.73	55.11	42
P & E Newness Average	0.57	0.04	0.57	0.03	36
Investment/Revenue Average	22.91	149.39	25.85	308.40	38
EFFICIENCY VARIABLES -					
Capacity Utilization Average	79.52	203.08	68.98	274.20	45
Sales/Employee Average	110.83	1870.13	97.65	4622.47	49
Profit/Employee Average	4.43	13.04	4.58	38.09	35
MARKETING VARIABLES -					
Sales Force Expense/Revenue Avg.	3.03	10.38	3.35	3.59	43
Media Adv. & Sales Promo./Revenue	0.23	0.10	0.40	0.24	43
Relative Sales & Promotion Exp.	2.82	1.29	2.60	1.14	50

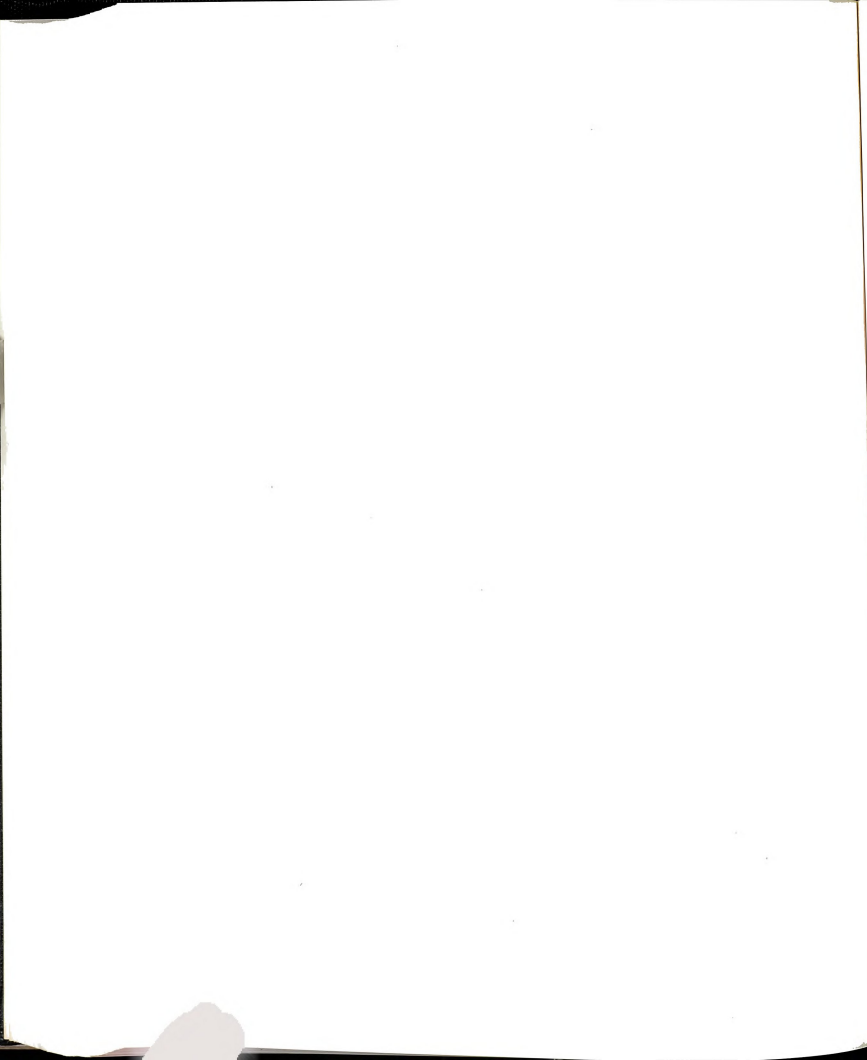
*p < .05

**p < .01



significantly from one another in variance (Relative Price: Variance - High = .62, Variance - Low = .70, $F_{max} = 1.129$, $p > .05$. Market Share: Variance - High = 181.94, Variance - Low = 152.71, $F_{max} = 1.191$, $p > .05$). A significant difference in variance was found for Product Quality Average between the two groups, but in the opposite direction than predicted by the hypothesis. Firms with high level of professionalism had greater variance in product quality than firms with low levels of professionalism (Variance - High = 136.27, Variance - Low = 26.30, $F_{max} = 5.181$, $p < .01$). This suggests that firms with high levels of professionalism had less homogeneity in their strategies than firms with low levels of professionalism.

The third category of business strategy variables concerned those associated with a firm's research and development expenditures and new product development. High professional firms demonstrated greater variance - that is, less homogeneity of strategy - in the percentage of sales from new products as compared with those firms designated as low professional (Variance - High = 496.23, Variance - Low = 124.81, $F_{max} = 3.976$, $p < .01$). This is contrary to the prediction of the hypothesis. The variance in actual R & D investment activities, however, was very consistent with the research hypothesis. Firms in the high professional group had less variance and more homogeneity in their R & D expenditures than firms in the low professional group, both in product R & D (Variance - High = 1.88, Variance - Low = 4.27, $F_{max} = .271$, $p < .05$) and in process R & D (Variance - High = 1.68, Variance - Low = 4.11, $F_{max} = 2.446$, $p < .01$). These findings suggest that for investment decisions, that is, the resource deployments of the firm,



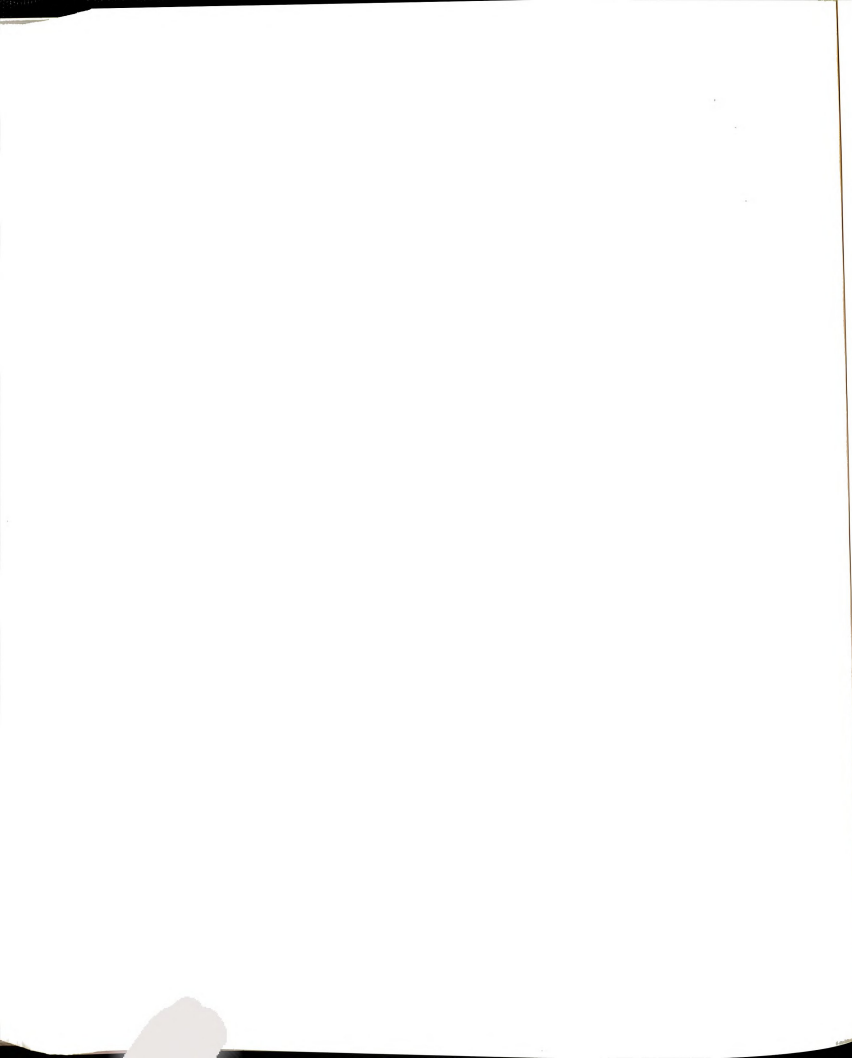
professionalism does reduce the variation in strategy for firms with high professional ties to other firms within the field. Though a similar finding does not hold for firm sales activity, the pattern of the results tended to offer moderate support for the research hypothesis.

Production and Investment variables included those variables which relate to the business strategies involving firm expenditures for capital, specifically fixed capital in the form of plant and equipment and working capital in the form of inventories. For this category, the data indicated results consistent with the research hypothesis. Expenditures or fixed capital, measured as a percentage of the firm's total revenues, show less variation and greater homogeneity of strategy among firms with high levels of professionalism than for firms with low levels of professionalism (Variance - High = 149.39, Variance - Low = 308.40, $F_{max} = 2.064$, $p < .05$). Similarly, investment in inventory as a percentage of total firm revenues exhibited less variation - more homogeneity - in the high professional group as compared with the low professional group (Variance - High = 17.64, Variance - Low = 55.11, $F_{max} = 3.156$, $p < .01$). No significant difference in variance as found for the Plant and Equipment Newness variable between the two groups (Variance - High = .04, Variance - Low = .03, $F_{max} = 1.333$, $p > .05$).

Efficiency variables, those measures of business strategy associated with efficiency, productivity, and firm outcomes, also gave moderately strong support to the hypothesis. Productivity, as measured by the sales revenue per employee, had less variation and more

homogeneity in the high professional group of firms than in the low professional group (Variance - High = 1870.13, Variance - Low = 4622.47, $F_{max} = 2.472$, $p < .01$). The efficiency measure of profits generated per employee also showed the same results Variance - High = 13.04, Variance - Low = 38.09, $F_{max} = 2.921$, $p < .01$). No significant difference in variance was found in capacity utilization for the two groups (Variance - High = 203.08, Variance - Low = 274.20, $F_{max} = .350$, $p > .05$).

The final category of business strategy variables is the marketing Variables. The variables in this group were concerned with marketing expenditures as a percentage of total sales revenues and to firm's perceptions of their marketing and sales expenses compared with competitors. No significant difference was found for the Relative Sales and Promotion Expense variable between the comparison groups (Variance - High = 1.29, Variance - Low = 1.14, $F_{max} = 1.132$, $p > .05$). The variance in Sales Force Expenses as a percentage of firm revenues was greater for firms with high professionalism than for those with low professionalism (Variance - High = 0.38, Variance - Low = 3.59, $F_{max} = 2.891$, $p < .01$). This was in the opposite direction as that predicted by the hypothesis: high professionalism firms had less homogeneity of strategy. However, Media Advertising and Sales promotion expenses as a percentge of firm revenues was in the expected direction: firms with high levels of professional linkages had less variance and greater homogeneity of strategy for this measure of business strategy han firms with low levels of professional linkages (Variance - High = .10, Variance - Low = .24, $F_{max} = 2.400$, $p < .01$). The conclusion drawn



from the data in this category was equivocal - it offered neither support for nor refuted the research hypothesis.

The pattern of results indicated that the significant findings occurred in three categories of strategy variables: R & D variables, Production/Investment variables, and Efficiency variables. This indicated that there were systematic differences in the variances of the two groups. Thus, the overall pattern of results for the categorical classifications of business strategy variables gave moderately strong support for hypothesis 3: firms with greater professionalism exhibited greater homogeneity in their business strategies than those with less professionalism.

4.8 Conclusion

The results of this study provided moderate to strong support for two of the three research hypotheses. Firms with higher levels of dependence and firms with greater levels of professionalization were found to have greater homogeneity in the business strategies which they pursue. The variance for those groups which had relatively higher levels of institutional isomorphic force was significantly less than for those firms with relatively lower levels of isomorphic forces present. Hypothesis two concerning uncertainty was not supported. No significant systematic differences were found in the variances of firms with high versus low levels of perceived environmental uncertainty.

Also, it is noteworthy that for many of the variables, no significant differences were found in the variances between the high

and low levels of institutional forces. In effect, there was homogeneity of strategy across all firms in the sample, not only among those with high levels of institutional isomorphic force. This feature suggests additional questions or discussion and consideration. These questions and other issues suggested by the results of this study will be examined in the following chapter.

The results of this study indicated moderate support for the general model of this research: institutional forces in the environment of organizations will tend to lead to homogeneity in strategy. The strategic behavior of firms with high levels of institutional force exhibited less variation than those firms with lower levels of institutional forces. Specifically, dependence and professionalism were found to be predictive of greater homogeneity in strategic activity. These results suggest that the institutional perspective may be useful as a perspective on the strategic behavior of organizations.

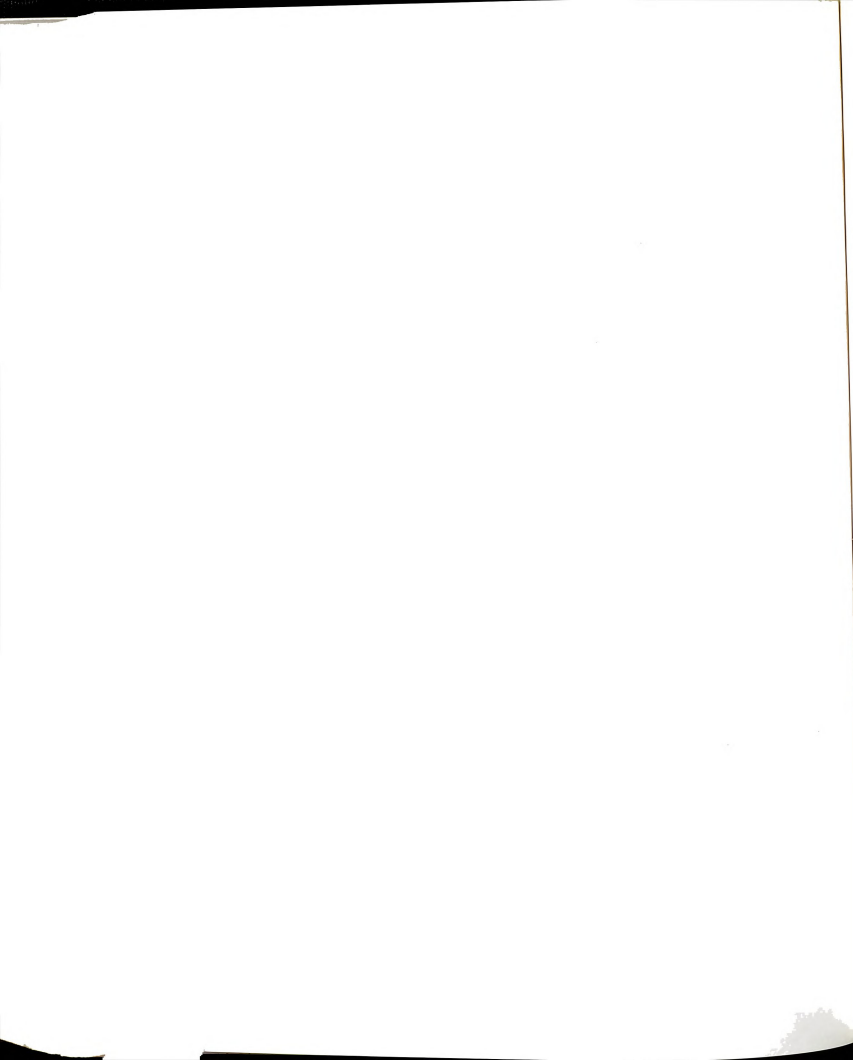
Chapter Five

Discussion of Results, Implications, and Conclusion

5.1 Introduction

The results obtained in this initial research on the relationship among institutional forces and homogeneity of business strategy were not conclusive. However, the data from this study did lend modest support to the basic theory of this research. Auto supplier firms subject to greater levels of institutional isomorphic force in their environment did tend to exhibit greater homogeneity in their business strategies. This is particularly true for those firms that are highly dependent on limited customers or their outputs and for those that have many professional linkages to other firms within the auto supplier industry. Uncertainty in managerial perceptions did not seem to have an effect on homogeneity.

The purpose of this chapter is to discuss the results of the study reported in Chapter Four in the context of the institutional theory presented in Chapter Three. The findings from the survey and the data analysis will be reviewed within the institutional framework. The implications and limitations of the research for institutional theories of organizations and for research on business strategy will be examined. The chapter concludes with a discussion of the potential effects of institutional forces on the practice of business strategy.



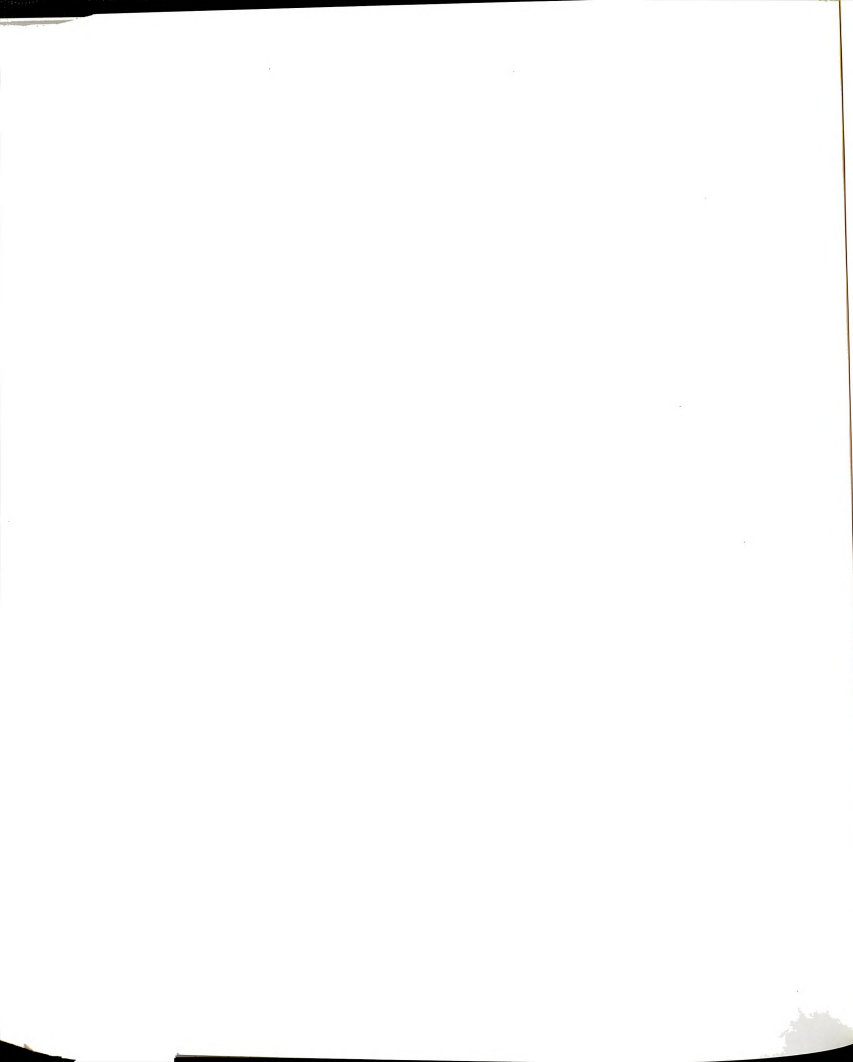
5.2 Institutional Forces for Isomorphism and Homogeneity of Business Strategy

5.2a Coercive Isomorphism and Supplier Dependence

Dependence and Coercive Isomorphism

Hypothesis One suggested that the greater the dependence of a group of organizations on the same group of customers, the greater the homogeneity of business strategy. This would occur because powerful customers are able to coerce similar forms of strategic behavior from relatively powerless suppliers. As patterns of strategic behavior become standardized within the organization field, they take on institutional characteristics. Consistent with Zucker's (1987) definition of institutionalization, strategies may become rule-like or social facts. For example, an original equipment manufacturer (OEM) auto firm, in its role as a customer, may require a supplier to maintain a minimum level of inventory to insure that the customer will not run out of materials or parts. The minimum inventory level is a requirement that affects firm's business strategies, such as the decision regarding the appropriate amount of inventory or "working capital." A business strategy decision is restricted or established by the customer who is able to influence or coerce the supplier into following the prescribed course of action.

The second element of institutionalization, according to Zucker (1987), is the embedding of patterns of behavior in formal structures



of organizations. The strategic behaviors of organizations acquire legitimacy through the formalized behavior of the enterprise. As an example, the contracts between the OEM auto manufacturers and supplier firms often specify payment terms, shipping procedures, quality standards, and many more aspects of supplier behavior. Suppliers may develop specific policies or programs as a response to contractual demands. As these become formalized or "standard operating procedures," they become embedded within the supplier organization and take on institutional qualities.

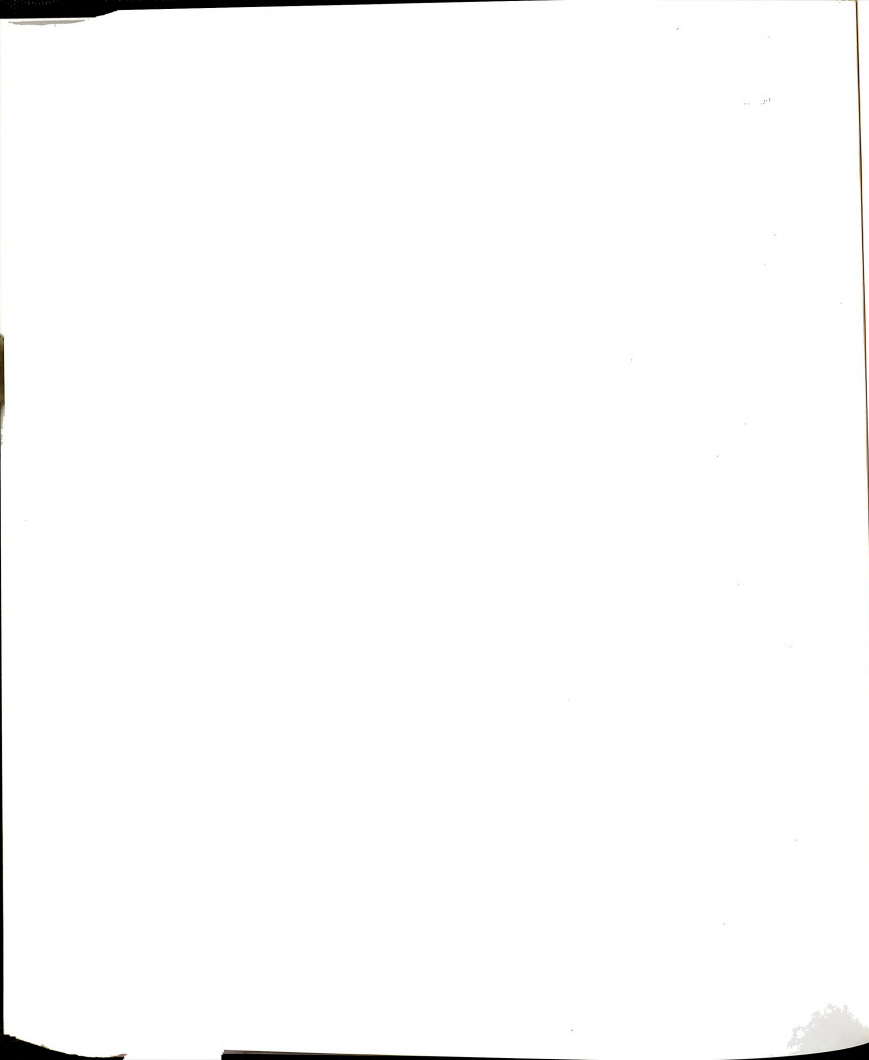
In this research, powerful customers in the form of the OEM auto manufacturers were hypothesized to exert coercive force over their suppliers. Such coercion is a function of the relationships between customers and suppliers. The nature of the relationship affects the degree of dependence of the supplier on the OEM customer. The greater the dependence the greater the coercive force and the more homogeneous the business strategies of the supplier firm.

This research suggested that dependence-power relations operating through the structure of the organization field exert a coercive force or isomorphism on firms within the field. Such coercive pressures for isomorphism lead to greater homogeneity in business strategy among supplier organizations that are more dependent on the same dominant OEM customer firms than among supplier organizations with lower levels of dependence. Coercive forces for isomorphism will tend to be greater when firms are more dependent on customers and when firms are in similar relationships to customers.

Summary of the Research Findings

The data from Table 4-8 indicate the results of the test of hypothesis One concerning the effects of dependence and coercive isomorphism on homogeneity of business strategy. The overall results suggest moderate support for the research hypothesis. Supplier firms with higher levels of dependence on the OEM customers exhibited greater homogeneity of business strategy in six of the seventeen measures. For three of the business strategy measures, results were in the opposite direction as predicted by the hypothesis - the homogeneity in strategy was less among firms with high levels of dependence. For the remaining eight measures, no difference was observed in the homogeneity of strategy between high and low dependence firms, suggesting potential homogeneity among all firms within the industry.

When the measures were classified into categories of business strategy variables as developed by Anderson and Zeithaml (1984), certain patterns in the results were observed. Two of the measures were concerned with broad industry-wide strategic factors: the amount of change in a firm's products or production methods, measured as the degree of Technological change; and a firm's compensation level relative to others in the industry. Though neither of these variables indicated significantly less variance in high dependence firms, the total variance was moderately lower for the high dependence firms. Though not statistically significant, the general direction tends to support the hypothesis of homogeneity of strategy.



Two of the categories of business strategy variables gave somewhat strong support to the hypothesis. The first category consisted of variables that measured supplier's product competition activities. Firms which were more dependent on the OEMs exhibited greater homogeneity in their pricing strategy relative to competitors and in their market share. The second category of business strategy variables to support the hypothesis was the category of Production/Investment variables. This group of variables was concerned with the investment strategies of firms in fixed capital, such as plant and equipment, and investment in working capital, specifically inventory.

A third category of business strategy variables, those associated with operations or Efficiency Variables, offered mild support for the hypothesis. Only one of the three measures in this category yielded a statistically significant difference in the variance between the high and low dependence groups of firms.

The category of business strategy measures that examined firms' Marketing Variables yielded equivocal findings. One of the variables, supported the hypothesis, with high dependence having greater homogeneity. A second variable, refuted the hypothesis, with greater homogeneity observed among firms with lower levels of dependence. The third variable in the category was not significant.

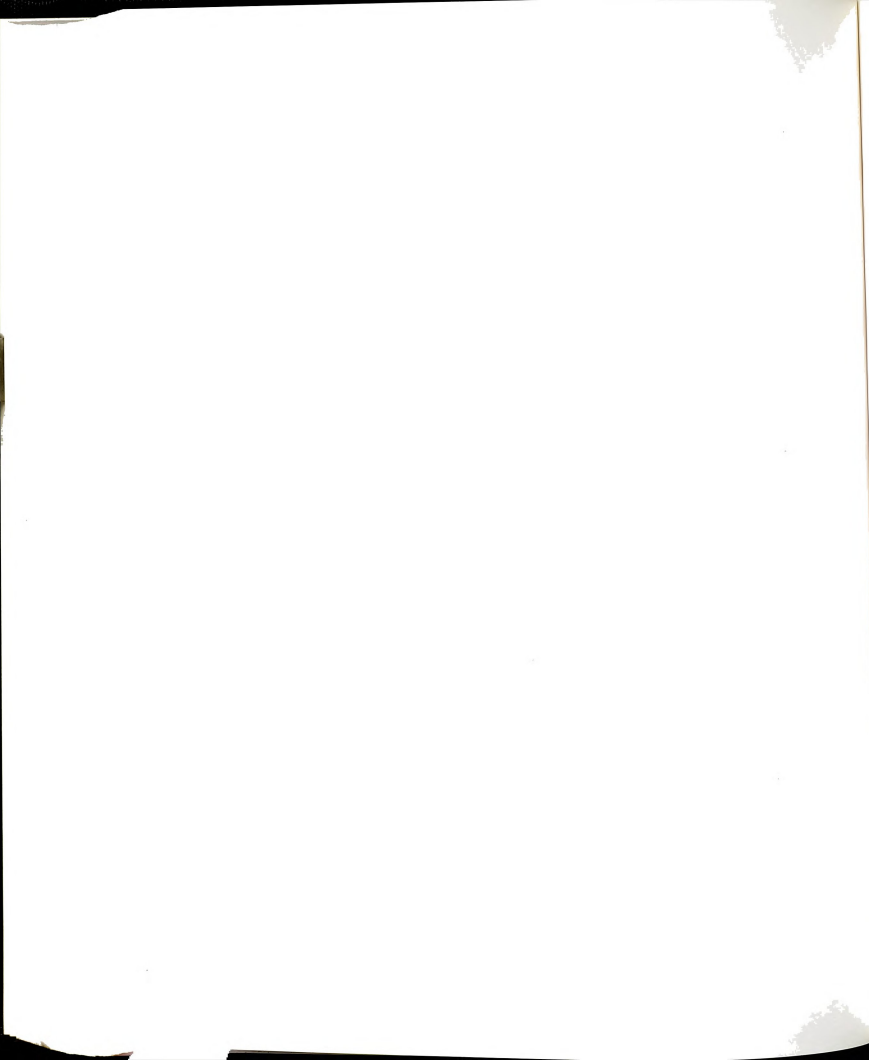
Only the R & D category of strategy variables gave strong evidence opposing the hypothesis. The two variables associated with product research and development, both exhibited greater homogeneity among low dependence suppliers than among high dependence supplier firms. The third variable in the category was not significant.

Examining the results by category, it can be observed that three of the categories offer support for the basic hypothesis of the research, with greater homogeneity of variance found among suppliers with high levels of dependence on the OEMs. These are the Product Competition, Production/Investment, and Efficiency categories of business strategy variables. Only one category of business strategy variables, R&D variables, refuted the hypothesis. One category - Marketing variables - was equivocal, and the final category of Industry variables had no significant results. If business strategy is assessed categorically, the support for the hypothesis is fairly strong.

Discussion: Coercive Isomorphism

The pattern of results is instructive, for it offers insights on certain aspects of institutional theory and coercive isomorphism in particular. DiMaggio and Powell (1983) suggested that coercive isomorphism results from formal and informal pressures which may be felt as "force, as persuasion, or as invitations to join in collusion" (1983:150), or can be "more subtle and less explicit" (1983:151). In effect, they use the term coercion to describe several forms of influencing behaviors. The common theme is influence exerted by a powerful social actor on a less powerful social actor. The amount of power felt by the supplier firm is measured by dependence, consistent with Emerson (1962).

While there are several elements in an auto supplier firm's business strategy, not all may be subject to similar forms coercive

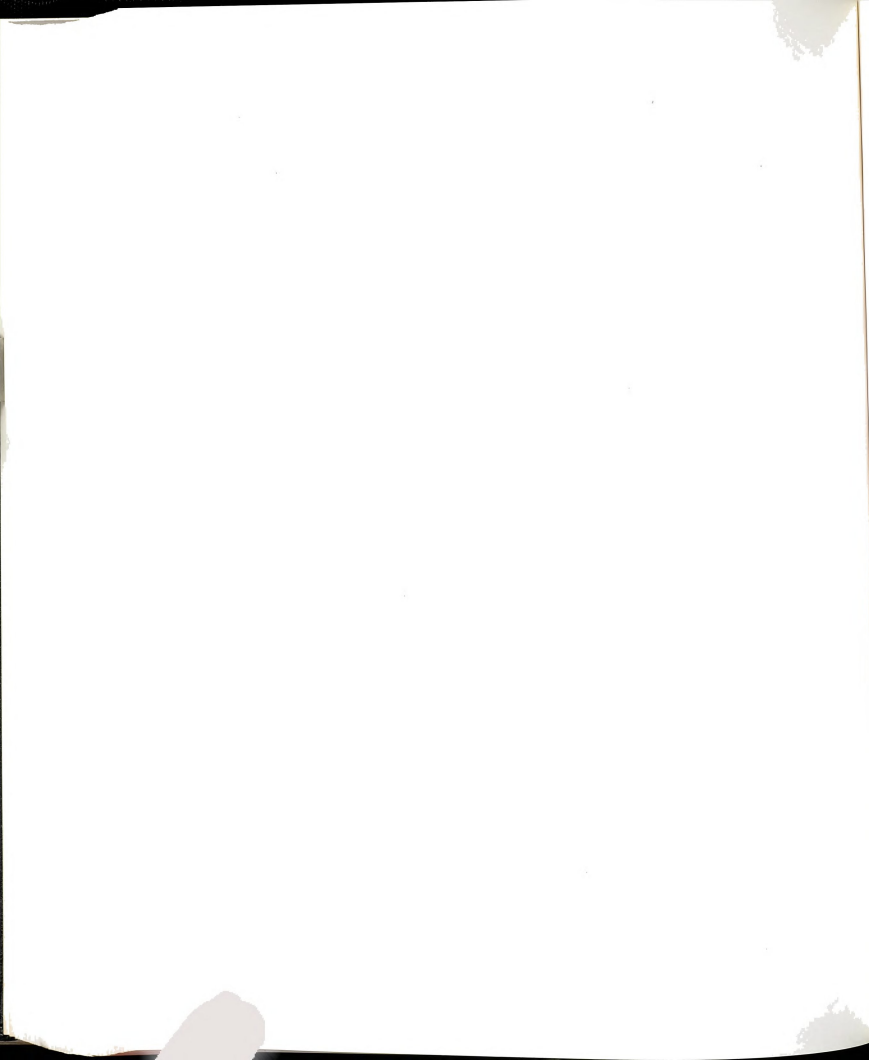


pressure for isomorphism. The coercive force that is brought to bear on firms may be affected by the structure of the field, the relationships among firms, and the characteristics of the actors. For auto suppliers, coercion does not impact all aspects of firms' business strategy. This is evident from the data. However, the data also suggest that coercion may lead to greater homogeneity in behavior among firms with high levels of dependence on the OEM customers.

The resource dependence perspective developed by Pfeffer and Salancik (1978) and Aldrich and Pfeffer (1976) suggests that firms will seek to gain control of critical resources through structural arrangements or through strategic behavior. To understand fully the effects of coercive isomorphism on auto suppliers, it is necessary to examine patterns of homogeneity and the amount of coercive force or pressure brought to bear on suppliers by the OEM customers.

Two issues dominate discussions of the relationships between OEMs and automotive suppliers: the OEMs demand for high quality parts at a low cost. One survey reported in Smith (1989) found that OEM auto manufacturers perceived product price first and product quality second in importance in the criteria used in product sourcing decisions, with 91 percent and 89 percent of the firms selecting these two factors. Product design and development capabilities were fourth, with 16 percent of respondents, and the supplier's product/process technologies were sixth in importance, with only 13 percent.

If this is the case, then it might be expected that the OEMs would choose to exert pressure for conformity in these areas that they perceive to be critical to managing the OEM-supplier dependency



relationship. Thus it might be anticipated that homogeneity in business strategy from coercive pressure for isomorphism would be manifested most in those measures associated with high quality and low costs. This reasoning is supported by the results of this study. Homogeneity occurs in product pricing (Relative price), and the profits earned by high dependent supplier firms (Profit/Employee average). Also, though it is not significant at the .05 level, the variance in product quality is much lower for high dependent firms than for firms with low dependence.

The low prices that customers are able to extract from suppliers lead to indirect coercion in other aspects of suppliers' business strategies. In order to provide parts at the lowest possible cost to the customer and yet retain some measure of profitability, suppliers must in turn lower their operating costs as much as possible, particularly in those areas over which they have some discretionary control. Therefore greater homogeneity is found for the Inventory/Revenue Average variable and the Investment/Revenue Average variable among firms with high dependence. The same pattern can be observed for the Sales Force Expense/Revenue Average variable. As DiMaggio and Powell (1983) suggested, coercion may be both direct and indirect.

The resource dependence perspective also suggests that suppliers will seek to gain control over their environment and key resources. However, the institutional model asserts that such control is limited to those areas in which coercive pressure is absent. Thus it would be expected that supplier firms would seek to differentiate themselves in

strategies that are not subject to coercion by OEM customers. The survey results reported previously in the study by Smith (1989), product development and new product technologies might be expected to be two areas in which suppliers would enjoy some discretion because of the low importance as perceived by the customer.

Again, the results of this study support this reasoning. While auto suppliers may be restricted in several areas by the demands of the OEM customers, in those areas where there is latitude there is greater heterogeneity among high dependence firms. This is particularly in evidence in the area of new product development. Firms with high levels of dependence had significantly less homogeneity of strategy in the introduction of new products - as measured by the New Products, Percent of Sales average variable - and in the investment in continuing product research and development, as measured by the Product R&D/Revenue Average variable. Also the high dependence suppliers had significantly less homogeneity in the Media Advertising and Sales Promotion Expense/Revenue Average strategy measure, perhaps reflecting an attempt to exert counter-influence in the relationship.

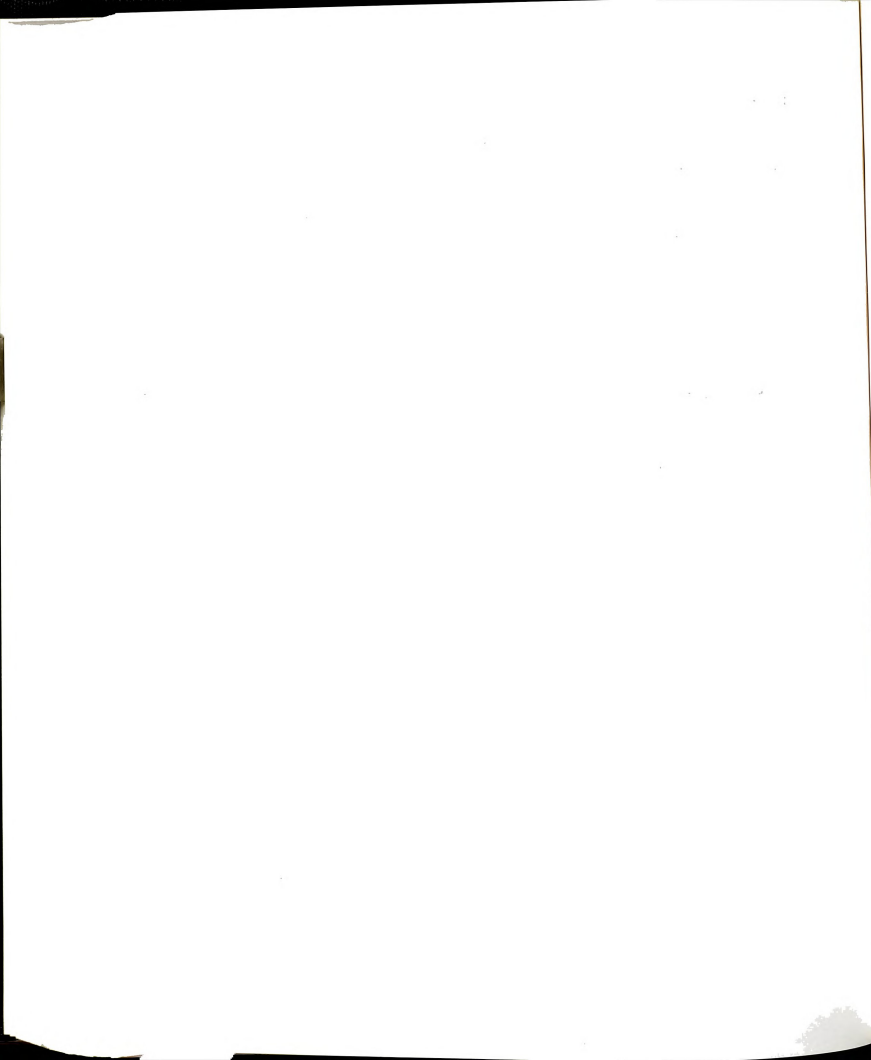
Those measures of strategy lacking significant differences in homogeneity between the high and low dependence groups of supplier firms may be indicative of field-wide homogeneity. That is, all supplier firms within the field pursue similar business strategies in such areas as relative compensation, product quality, and capacity utilization, among others. Such field-wide homogeneity may be due to the ability of the OEMs to coerce strategy from all suppliers without consideration for the degree of dependence. Or, powerful customers may

be able to coerce firms into adopting certain standards that become institutionalized as field- or industry-wide policies. For example, the high importance of product quality perceived by the OEMs may establish a minimum quality standard for all firms in the supplier field. Firms must meet these standards in order to obtain legitimacy in their status as an auto supplier, and thus product quality levels are homogeneous across all firms in the field.

The results of the analysis of dependence and homogeneity of strategy lend support to Hypothesis One of this research. Supplier firms with greater levels of dependence on the OEM auto manufacturers exhibited greater homogeneity in their business strategy than firms with lower levels of dependence. Dominant firms demand homogeneity in strategy from suppliers in areas perceived as crucial by the dominant firm. Occasionally, the dominant firms are able to coerce all organizations within a particular field into pursuing similar strategies, and the entire field appears homogeneous. The effects of dependence, institutionalization, and coercive isomorphism on homogeneity of firm strategy are supported by this study.

5.2b Mimetic Isomorphism and Supplier Uncertainty

The second research hypothesis examined the effects of uncertainty on homogeneity of business strategy. It was hypothesized that firms that experienced high levels of uncertainty in their environment would be more likely to mimic the behaviors of other organizations in the environment. Mimicry can provide a legitimation for organizational



actions, including the strategies which companies pursue. The logic of mimicry asserts that it is acceptable or "correct" in a normative sense to copy the strategies of rivals. Mimicry may be done to reduce a rival's competitive advantage, such as copying a competitor's pricing structure. Or it may be done to legitimate managerial decisions by asserting that a particular course of action is "proper" because it is similar to others within the firm's environment.

The purpose of business strategy is the determination of future courses of action and in the allocation of organization resources to pursue those courses of action. Strategic decisions therefore tend to be made in conditions of uncertainty and ambiguity (Mintzberg et al., 1976) and are often ill-defined (Lyles, 1981). For such problems in strategy, decision-makers may resort to the use of decision heuristics (Tversky and Kahneman, 1974; Barnes, 1984) or to alternative decision-making styles (Fredrickson, 1984). One simplification heuristic or decision-making style can be mimicry of the behavior of other organizations.

Firms seeking a response to environmental uncertainty can formulate a strategy that is modeled after other organizations in the environment. In this research, it was hypothesized that suppliers reporting greater levels of perceived environmental uncertainty would exhibit greater homogeneity of strategy than firms with less perceived uncertainty. Suppliers which perceive their environment to be highly uncertain will seek to overcome the uncertainty by copying the strategies and behaviors of other firms within the organization field.

Summary of the Research Findings

The results of the study did not support the hypothesis. The data in Table 4-11 indicated no significant differences in the variance in the business strategy measures among supplier firms in this study. Only three differences were significant, and of these two were in the opposite direction as predicted by the research hypothesis. In the category of Product Competition variables, the Product Quality Average of firms with high uncertainty showed greater heterogeneity than firms with low uncertainty, contrary to the hypothesis. In the category of Marketing variables, the Media Advertising and Sales Promotion Expense/Revenue Average gave similar results. Only the Product R&D spending/Revenue Average in the R & D variables category was significant and in the predicted direction. Given the significance level of the study of .05, this was not beyond the range of significant findings that would be expected by chance.

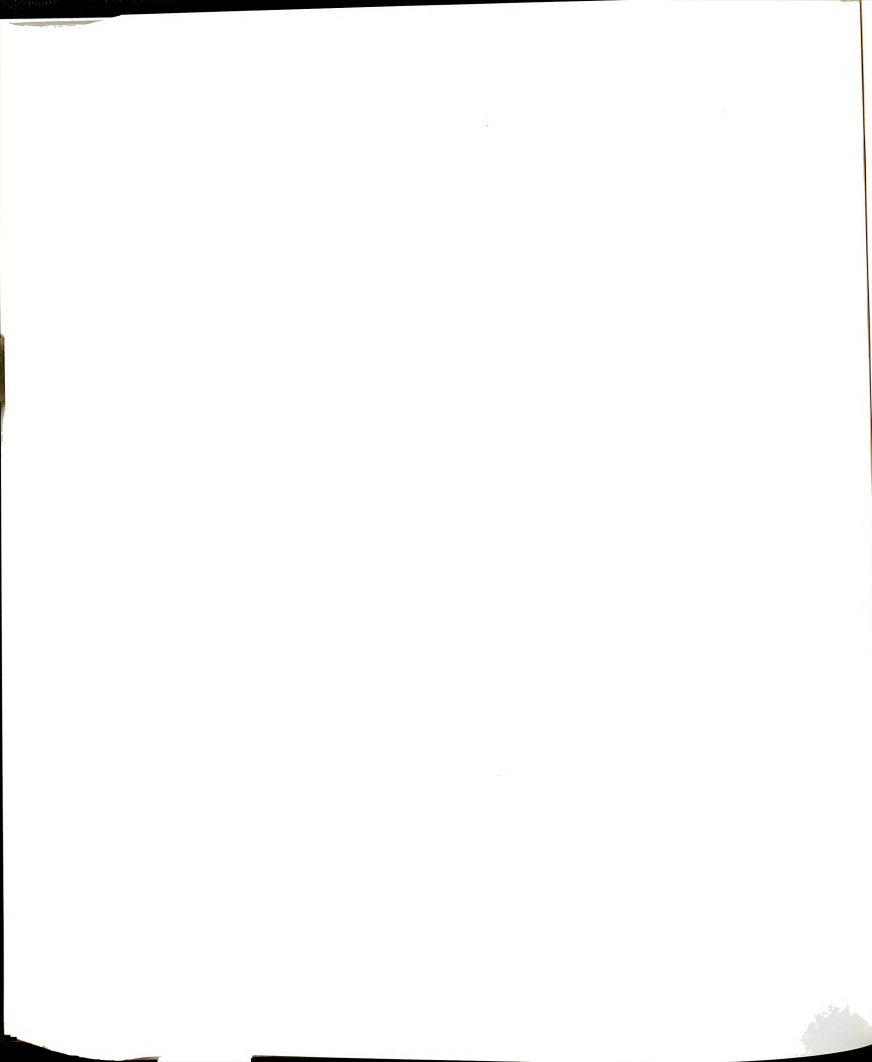
Therefore the conclusion was that for this particular study, no difference existed between firms in the homogeneity of business strategy as a function of perceived environmental uncertainty. It was frequently observed that, though the differences were not statistically significant, the variance in the business strategy measures was greater for firms with high perceived environmental uncertainty than for firms with low perceived uncertainty. This would seem to support an alternative hypothesis that firms confronted with high levels of uncertainty resort to many different strategies in an effort to find some combination that will lead to success. Firms with high perceived

environmental uncertainty experiment, try alternative strategies, and choose different actions. Since they are not certain as to what they should be doing, they will try almost anything.

Discussion: Mimetic Isomorphism

In the theoretical discussion of mimetic isomorphism, DiMaggio and Powell (1983) note that while uncertainty is the force that encourages isomorphism, other structural elements in the organization field may be necessary for mimicry to occur. For instance, mimicry may require the presence of models. These models must not only be present, but information on their strategies and behaviors must be available if firms are to mimic them. Absent any clear models, firms may be left to muddle through as best they can, trying alternative behaviors and proceeding in an incremental fashion (Lindblom, 1959, 1979). Even if models are available, organizations may lack sufficient information about the model's actions to allow them to copy the strategies.

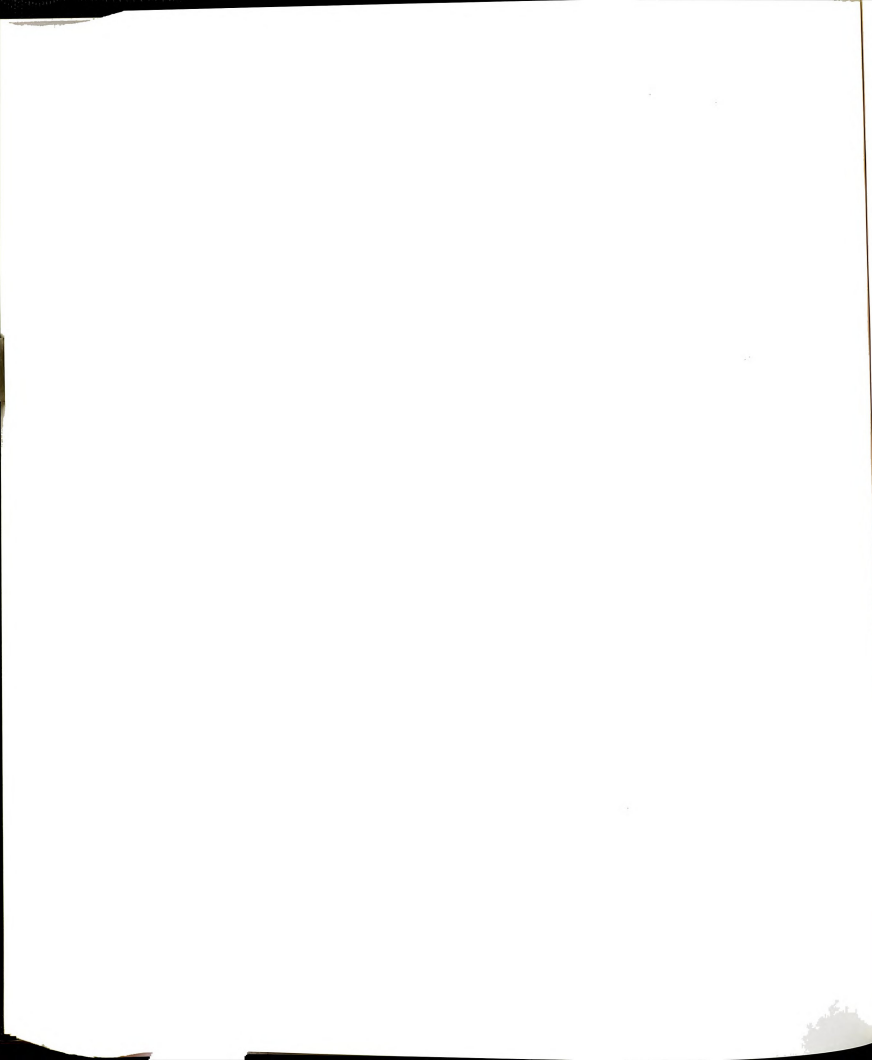
Mimicry may not only require the presence of models in the organization field, but these models may need to be seen as "successful" if their strategies are to be considered for emulation. Firms may not wish to copy the strategies of organizations they believe to be unprofitable or unsuccessful. Also, firms may only seek models which are in some sense similar to themselves. For example, a small auto supplier producing metal stampings with sales revenues of \$10 million per year may find it difficult to mimic the behavior of an automotive electronics supplier with sales of 200 million per year.



The technologies differ, the size of the firm and the available resources differ, and there may be a host of other differences as well. These differences could lead to a perception that the strategies of the potential model are inappropriate for the copying firm.

Therefore, four factors might be necessary if mimicry is to occur in an organizational field. First, there must be models available. second, the models must be seen as "successful," that is, the strategies and behaviors of the model are appropriate for the field environment. Third, the model must be perceived as in some way similar to the potential mimic in order for the strategies to be considered relevant. Fourth, there must be sufficient information available about the model to allow the strategies to be copied by the mimicking firm. Firms cannot copy what they do not know.

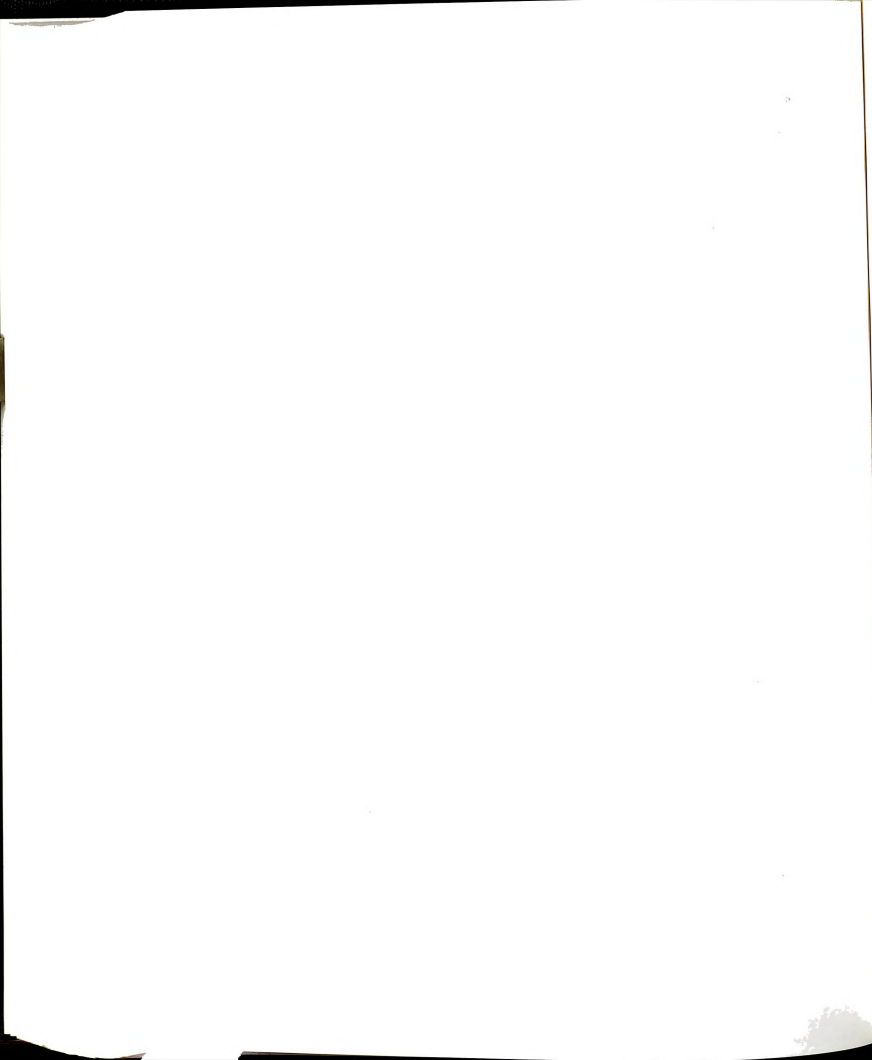
Uncertainty may be in and of itself insufficient as a cause of mimetic isomorphism. Other features of the organization and the field, such as the presence of models and availability of information may be essential for mimicry to occur. This argument has recently been presented in a paper by Galaskiewicz and Wasserman (1989). They suggested that uncertainty may be inherent in certain types of organizational decision, particularly those pertaining to interorganizational relationships. In such interorganizational fields, the presence and structure of social networks may be the mechanism whereby firms engage in mimetic behaviors. They conducted research the charitable contributions of 75 business corporations in the Minneapolis-St. Paul metropolitan area and found that firms having



strong network ties and information-gathering relationships were likely to engage in similar forms of charitable giving.

If their results and the preceding discussion of mimicry and modeling are applied to the present research, it seems that uncertainty may affect homogeneity of business strategy only when there are interorganizational ties present and an available network of information that enables firms to copy others in their field. In effect, there may be an interaction between uncertainty and network relations such that firms with high uncertainty and a high number of linkages with other firms in the organization field would be more likely to engage in mimicry and exhibit homogeneity of strategic behavior than those firms with low network relations.

The results of this study cast some doubt on the uncertainty - mimetic isomorphism relationship. Uncertainty may not be an antecedent condition of mimicry, since firms may be uncertain as to which organizations they should attempt to mimic. If there is a lack of information available about the activities and characteristics of potential models, or if firms are uncertain about the applicability of the potential model to the firm's experience, then mimicry may not occur. Reviewing the data in Table 4-11 it also can be observed that, while the differences were not statistically significant, the variance among firms with high perceived environmental uncertainty was often greater than the variance among firms with low uncertainty. This would tend to support a view that firms confronting highly uncertain environments engage in a wide variety of strategic behaviors in an attempt to find some combination of factors that will prove effective,



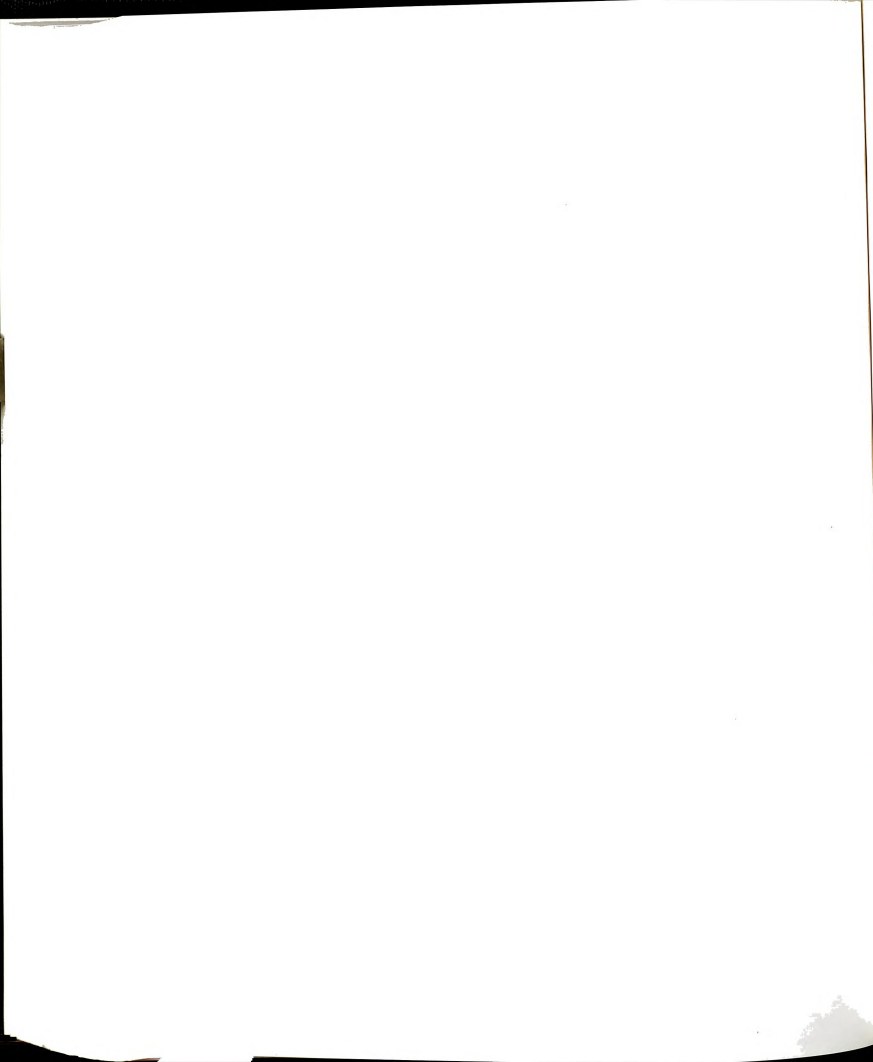
with strategic change proceeding in an incremental fashion (Fredrickson and Mitchell, 1984; Fredrickson, 1984). The uncertainty inherent in the strategic decision-making process can cause firms to "[grope] through a recursive, discontinuous process involving many different steps and a host of dynamic factors over a considerable period of time [before making] a final choice" Mintzberg et al., 1976).

To understand fully the effects of uncertainty and mimetic isomorphism, it may be necessary to determine if there are models available for emulation in the field and the process by which firms identify and select models. Uncertainty may lead firms to search for models as well as alternative strategies in the environment. If firms are uncertain about which organizations they should model or if potential models are appropriate for emulation, mimicry may not occur.

5.2c Normative Isomorphism and Supplier Professionalism

Professionalism and Normative Isomorphism

Normative pressures for isomorphism are due primarily to professionalism. Professional managers, and particularly the senior-level managers of organizations, are able to exert great influence and control over organizational activities and strategy. The increased professionalism among these persons that spans organizational boundaries tends to diffuse knowledge, information, and behaviors. Professional managers in various organizations may exhibit great similarity to counterparts in other firms because of professional



structures. As these individuals rise to positions of power and influence in their respective firms, they take with them professional norms of behavior and practices, which influence the strategies they choose to pursue.

The result of the diffusion of information is the rise of professional norms that become established as industry standards or standard operating procedures. When norms become standardized, they take on the quality of a legitimated social fact and are an integral component of the institutional framework. Professional networks themselves can become institutionalized and become a part of the institutional structure of the organization field itself.

The growth in professionalism and the increase in the diffusion of professional norms in an organization field such as auto industry suppliers will tend to increase the normative pressure for isomorphism. The third hypothesis of this research suggested that increased professional ties or linkages among the key strategy executive - the CEO - in a group of organizations would tend to lead to increased homogeneity in strategy for that group of firms.

Summary of the Research Findings

The results of the data analysis for the third research hypothesis were reported in Table 4-15. In general the data gave fairly strong support to the research hypothesis. Ten of the seventeen measures of business reported differences in the variance between firms in the high professional and low professional groups. Seven of these measures

were consistent with the hypothesis; only three of the measures were contrary to the prediction.

When the variables are analyzed according to the six categories of business strategy variables, the pattern of results is more consistent. Three of the categories give strong support to the research hypothesis. In the category of Production and Investment Variables, two of the three variables exhibited greater homogeneity among the high professional group of firms. In the category of Efficiency Variables, which measure operating performance and associated behaviors, both the Sales/Employee Average and the Profit/Employee Average had greater homogeneity among the high professional firms.

The category of R & D Variables gave more moderate support to the hypothesis. Two of the three variables were more homogeneous among high professional firms, while the third variable in this category was contrary to the research hypothesis, with greater homogeneity found among firms with low professionalism. The Marketing Variables category was equivocal.

Only one of the Product Competition Variables was significant, and it was contrary to the research hypothesis with greater homogeneity in the Product Quality Average strategy measure among firms with low levels of professionalism. Firms with greater number of professional ties may have more information about their competitors quality levels and may be more able to make accurate assessments of their firm's relative product quality, while firms with little knowledge may resort to estimates that conform to industry standards or averages. As with

the Coercive/Dependence hypothesis, the Industry Variables category did not report significant differences in homogeneity.

For this hypothesis, three of the six categories of business strategy variables supported the research hypothesis. One was equivocal, and one was in opposition, while the third yielded no significant findings. The weight of the evidence suggests that increased levels of professionalism through interorganizational linkages via education, tenure, professional experience, trade associations, and other mechanisms leads to increased homogeneity in firms' business strategy.

Discussion: Normative Isomorphism

The results of the research reported in Table 4-15 supported the research hypothesis: firms with greater numbers of professional ties exhibited greater homogeneity of strategy. This professionalism occurred primarily through personnel flows among organizations and through professional networks; the CEO's tenure in the organization did not seem to have a significant effect in the partitioning of firms. It is somewhat interesting that, while the total amount of time spent in the industry did not vary between the two comparison groups, firms in the high professionalism cluster had many more interfirm linkages and had CEOs who had been much more mobile in their career path in terms of the numbers of firms with which they had been employed. It might be hypothesized that the more time a firm or individual spends in an industry or organization field, the greater the number of network ties

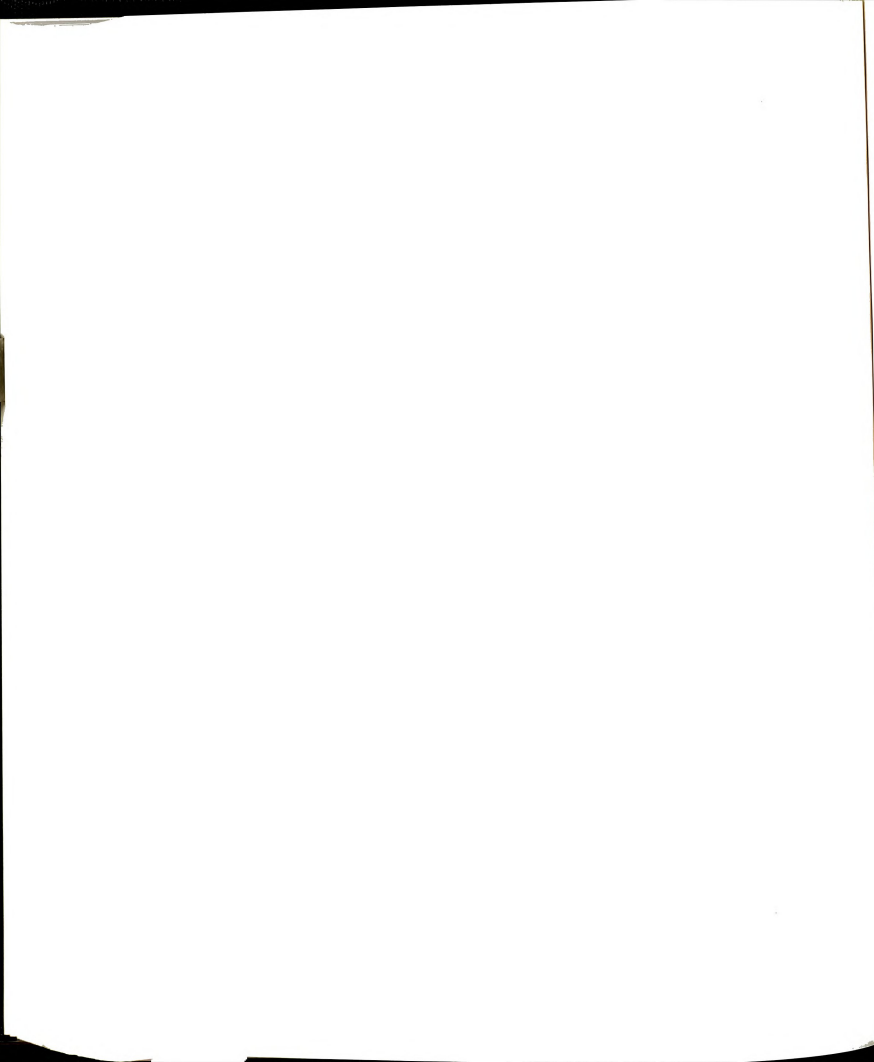


or relations that would develop. This does not appear to be the case in this sample of firms.

The greatest difference in the firms occurred as a result of the number of interfirm linkages. An analysis of the linkages among firms found that most ties occurred through membership in similar trade and industry associations and through shared or common sources of information. Few linkages occurred from similarities in education or in the use of common consultants. It might be suggested that as individuals mature in their careers and rise through the organization, the effects of early education experience and formal training will tend to diminish. By the time an executive becomes a CEO of a supplier firm, the individual will pass through many positions in several organizations and will often have experience in a number of functional areas. This was observed from the CEO's self-reports of career path on the firm survey. As a result, effects of formal education on professionalism may be minimal at the senior levels of the organization and thus its impact on strategy also will be slight.

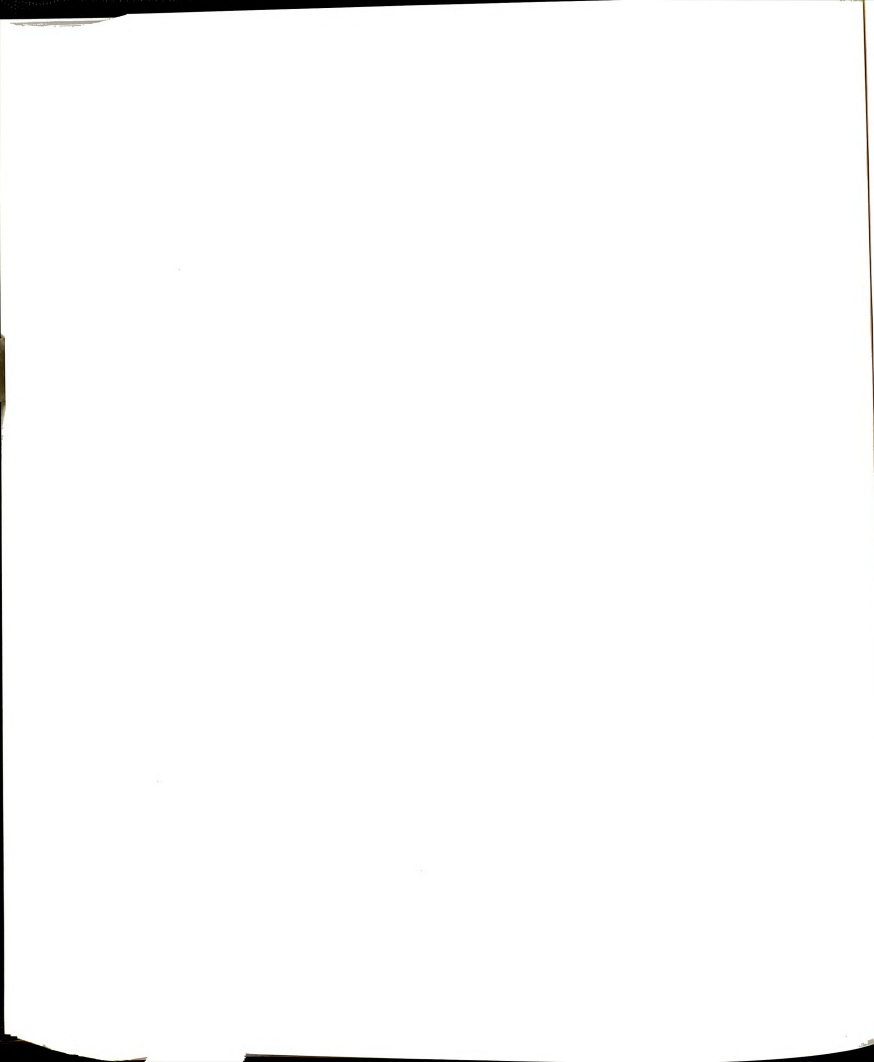
Firms with high professionalism do possess many ties to other firms through industry, trade, and professional associations. In addition, the CEOs reporting in this survey tend to read many of the same professional journals. Their information base thus is relatively homogeneous, and as predicted by the theory, the resulting norms lead to pressure for isomorphism in strategic behavior.

These professional linkages can themselves become institutionalized. Over time, as industries or organizational fields develop, the process of institutional definition or "structuration"



(Giddens, 1979) may be applied to the professional associations within the field. These associations become part of the structure of the field itself, and thus are institutionalized within the field. Professional networks that span organizations can increase interorganizational interactions, represent a well-defined coalition, serve to transmit increased amounts of information, and develop awareness in their members of involvement in a common activity or enterprise.

More than simply the presence of interfirm linkages and professional ties, it is also the structure of the network that might be of interest in assessing the effects of professionalism on homogeneity of strategy. This research examined the number of professional linkages of firms without regard to the nature of the linkage. The concern was with connectedness rather than structural equivalence. Future research should address this by examining the linkages among firms in greater detail, perhaps through the use of blockmodeling (DiMaggio, 1986), through analysis of network structures, or using sociometric techniques. It is clear from the data in this initial preliminary study that there is opportunity to develop more comprehensive models of the effects of professionalism and normative forces or isomorphism on homogeneity of business strategy among firms in organization fields.



5.2d Institutional Forces for Isomorphism and Homogeneity of

Strategy: Integration of Results

The results of the analyses of this research can be integrated as shown in Table 5-1. This table presents a comparison of the results for those mechanisms of institutional isomorphism that indicated positive results, Dependence and Professionalism. The Dependent Variables, the measures of business strategy, are shown in the left-hand column. Note that there is a letter designation that appears after each measure of strategy, either an "O" or an "S." Those variables identified with an "O" are measures that are based on objective data from the firm, usually accounting-based numbers such as sales, inventory, fixed assets, and expenses. Variables identified with an "S" are measures based on a subjective assessment by the CEO, usually of the firm's status relative to competitors. The final two columns indicate whether the results of the analysis for the particular institutional isomorphic mechanism listed at the top of the column supported or refuted the research hypothesis. These have been taken from Tables 4-8 and 4-15 respectively.

In examining the results across institutional isomorphic forces, certain patterns emerge in the data. One such pattern is found in the greater homogeneity observed for those variables associated with production and Investment activities and with Efficiency in operations. The Inventory/Revenue Average, the Investment/Revenue Average, and the Profit/Employee Average all showed greater homogeneity among firms with high institutional isomorphic force. In the auto supplier organization

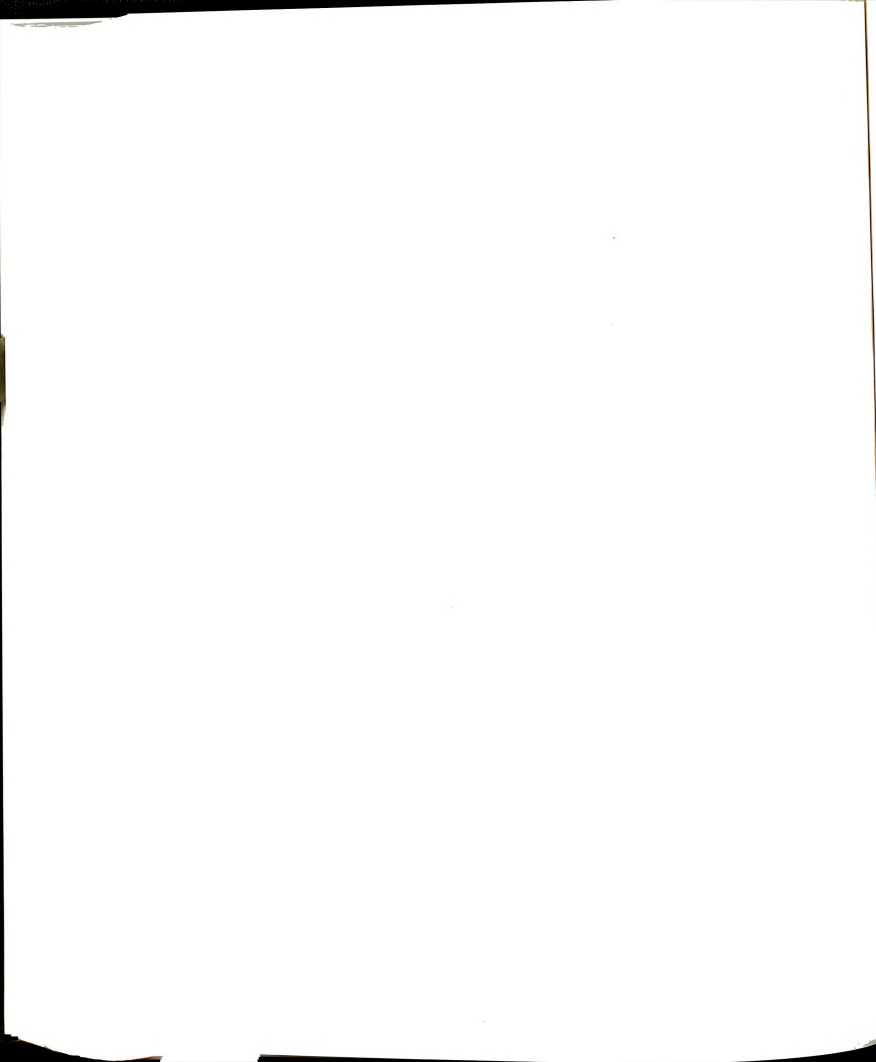
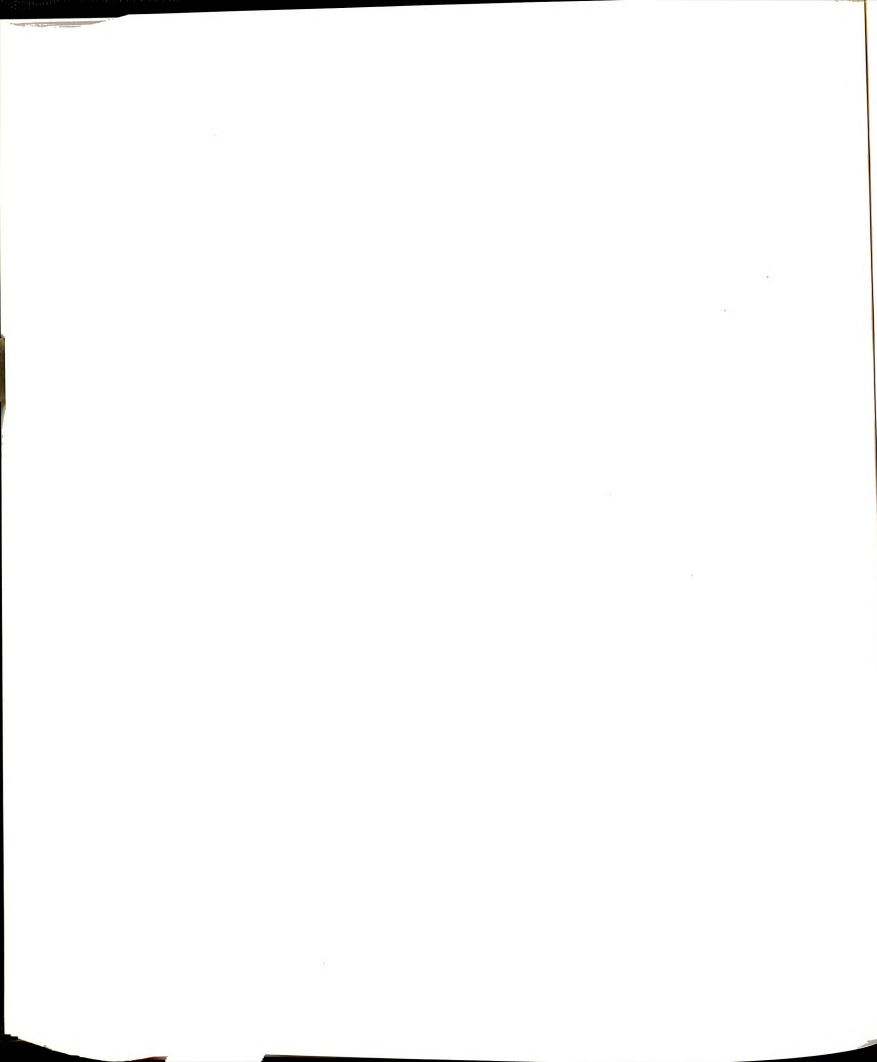


Table 5-1

Comparison of the Results of the Analysis: Homogeneity
of Business Strategy for Two Mechanisms of
Institutional Isomorphism

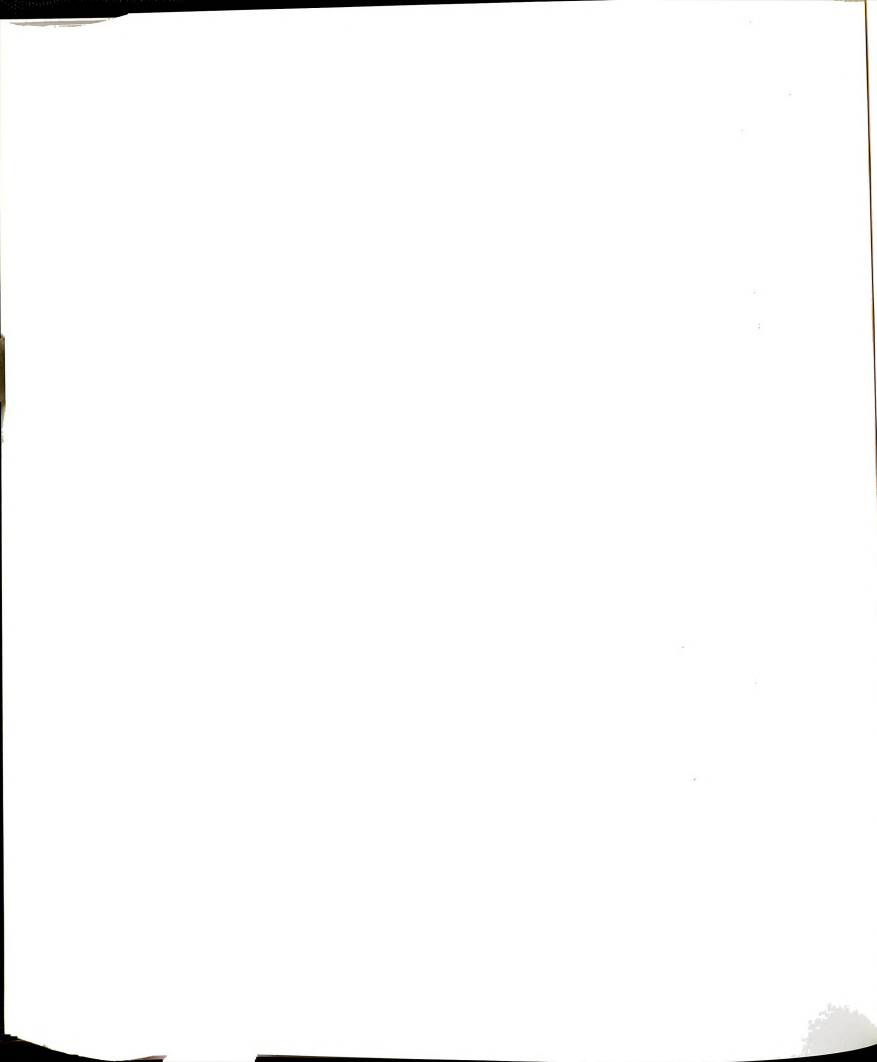
<u>DEPENDENT VARIABLES:</u>	<u>Isomorphic Mechanism</u>	
	DEPENDENCE	PROFESSIONALISM
INDUSTRY VARIABLES -		
Technological Change (S)	-	-
Relative Compensation Average (S)	-	-
PRODUCT COMPETITION VARIABLES -		
Product Quality Average (S)	-	N
Relative Price (S)	Y	-
Market Share (S)	Y	-
R & D VARIABLES -		
New Products, % of Sales Average (S)	N	N
Product R&D Expenses/Revenue Average (O)	N	Y
Process R&D Expenses/Revenue Average (O)	-	Y
PRODUCTION AND INVESTMENT VARIABLES -		
Inventory Expense/Revenue Average (O)	Y	Y
Plant & Equipment Newness Average (O)	-	-
Investment Expense/Revenue Average (O)	Y	Y
EFFICIENCY VARIABLES -		
Capacity Utilization Average (O)	-	-
Sales per Employee Average (O)	-	Y
Profit per Employee Average (O)	Y	Y
MARKETING VARIABLES -		
Sales Force Expense/Revenue Average (O)	Y	N
Media Adv. & Sales Promo./Revenue Ave. (O)	N	Y
Relative Sales & Promotion Expense (S)	-	-



field, there is consistent homogeneity in these aspects of manufacturing and production operations that may be due to the presence of institutional forces. Manufacturing and production activities are frequently the most critical functions within auto supplier firms. It is plausible that institutional forces may have their greatest impact in those areas which are crucial to firm strategies and operations.

The strategy variables associated with Research and development (R & D) activities gave mixed results. The New Products as a Percent of Sales Average was consistent across both studies, but it was in the opposite direction as predicted by the hypothesis: firms with greater levels of institutional forces had less homogeneity for this variable. This might be due in part to the production methods of the OEMs, however. New models tend to be introduced every three to five years in the industry, which requires concomitant changes in the components. The frequency of change in components would lead to higher percentages for those suppliers that are subject to model changeover effects in their production activities. This is a potential topic for future research on this field.

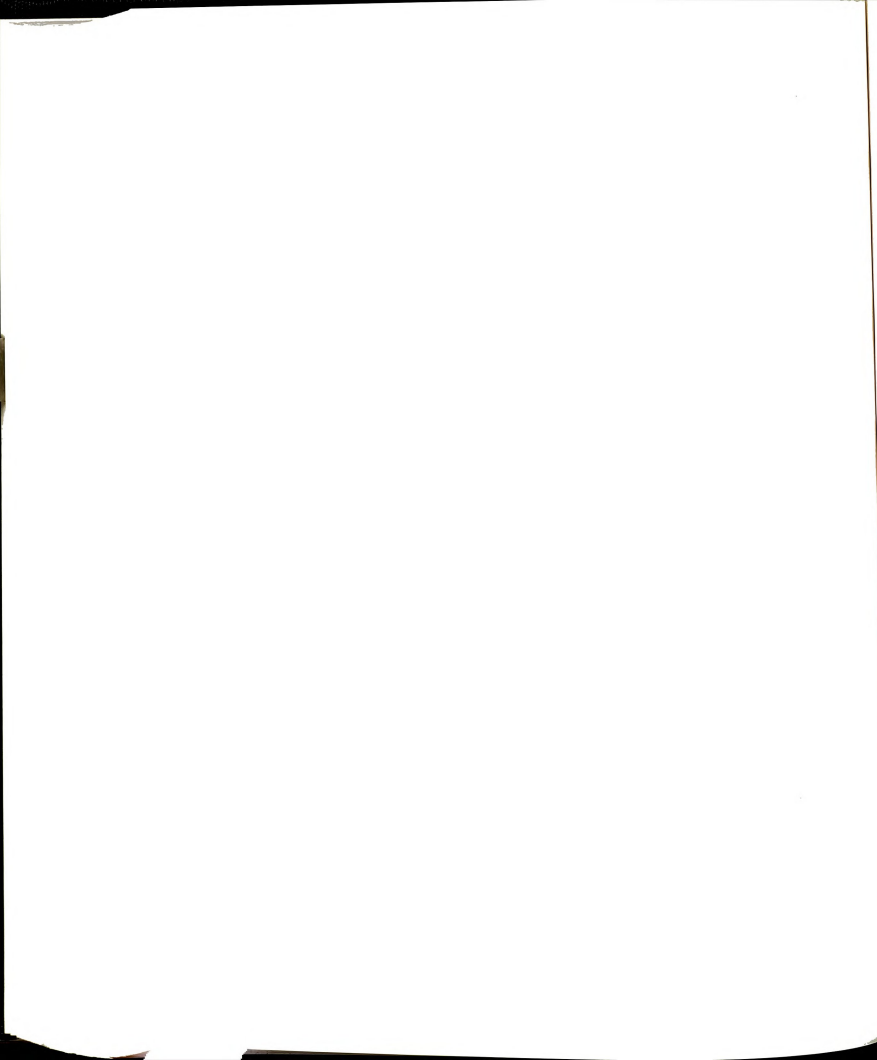
The measures associated with actual expenditures on R & D efforts - the Product R & D/Revenue Average and the Process R & D/Revenue average - indicate differences between the two institutional forces. Firms with high dependence had less homogeneity than low dependence firms in product R & D expenditures, and no differences were observed among high and low dependence firms in process R & D spending. In the case of professionalism, though, greater homogeneity was found among firms with high levels of professionalism for both variables. It may



be that firms with many professional linkages to others within the auto supplier field have greater information and awareness of the R & D spending behavior of rivals, and are better able to adjust their own spending plans to the industry norm.

The results obtained in the marketing strategy category are difficult to explain. Opposing results were obtained for each of the two variables reporting significant results. High dependence firms had greater homogeneity in the Sales Force Expenses/Revenue variable, while high professionalism firms had less homogeneity for this same measure. It may be that firms with high dependence are required to offer greater customer service through the sales force, while firms with high professionalism find alternative ways to obtain sales. Conversely, high professionalism firms had greater homogeneity in the Media Advertising & Sales Promotion Expense/Revenue variable, while high dependence firms had less homogeneity in this measure. These findings are puzzling and admittedly difficult to explain, and further research is necessary to account for this pattern of results.

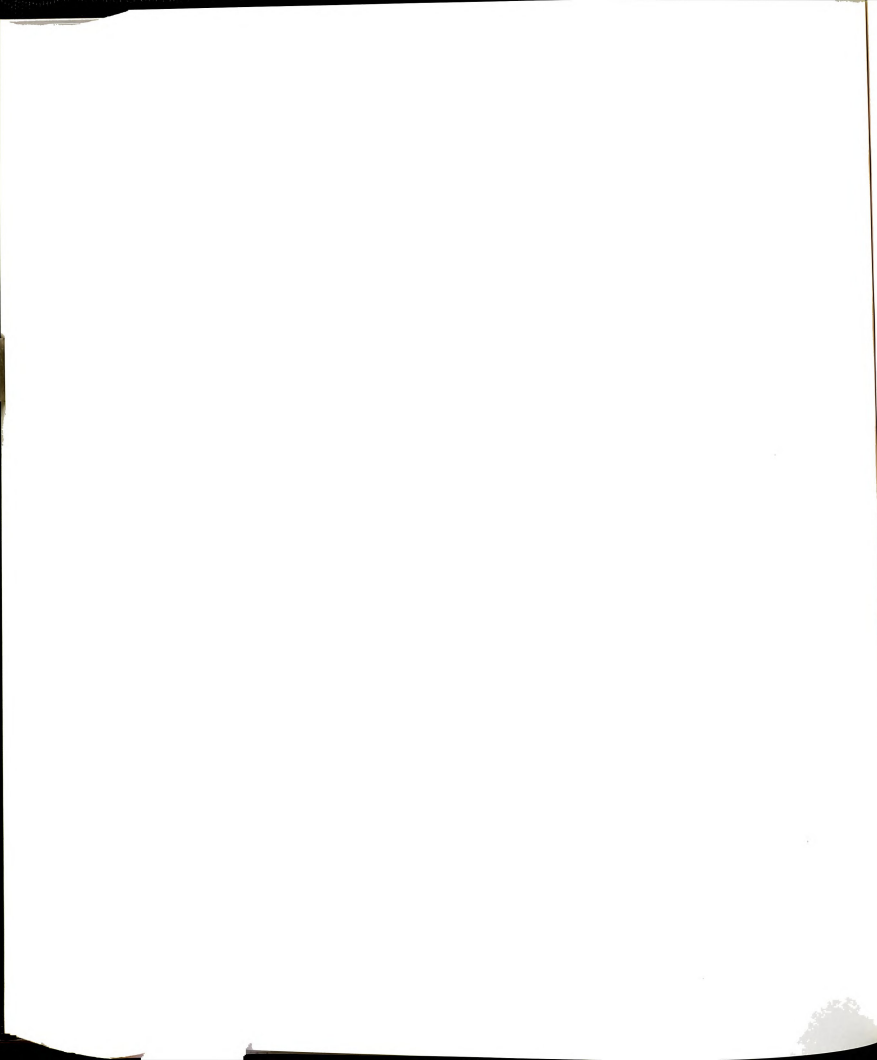
The strategy variables associated with the Industry variables category - Technological Change and the Relative Compensation Average - were consistent across both analyses: no significant differences were found in the homogeneity of these variables. It may be that these industry-level measures reflect industry-wide norms or activities, in which case all firms in the auto supplier field would be similar to one another and homogeneity would exist for all firms within the field. This same logic also might apply to the other variables that exhibited the same pattern: the Plant and equipment (P & E) Newness Average, and



the Capacity Utilization Average. All supplier firms might pursue similar arrangements with respect to these variables, and the result is that there is homogeneity among all firms within the field for these variables.

The pattern of results gives some additional support to the general thesis of this research: firms with higher levels of institutional force did tend to exhibit greater homogeneity in their business strategies. Thirteen of the thirty four measures of strategy were significant and in the hypothesized direction, while six were significant but in the opposite direction as predicted. The consistent pattern of "no difference" found in four of the variables suggests possible field-wide homogeneity. While the findings are not strong, the pattern of results and the consistency among certain variables provide additional though modest support for the underlying theory of institutional isomorphism.

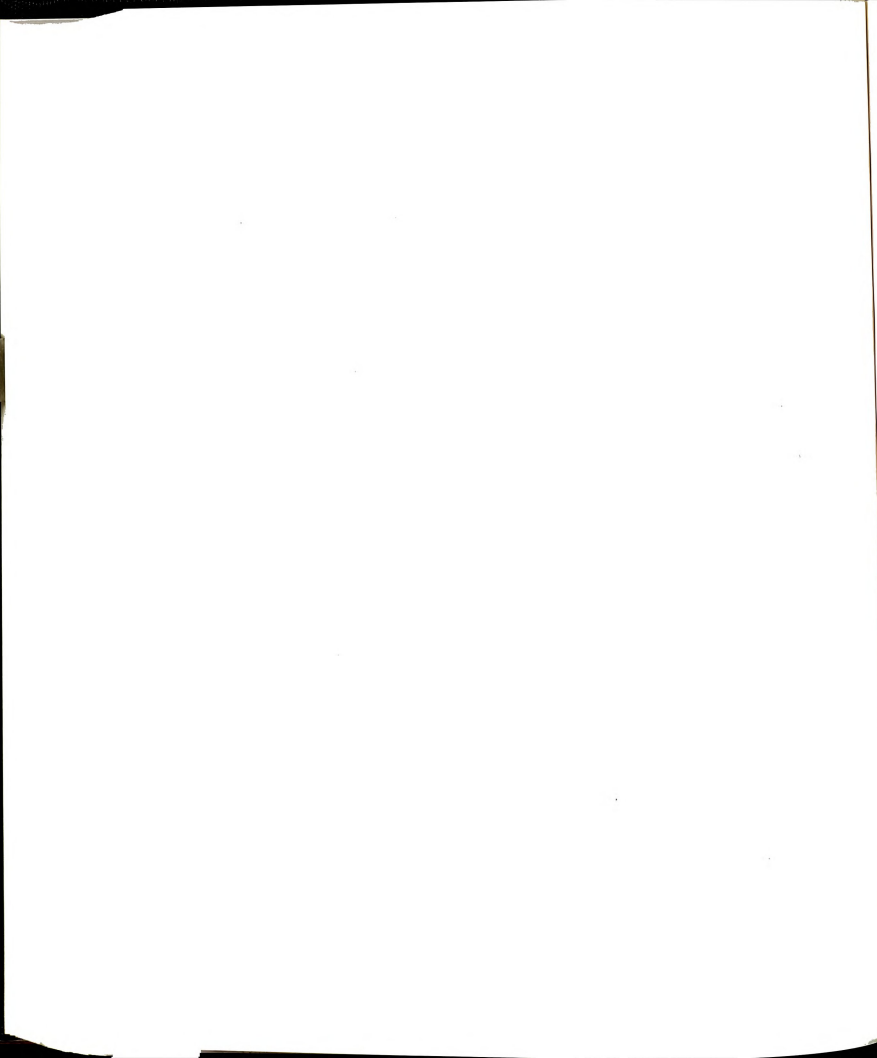
An additional pattern in the results can be observed if differences in the type of strategy measure are assessed. The majority of the responses which support the research hypotheses were found among those variables that are measured with objective or accounting-based data. That is, there were available actual figures from the organization reflecting the level of sales and the firm's expenses. Eleven of the thirteen findings that were in support of the research hypotheses were based on such data. In contrast, only three of the six results that were in opposition to the hypotheses were based on objective measures. The remaining three measures were based on executives' subjective assessment of their strategy.



This pattern of findings suggests that homogeneity in strategy is more likely to occur in the actual resource allocations of organizations than in the assessment of the organization's strategic position. Managerial strategic assessments might be affected by institutional forces. One such mechanism is coercion. To the extent that powerful firms can dominate the strategy process and control the key environmental assumptions and analyses, subordinate firms will come to see themselves in similar ways. As a result of such perception control, executives make similar strategy assessments.

For example, in the auto supplier study reported here, the dominant OEM auto manufacturers place a great deal of coercive pressure on firms to provide parts at the lowest possible prices. This perception was brought out repeatedly in interviews and conversations with firm CEOs. because firms are coerced into selling their output at what they believe to be the lowest possible price, managers believe that their pricing, relative to competitors, is equivalent to that of their competitors. By emphasizing low costs, the OEM customers create a similar perception among suppliers concerning pricing behavior and the assessment of Relative Price indicates greater homogeneity among firms with high dependence and coercive pressure.

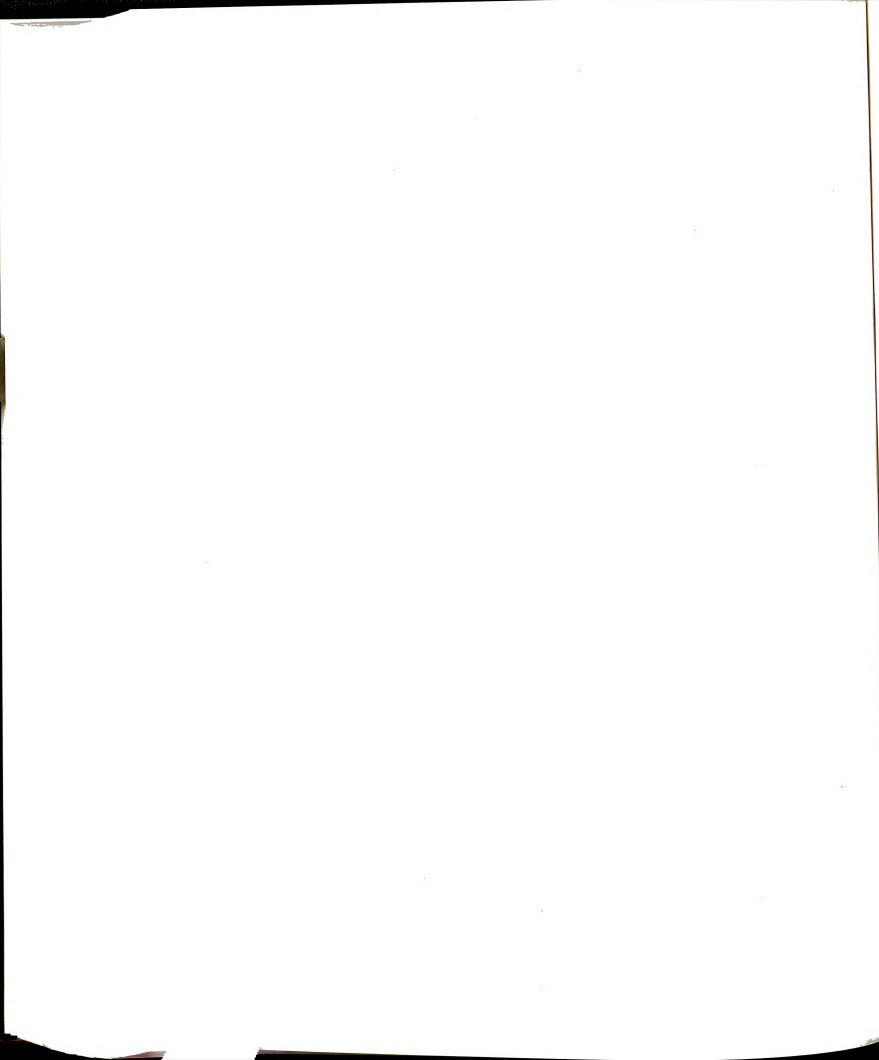
An additional element that might influence strategy assessments is the quantity of information available. Managers may have so much information in conducting a strategy assessment that their strategic position appears heterogeneous. This statement refers to a situation in which management, because of greater awareness of the firm's position, is more able to make an accurate determination of the



organization's strategy relative to competitors. Managers who lack this information resort to using industry standards or averages for comparison, and their evaluations appear more similar to other using this assessment method. The presence of information allows managers with high industry knowledge and awareness to make more diverse and accurate evaluations of their relative position. High levels of information would be found among firms with many professional linkages and relationships. Note that two of the three contradictory findings in the professionalism column occur in variables that are measured subjectively.

5.2e Discussion of Results: Summary

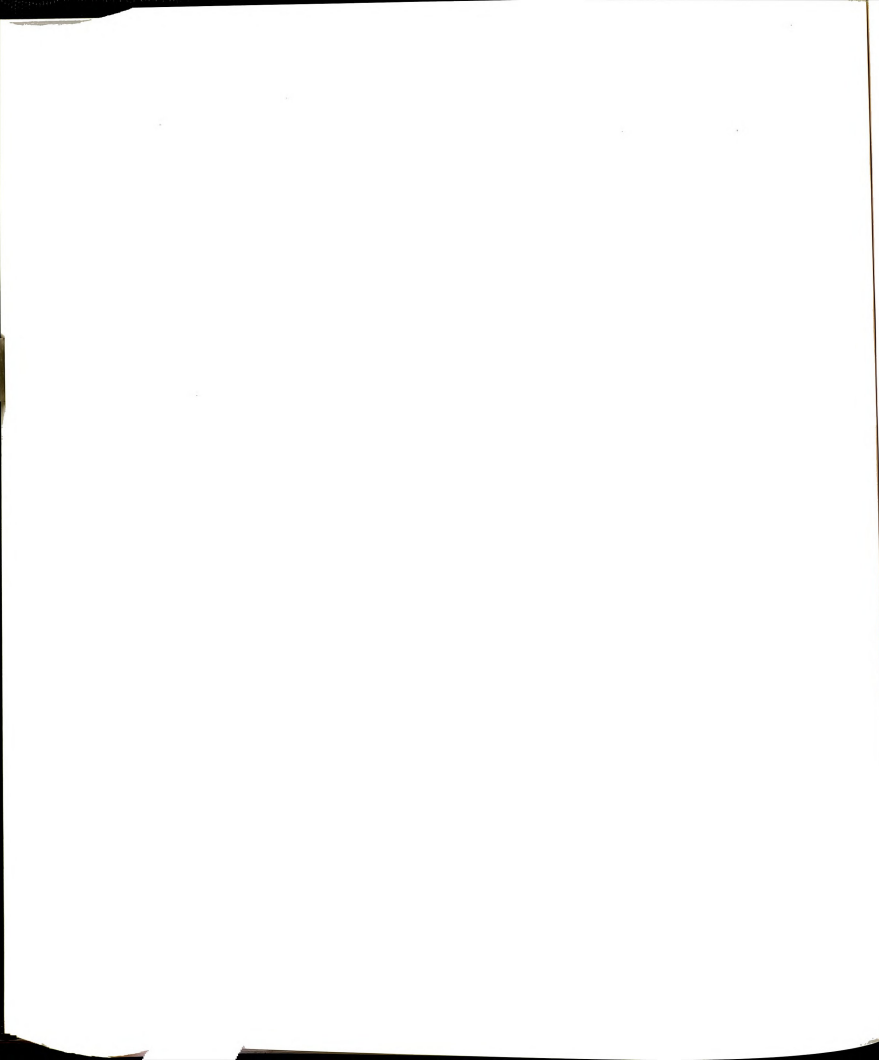
The general conclusion derived from this discussion of the results of the study is that institutional forces for isomorphism are operative in the auto supplier organization field. The greater the level of institutional isomorphic force, the more homogeneous the strategies of auto supplier firms. This is particularly true for those mechanisms associated with coercive isomorphism and normative isomorphism: dependence and professionalism. Firms with greater dependence on the U.S. OEM auto manufacturers indicated greater homogeneity in their strategic decisions and in their strategy assessments than firms with low levels of dependence. Similarly, firms with many professional ties to other firms in the auto supplier organization field exhibited greater homogeneity in their strategies than firms with few professional linkages.



The results for mimetic isomorphism and uncertainty were not significant. However, uncertainty alone may be insufficient as a cause of imitative behavior. It may be necessary for firms to have a model available that they can mimic. It is not possible for a firm to emulate the strategic behavior of another organization if it is unaware of the potential model's behaviors, or if it lacks information about the model firm's strategies.

Firms also may be very cautious and selective in their choice of models. They may desire models which are seen as already similar in some fashion to themselves. Such similarities might include the size, age, product/market mix, or financial status of the potential model. Many of the supplier firms in the sample were privately owned organizations that tend to guard information about their activities. Without information on the actions of potential models, firms may be unable to engage in mimicry. Information that is readily available is generally provided for publicly held firms, which tend to be larger in size, have a wide product mix, and transact business in many different industries. The small, privately owned auto supplier may tend to see such firms as inappropriate models because of these differences. Thus even when information is available, it may be insufficient to permit firms to mimic one another.

Finally, firms may seek to mimic only those strategies that are perceived as successful. Firm performance may be an important factor in the choice of models for firms with high levels of uncertainty. Companies wish to emulate strategies that will enable them to operate



profitably in the industry. This requires information about firm performance, characteristics, and strategic behaviors.

Uncertainty may be the necessary but not sufficient cause for mimicry to occur, for firms also can be uncertain about which firms or strategies to mimic. Mimetic isomorphism may result not only from uncertainty as an antecedent condition, but also may require available models. Additional research is needed to examine the effects of uncertainty and modeling as determinant of mimetic isomorphism. Firms might be asked if they attempt to model their activities after any other firms and if so, to identify those organizations they try to emulate. Comparisons of the firms and their strategies might provide a means of measuring mimicry, which could then be compared with the homogeneity among firms within the organization field.

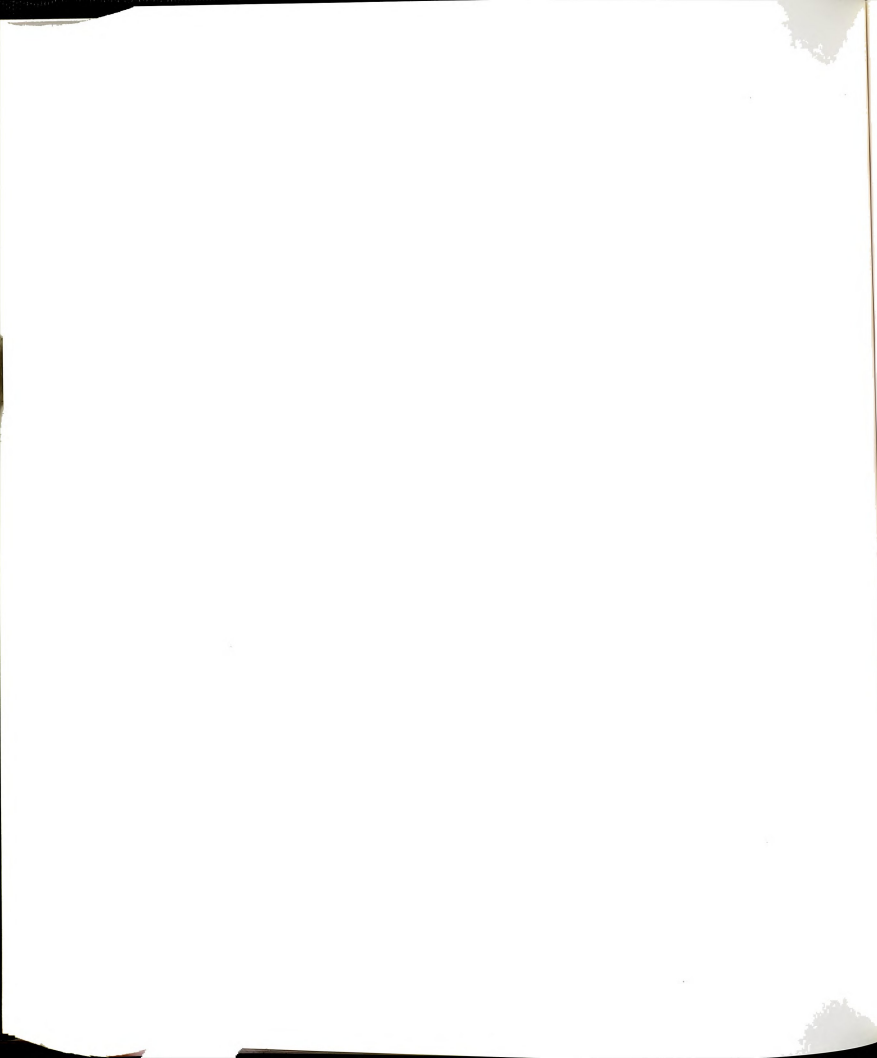
One issue that merits consideration concerns the possible effects of interactions among the various institutional isomorphic forces. One potential interaction might exist between dependence and uncertainty. If a firm must contend with an environment in which there are high levels of uncertainty and if the firm is highly dependent on another firm or group of firms for critical resources, the dependent firm might choose to mimic the dominant firm as a means of overcoming the uncertainty. Or, it might acquiesce to the demands of the dominant firm without regard for effects on firm operations.

There also may be an interaction between dependence and professionalism. The dependence relation itself might be a source of professional ties and information flows among firms. For example, the U.S. OEM auto manufacturers occasionally call their suppliers together

for conferences and seminars. These meetings provide opportunities for the representatives of supplier firms to interact with one another, exchange information, and learn expected patterns of operations or behaviors. The informal ties that exist among firms that result from dependence on the same customer can become formalized, as executives meet with one another and forge direct linkages between their respective firms. Since they are required by the customer to attend these sessions, dependence and coercive isomorphic force can lead to increases in professionalism and normative isomorphism.

It is also possible that a three-way interaction effect might exist between the institutional isomorphic mechanisms. Uncertainty, dependence, and professionalism might be interrelated to such an extent that isomorphism and homogeneity of strategy is very high. High dependence on a customer which faces an uncertain future might increase uncertainty for the supplier firm. If the number of professional ties were high, these might serve to provide information or models that would result in mimicry and homogeneity of strategy. Or, having a high number of professional linkages might serve to counteract uncertainty in the environment and reduce dependence. There are many such combinations that might be suggested and investigated.

The results obtained in this research indicate that, in the organization field defined as suppliers of parts and components to the domestic U.S. automobile manufacturers, increased forces for isomorphism often lead to homogeneity in the business strategies which supplier firms pursue. The results also suggest additional research questions in need of further study. While the effects of the various

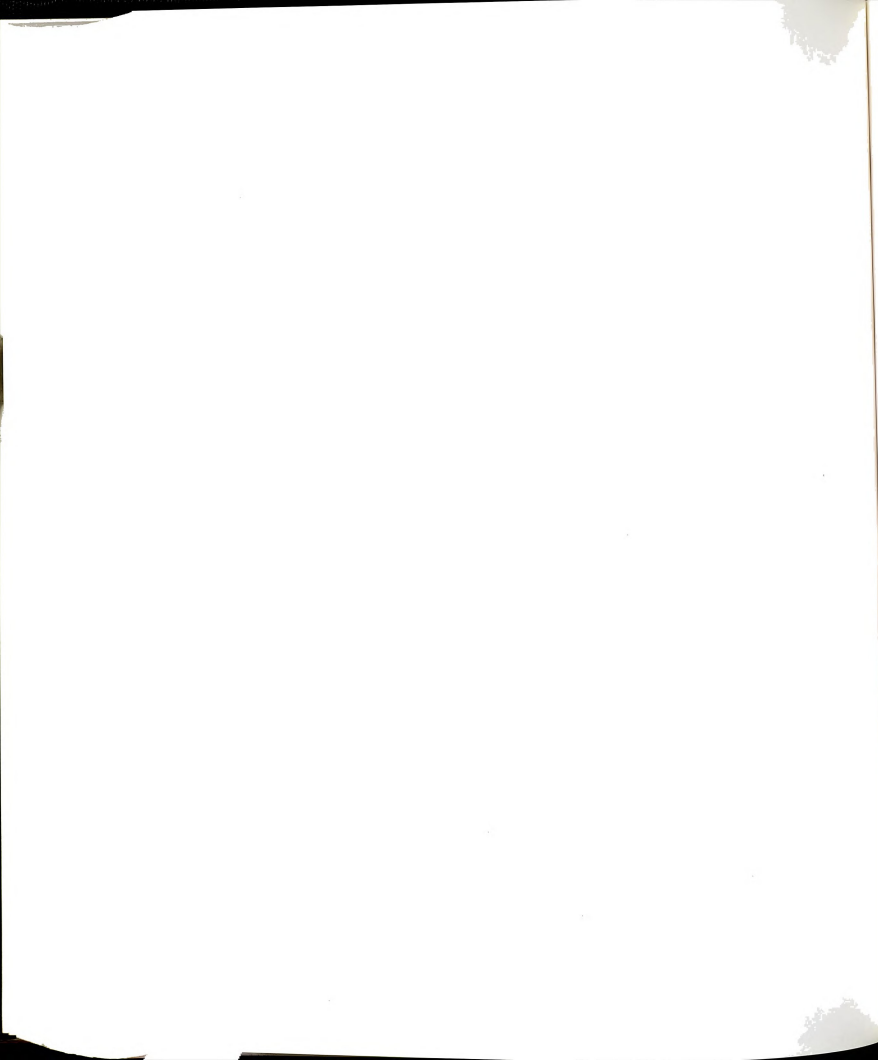


institutional isomorphic forces are not universal, the results are significant enough to warrant the tentative conclusions.

5.3 The Structure of Organization Fields, Institutional Isomorphism, and Homogeneity of Strategy

The results of this study also can offer some considerations relevant to the development and the study of organization fields. Organization fields and field-level effects are not yet well defined (Zucker, 1987). Studies of organization fields are a recent phenomena within the sociological and organizational sciences. Because of the limited knowledge base, the specific processes whereby institutional forces operate within the field are not well understood. The results of this study offer a tentative suggestion that forces for isomorphism are a function not only of dependence, professionalism, and uncertainty, but are also to a great extent influenced by the underlying structure of the field itself. While the structure of an organization field includes dependence relations and professional linkages, there are other forms of structural arrangements that might influence the effects of isomorphic forces on homogeneity.

There are many approaches to analyzing field structures. DiMaggio (1986) discusses alternative methods of analyzing field structures to evaluate possible effects of structure on isomorphic forces. One measurement method that can be used to assess the position of an organization relative to others in the field is the density structure. Organizations with high density are central to the field and are seen



as hierarchically superior (DiMaggio, 1986). In such cases, differences in the hierarchical position of the organization within the field may lead to differences in the isomorphic force brought to bear on the firm.

An example that illustrates this idea might be taken from this study. By virtue of their position as customers for the parts and components of suppliers, the OEM auto manufacturers in the United States are central and hierarchically superior within the organization field defined as the U.S. automobile industry. This position places the OEM in a position to dictate relations, standards, and operating practices to subordinate firms. This structure serves to maintain the dependence of suppliers on the OEMs and establishes the coercive mechanism within the field. Hence suppliers experience coercion in a manner that differs from that of the OEMs.

High density firms may serve as a clearing house of information about the field, and may be able to influence the development of professional norms through the control of information. Density also may affect centrality and perceptions of power and influence, which would lead to greater potential for coercive pressure. Centrality refers to the position of a firm in a network of organizations. Central organizations have ties to all other organizations within the network (Cook, Emerson, Gillmore, and Yamagishi, 1983). Central organizations can create networks among firms by providing a linkage among diverse members of the organization population. Centrality might influence the institutional forces within a field. For example, centrality in a field might lead to the use of the central organization

as a model because of the position and status of the central organization within the network.

DiMaggio (1986) also examines the position of firms within field with respect to structural equivalence through the use of blockmodeling techniques. Using asymmetric matrices in which cell entries represent ties sent from row-organizations to column-organizations, blockmodels permit the analyst to group members of a population of organizations into self-consistent subsets of "blocks" on the basis of the relations among them (Arabie, Boorman, and Levitt, 1978). Organizations within similar blocks have similar relationships to other organizations, not necessarily with those organizations that interact with one another. This provides a basis for the claim that blockmodels operationalize the notion of structural equivalence by grouping together organizations who occupy the same position in a larger social structure or field (DiMaggio, 1986).

Blockmodels might be used to assess the structure of an organization field by specifying the relationships among firms and identifying those firms that are structurally equivalent. The institutional perspective would suggest that firms which are structurally equivalent experience institutional forces in similar ways, and that this similarity would tend to lead to isomorphism in firm structure and behavior (DiMaggio and Powell, 1983). Determining the underlying block structure of the field would allow for additional tests of the effects of institutional forces for isomorphism.

There are many more dimensions of interorganizational structures that might be included in an analysis of institutional patterns within

a field. Whether a connection is multiplex (Barnes, 1972) - based on multiple content versus single content - might be an important consideration. Such network properties as connectivity - the degree to which units are linked directly or indirectly - or the clustering of ties among organizations might be relevant (Laumann, Galaskiewicz, and Marsden, 1978). To the extent that linkages among organizations are themselves organized, additional variables such as centralization, formalization, and loose coupling might be included in the structural analysis of the organization field (Aldrich and Whetten, 1981).

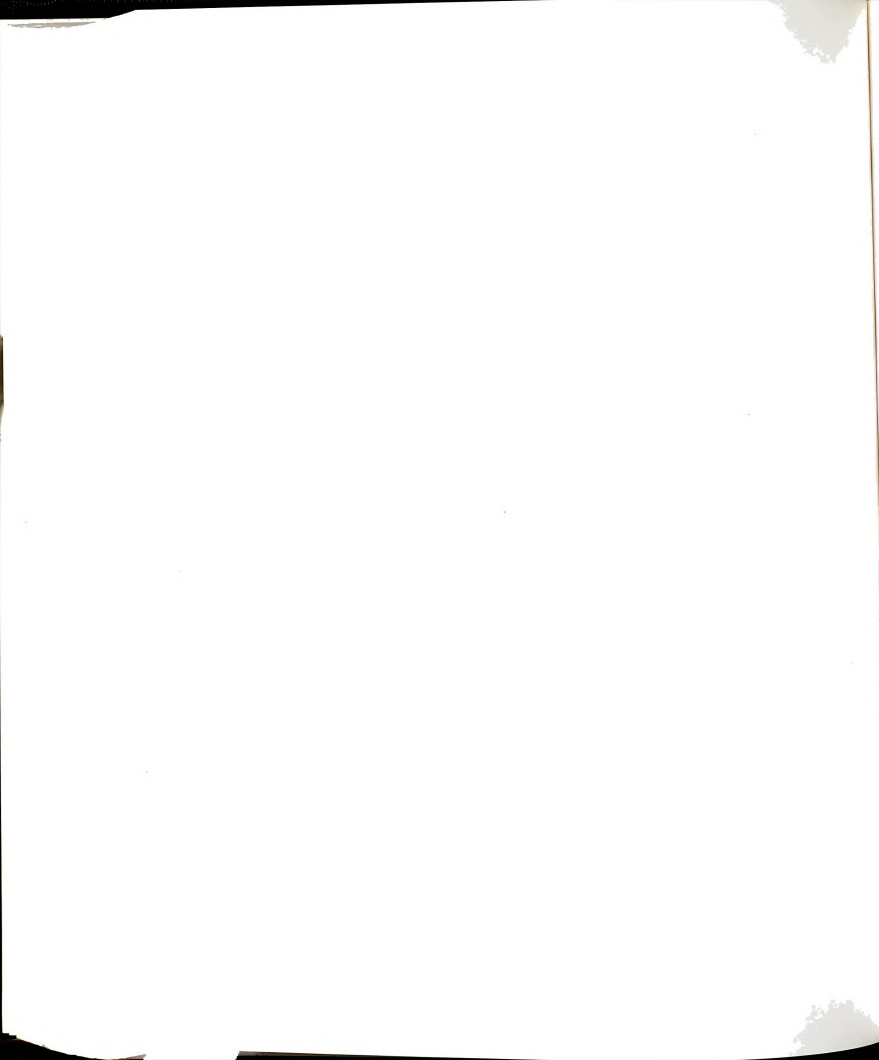
The crucial point of this discussion is that institutional forces operate primarily through the relations among firms within an organization field. To the extent that these relationships would create differences among firms within the field or would facilitate the isomorphic processes, the structure of the organization becomes an important variable in evaluating the extent of institutional isomorphism and the process whereby institutional forces operate among firms within a field to bring about homogeneity in strategy.

The result of differences in the structural relations within an organization field is that certain aspects of the strategies or operations of a group of organizations within a field are homogeneous, while others will appear to be quite heterogeneous because of the differences in position within the field structure. Not all organizations experience the same institutional forces for isomorphism in the same way. In this study, there were differences observed in the group membership of firms in the comparison groups. A firm with high dependence may have had few professional linkages and vice versa.

There is variation in the isomorphic forces that influence firm behavior across organizations and across forces. A supplier with high dependence is not necessarily high in professionalism. Thus when examining the effects of the isomorphic forces individually, differences in the effects might be anticipated to occur, as occurs in this study.

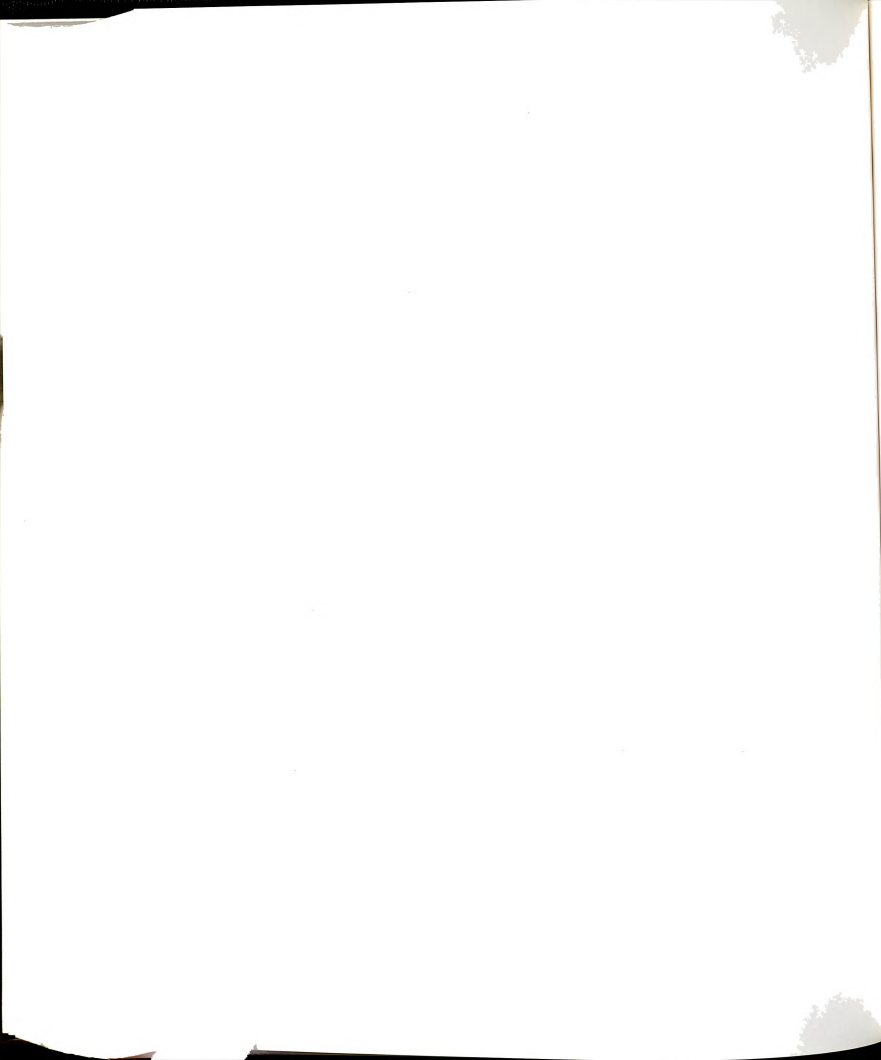
Table 5-1 reinforces many of the issues raised in this discussion of the effects of field structure on institutional isomorphism and homogeneity of strategy. While the overall assessments were that increased levels of dependence and professionalism resulted in greater homogeneity of business strategy, note that the specific business strategy variables affected differ to a great extent between the two isomorphic forces. There are some similarities - the Inventory/Revenue Average, the Investment/Revenue Average, and the Profit per Employee Average all indicated greater homogeneity among high isomorphic force firms, and the New Products as a Percent of Sales Average showed less homogeneity among high isomorphic firms. However, Product Quality, Relative Price, Market Share, Product R & D, Sales per Employee, Sales Force Expenditures, and Media Advertising Expenditures all showed different results.

The analysis points out the necessity of examining the effects of the individual isomorphic forces separately. As DiMaggio and Powell (1983) suggested, the individual effects of institutional isomorphism may not always be clear, but they do stem from very different mechanisms (dependence, uncertainty/modeling, and professionalism) and they may lead to very different results in firm behavior. The common



theme is that firms with high levels of institutional isomorphic forces will tend to exhibit greater homogeneity in their business strategies. The results of this study give support to the contention that the institutional forces vary in their effects on homogeneity of strategy among firms within an organization field. The suggestion is that the structure of the field may play a significant role in the determination of the impacts of institutional forces, and future research should develop more precise models of the structural mechanisms through which institutional forces operate.

From this discussion of the effects of institutional structures on isomorphism and homogeneity, it also follows that if there are differences among firms within a field there are also likely to be differences in the effects of institutionalization and isomorphic forces for homogeneity across organizational fields. While this study examined organizations within a field, DiMaggio and Powell (1983) noted that institutional forces are operative at the field-level of analysis as well. Organization fields can differ significantly in structure. The preceding discussion of the potential effects of field structure on the isomorphic process leads to a suggestion that homogeneity in strategy in one organization field such as auto suppliers would not necessarily be the same as the homogeneity that might occur in an alternative field such as universities, public hospitals, and others. Differences in organization fields will result in differences in the institutional isomorphic force and in the homogeneity observed among firms in the field.



Summary

The results of the study reported in this research have given moderate support to the general hypothesis suggested by DiMaggio and Powell (1983) that increased levels of institutional isomorphic force would lead to increased homogeneity in the behavior and in particular the strategies associated with firm competition within a specific industry or business. Though exploratory in nature, the data indicate that for firms in the auto supplier industry which have greater dependence and greater professional ties to other supplier firms had less variance in their business strategies. At the same time, this study has suggested additional questions and factors that need to be researched to further develop an institutional perspective on business strategy. Longitudinal research, consideration of field structures, interaction effects, and firm characteristics, which might serve as boundary conditions seem to be fruitful areas for further study.

5.4 Homogeneity of Business Strategy in Organization Fields

The purpose of this section of the discussion is to examine the results of the study within the domain of theory and research on organization strategy. Of primary interest are the potential effects of institutionalization on strategy among firms in an organization field, and in particular homogeneity of strategy.

5.4a Strategy and Interorganizational Relationships

Two broad perspectives can be identified in research on organization strategy. The first is a macro level view, in which the focus is on the markets or industries in which firms operate. In the market-based approach, strategies are viewed as the firm's response to market forces such as product life cycles (Buzzell, 1966; Hofer, 1975; Anderson and Zeithaml, 1984), market growth/market share (Gale, 1972; Henderson, 1979; Woo and Cooper, 1981; Woo, 1983), market structure (Christenson and Montgomery, 1981) or market imperfections (Williamson, 1975). Industry-based perspectives are concerned with the effects of industry structures, primarily economic in orientation including concentration (Mueller and Rogers, 1980), entry and exit barriers (Harrigan, 1980b, 1981b), and competitive rivalry (Porter, 1980, 1985) on firm strategy and performance.

The second is a micro-level view, in which the focus of attention is on the individual firm. Research issues at the micro-level are primarily concerned with understanding the process by which strategy is formulated and implemented within the individual organization. Such issues include strategy decision-making processes (Mintzberg, 1973; Fredrickson, 1984), strategic choice behavior (Child, 1972; Bourgeois, 1984), managerial characteristics (Szilagyi and Schweiger, 1984), and organization structure (Chandler, 1962; Armour and Teece, 1978; Miller and Friesen, 1982).

Recently, a third level has emerged in the literature. Occupying a "middle ground" between the macro- and micro-level views, this

approach considers explicitly the idea that organizations exist in environments that consist of other organizations (Van de Ven, 1976; Van de Ven and Walker, 1984), and that relations among organizations may influence the strategy process (Astley, 1984). Previous efforts in this area have been primarily concerned with organizations in the public or not-for-profit sector (for example, Aldrich and Whetten, 1981; Lawless and Moore, 1989). However, recent efforts have attempted to place the topic of interorganizational systems within the business, for-profit strategy domain (for example, Astley and Fombrun, 1983; Astley, 1984; Thorelli, 1986).

One approach to strategy in interorganizational relations is the consideration of networks of organizations. Thorelli (1986) argued that networks occupy a space between market structures and organizations, and presented a paradigm that explicitly considered position in a network structure, linkages among firms, and dynamics of network relations as influences on firm strategy. Miles and Snow (1984, 1986) proposed a special form called the "dynamic network" in which four key characteristics combine to influence firm behavior. They suggested that dynamic networks of organizations evolve in order to keep pace with problems presented by increasingly complex and turbulent environments.

Cummings (1984) discussed the concept of the "transorganizational system" and suggested that one motivation for engaging in interorganizational systems is the need to solve jointly problems that are too large and complex for a single organization. One type of transorganizational system is the organization collective developed by

Astley and Fombrun (1983) and Astley (1984). A collective is a group of firms with a common or shared goal or objective. When organizations coalesce in to collectives, there may be a need for an integrated strategy to be formed that explicitly considers the collective goals, and the strengths and weaknesses of the member firms. The type of collective and the strategies of member firms differ according to two dimensions of interorganizational relations: direct versus indirect relations and competitive versus symbiotic or mutually advantageous relations (Oliver, 1988). Collectives may be able to use interorganizational relations to maximize the performance of the collective in competing with powerful competitors, either single-firms or other collectives.

Empirical research on interorganizational systems has considered attachments in dyadic relations (Levinthal and Fichman, 1988), resource allocations among governmental units (Schwochau, Feuille, and Delaney, 1988), the administrative structure of public schools (Rowan, 1982), and charitable contributions of corporations (Galaskiewicz and Wasserman, 1989), among others. To date there has been little empirical research that has explicitly considered strategic behavior among firms in interorganizational systems. One possible reason for this is the lack of theoretical development concerning the forces present in interorganizational systems and their relationship on firm strategy. The research presented in this study offers some insights into this neglected area of strategy research.

Interorganizational relationships are fundamental to institutional theories of organizations. Whether the source of institutionalization

is external to the firm, as in the case of state governments Zucker, 1987; DiMaggio and Powell, 1983), or arises from internal processes or organizations, such as embedded routines or imitation (Zucker, 1987), institutional forces operate through interorganizational relational networks (Meyer and Rowan, 1977). Such relational networks can be found quite often within the environment of organizations. Suppliers and customer organizations represent significant interorganizational relationships for many firms (Porter, 1980). Governments also influence organization actions Thomas and Meyer, 1984). There are even relations among competitors such as occur through personnel transfers and membership in common trade associations (DiMaggio and Powell, 1983).

To the extent that organizations exist in environments which consist of other organizations and to the extent that such relations among organizations can influence the behavior of firms, interorganizational systems represent an important consideration in the analysis of firm strategy. Institutional relations are one aspect of interorganizational systems. The presence of institutionalized patterns of behavior or structures in an interorganizational system such as an organization field can affect the strategy process.

5.4b Homogeneity of Business Strategy: Implications

A discussion of the results of this research also must examine the impact of the study for theories and research on strategy and business strategy in particular. The issue in this research has been not only

the nature of institutional isomorphism but the resulting homogeneity of firms' business strategy.

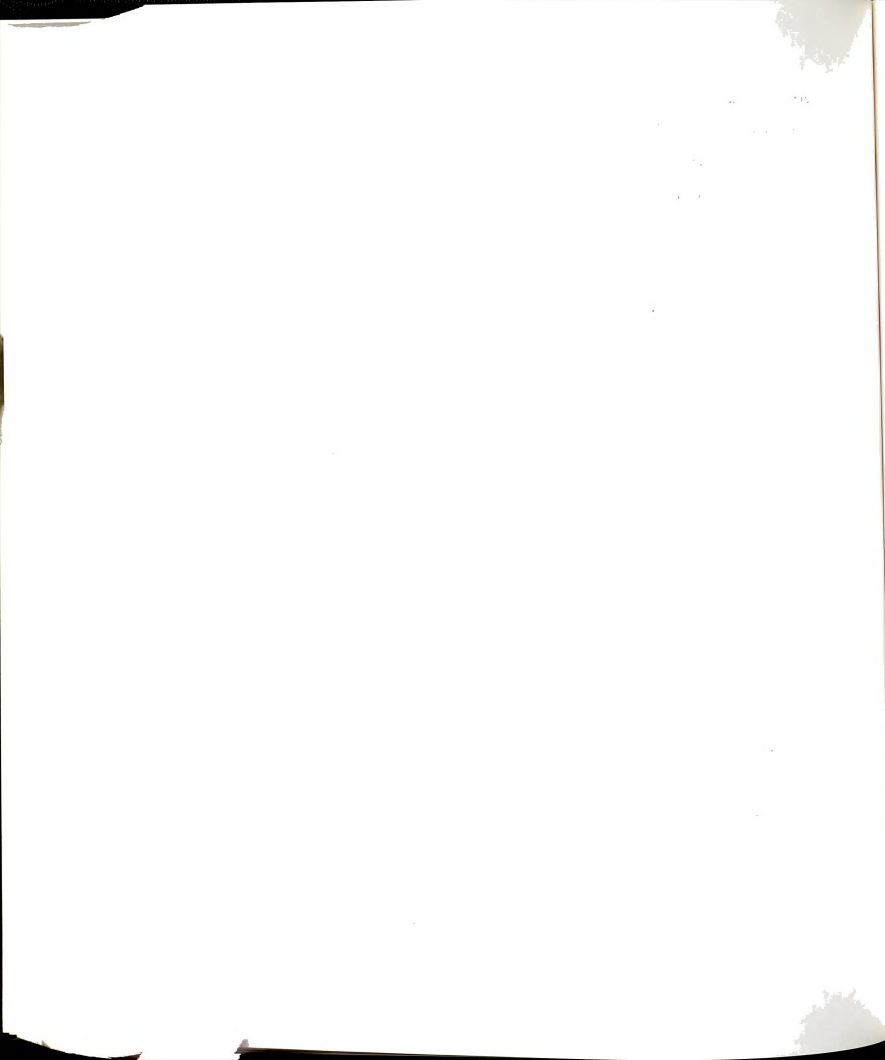
Business strategy was defined as the choices about the competitive and strategic behaviors necessary to compete with other firms in a single business or industry segment (Hofer and Schendel, 1978). It has been suggested that dominant perspectives on business strategy stress the heterogeneity in strategy among firms that arises from characteristics of the organization's environment and the organization itself. The focus has been on the environmental forces that affect strategy (for example, Hofer, 1975; Porter, 1979a), or on the characteristics of firms and strategists that influence strategic choice (Hambrick and Mason, 1984). The results of this research suggest that an additional factor might be included in assessing the environment of organizations - interorganizational systems. Relationships among organizations in a field might influence the business strategy process. In particular, institutional relations might affect business strategy in several ways.

This impact of interorganizational relations and institutional structures of organization fields is shown in Figure 5-1. This figure is similar to Figure 2-1, which depicts forces for heterogeneity of strategy. In Figure 5-1, however, institutional forces operate within the interorganizational relations among firms in an organization and exert a force for homogeneity of strategy. Thus, for any group of organizations in a field, there are forces for heterogeneity operative in the environment and also forces for homogeneity of strategy. The actual strategies of organizations will be influenced by the

combination of forces in the field and the interorganizational relations among firms.

Figure 5-1 may be useful in considering the results displayed in Table 5-1. Environmental forces for heterogeneity and homogeneity may have differential effects on the strategic behavior of a group of firms as a function of the array institutional, managerial, market, and industry factors present in the relations among firms. Thus the strategies of organizations would be subject to different forces as a function of the structure of the field and the dynamic forces present. The influence of coercive pressures might be felt differently by firms than professional norms. Differences in the degree of homogeneity or heterogeneity of business strategy among a group of firms would be likely to occur. This is the case in the auto supplier field results shown in Table 5-1.

The figure suggests a need for future research to define the conditions under which the forces for heterogeneity and homogeneity are exerted and the respective influence on strategy. What types of interorganizational relations are most conducive to homogeneity of strategy? Which strategies are most subject to isomorphic pressures? These issues and others that might be suggested by the institutional perspective on strategy require further development and empirical testing.



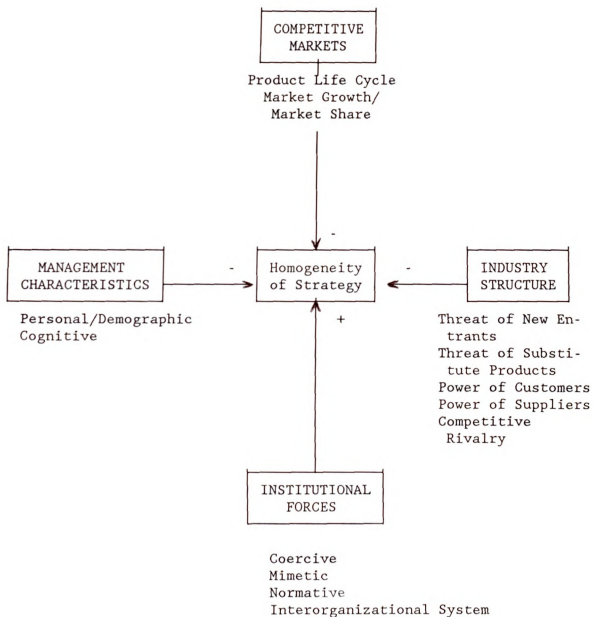


Figure 5-1

Forces for the Homogeneity of Strategy:
An Integrated Model

Competitive Strategy and Institutional Isomorphism

The development of an institutional perspective on strategy also suggests considerations relevant to many topical areas in the field of business strategy. One potential effect of institutional isomorphism might occur in the concepts of competitive advantage and distinctive competence. Competitive advantage is a unique position in a product-market; distinctive competence is a unique skill or expertise of an organization that is superior to any of its competitors. Firms are often encouraged to obtain a competitive advantage or to utilize a distinctive competence in order to maximize performance or profitability (Porter, 1980, 1985; Snow and Hrebiniak, 1980).

Isomorphic forces from institutionalized relations among firms in a field would affect the development of a competitive advantage or a distinctive competence. Coercive pressure from dominant customers, suppliers, or government units place demands on firm behavior and limit the range of strategy options available to organizations. It becomes extremely difficult for firms to develop a unique position or expertise if powerful organizations require similarity among organizations in a field.

In the same manner, the presence of professional linkages or norms within a field mitigates against competitive advantage. If firms have many ties to other firms or have access to information flows about the behavior of rivals, they are more able to engage in strategies that deny competitors an advantageous position. For example, if an auto supplier firm can anticipate a competitor's new pricing strategy, they

may be able to submit a low bid on specific or key contracts in order to prevent the rival from gaining market share or making inroads into an established market position. Such preemptory moves are recommended as a form of strategic behavior (MacMillan, 1982, 1983). The ability to engage in such a strategic "first strike" might be predicated on the availability of information from professional ties within an organization field.

If uncertainty is high and models are available, mimicry also can prevent firms from obtaining a competitive advantage. Firms which are models for others within the organization field are constantly in a position of having their behaviors copied by rivals. Mimetic isomorphism can serve to decrease the heterogeneity among firm strategies and so limit the distinctive competencies of organizations.

An institutional approach to isomorphism suggests that one way to identify potential areas in which to develop a distinctive competence or competitive advantage is by examining the interorganizational system and the existing strategies of firms within the organization field. If firms appear alike on some dimension; that is, if there is a great deal of homogeneity in strategy - a distinctive competence could be developed by differentiating the firm with respect to this particular dimension. For example, the results of the study indicated that auto supplier firms with high levels of dependence on the OEMs were more homogeneous with respect to their expenditures on the sales force. An opportunity to develop a distinctive competence or a competitive advantage thus exists for firms in this group, if they are

willing to invest more than their competitors on hiring and developing a professional sales force.

In this way, isomorphism becomes the basis for differentiation. Homogeneity leads to heterogeneity in strategy as firms seek a competitive advantage in the marketplace. The theory also suggests, however, that other firms in the field may be quick to follow the lead of a rival, particularly if the field is highly structured and there are many interorganizational linkages. The result is an interplay between competitive and institutional forces that helps characterize and define the organization field. The unique interchange of forces will lead to diversity in the structure of organization fields and in the activities of firms within those fields. Nonetheless, the central point is that competition and institutionalization are not necessarily in opposition to one another. Each may serve to reinforce the other or it may counteract the other, depending on the structure of the field.

Strategic Choice, Determinism, and Institutionalization

The previous discussion has examined the role of interorganizational systems and institutional forces within the environment of organizations, and in particular the affects of these forces in combination with others on firms' competitive behaviors. Implicit in this discussion is an assumption that strategy is the attempt to position the firm within an industry, market, or organization field. The focus is on the interactions among environmental forces and the resulting business strategy of the firm.

There is an additional perspective for consideration, in which the focus is not on strategy as a position but rather on strategy as a decision-making or choice activity of organizational actors, in particular top managers. In this view, strategy may be a conscious and intended choice, such as a formal plan, or it can emerge through a pattern of decisions (Mintzberg, 1988). If strategy is viewed as a choice activity of organization members, how might institutional theory apply?

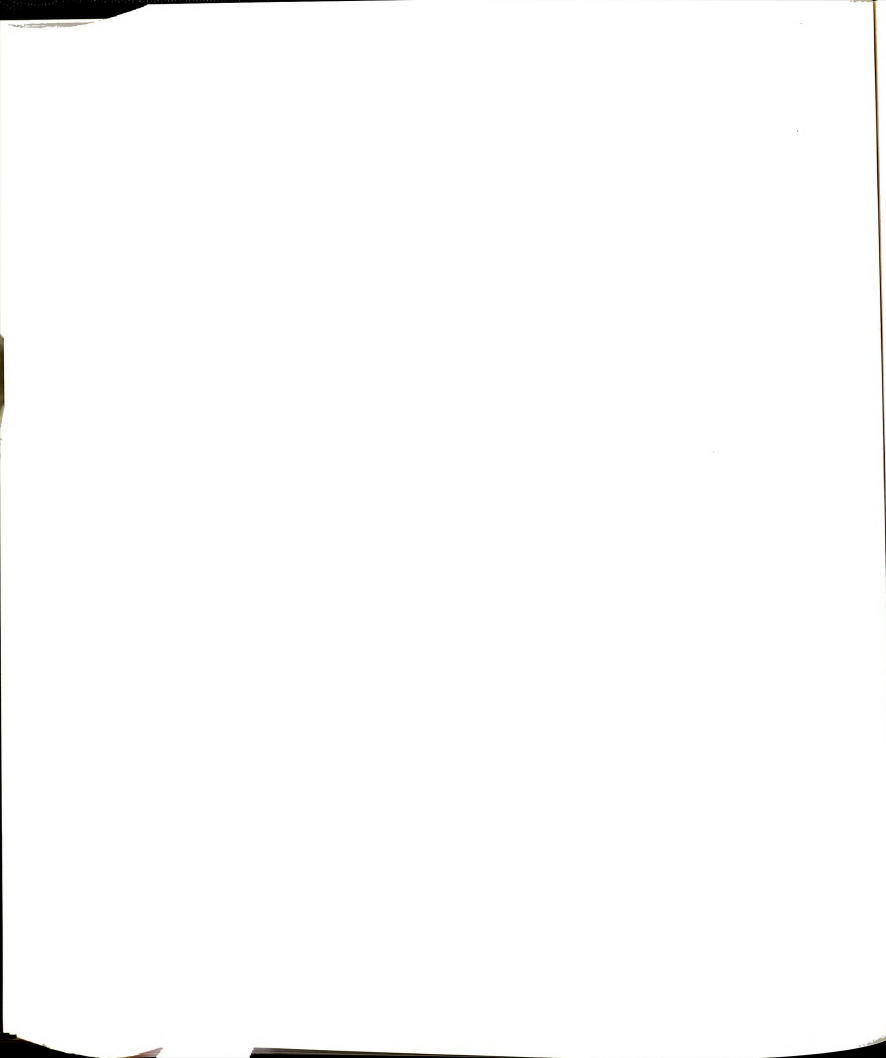
To answer this question requires consideration of two opposing frames: free will versus determinism. Much of the literature on business strategy emphasizes the affects of environmental characteristics on firm strategies (for example, Dill, 1958; Hofer, 1975; Aldrich and Pfeffer, 1976; Porter, 1979a; Ulrich and Barney, 1984). Strategies are aimed at adapting the organization to the external environment (Chakravorthy, 1982; Meyer, 1982) or improving the "fit" between an organization and its environment (Venkatraman and Camillus, 1984). The environment is deterministic, that is, it dictates or demands certain strategies for firms if they wish to survive. Within this context, the structure of an organization field and institutional forces for isomorphism become an additional factor in the firm's environment that must be considered in the planning process.

Against this deterministic view of strategy are those who argue that strategy requires a human agent who is able to exercise discretion in strategic decision-making (Child, 1972). That is, managers have a measure of "free will" in the determination of the firm's strategy

(Bourgeois, 1984). Strategies result not only from environmental demands but from political processes within organizations (Murray, 1978) or through a process of enactment (Smircich and Stubbart, 1985). The strategy process is not adaptive as much as it is interpreted through social interaction (Chaffee, 1985).

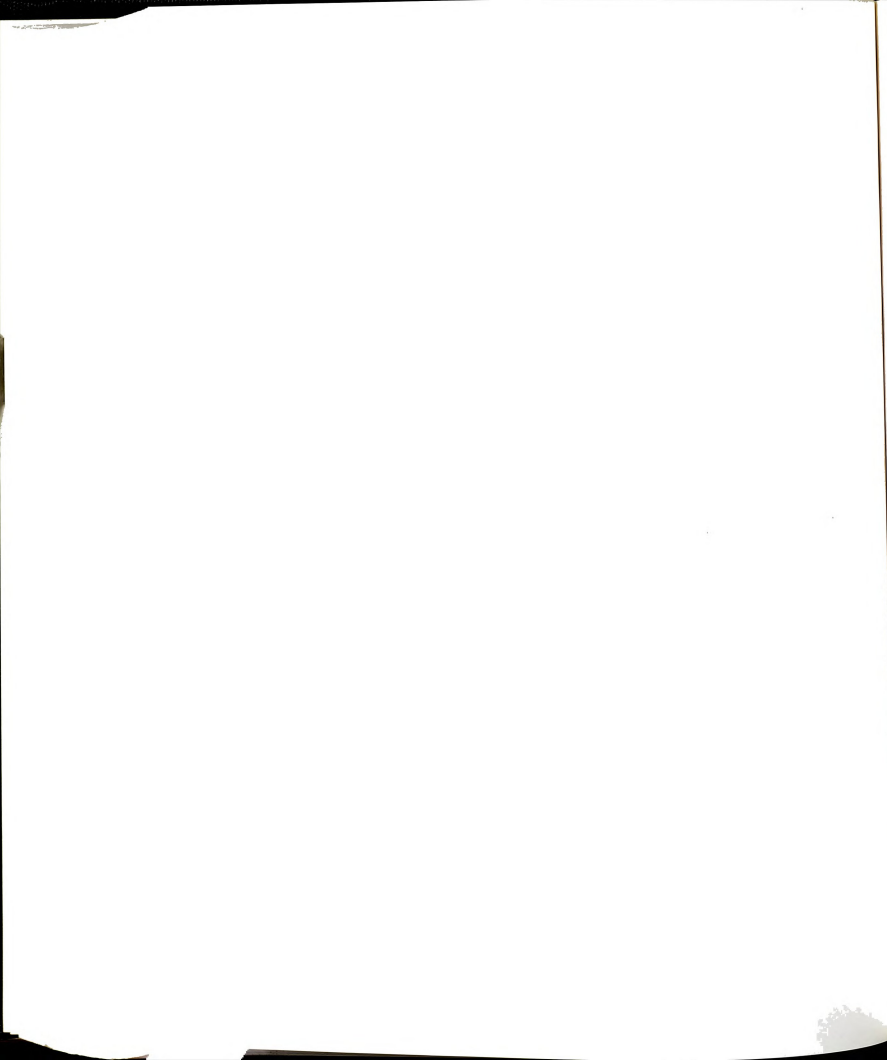
Though some effort has been made to attempt to reconcile these two opposing frames (Hrebiniak and Joyce, 1985), they remain largely conceptually distinct. The institutional perspective addresses the intersection of these two views directly. Through the emphasis on interorganizational structures, institutional theory emphasizes the role of environmental forces on strategy. However, the impact of isomorphic force on homogeneity of strategy occurs through the strategic decision-making process. DiMaggio and Powell note that "[organization] actors making rational decisions construct around themselves an environment that constrains their ability to change further in later years" (1983: 148), and that "at some point, the aggregate effect of individual change is to lessen the extent of diversity within the field 1983: 149).

While population ecologists or environmental determinists stress natural selection through competitive forces as the primary mechanism of organization change (Aldrich, 1979; Aldrich, McKelvey, and Ulrich, 1984). Strategic choice or "free will" emphasizes interpretation, loosely coupled firms, and choice behavior in uncertainty (Daft and Weick, 1984; Cyert and March, 1963; Cohen, March, and Olsen, 1972). Neither view is adequate to account for the observed homogeneity in strategy among organizations such as was found in this study. Despite



natural selection claims, less than efficient organizations are often present in many fields and can be observed in the auto supplier field in this research as is evidenced from data gathered on firm profitability. The evolutionary process in strategy may not be wholly efficient (Nelson and Winter, 1982). The data in the study also indicate that supplier firms are often tightly coupled, with many linkages to other organizations. There is frequently available information and low uncertainty on the part of decision-makers. Instead of confused, interpretive, muddling and incremental change there is evidence of purposeful, planned choice behavior. It is noteworthy that the results of these choices are often the observed homogeneity in strategy, despite normative suggestions that strategy should pursue differentiation, distinctive competence, competitive advantage, and heterogeneity.

By considering structural relationships and isomorphism in organization fields, institutional theory offers a perspective on strategy that incorporates elements of both environmental determinism and strategic choice. The institutional perspective suggests that interorganizational relations among firms in a field and forces for isomorphism operate within the field by influencing the decisions of managers (DiMaggio and Powell, 1983; also Galaskiewicz and Wasserman, 1989). The result of these isomorphic forces in the decision process is the often observed homogeneity in business strategy among firms. Greater research will be needed to identify the processes by which institutional forces affect firm strategic behavior.



Institutionalization, Homogeneity of Strategy, and Firm Performance

The relationship between competitive strategy, isomorphism, homogeneity of strategy, and firm performance is an additional research issue. DiMaggio and Powell (1983) have suggested that institutional forces for isomorphism will occur even in the absence of evidence which suggests that they increase firm efficiency. This is in contrast to much of the research on firm strategy, which examines the effects of strategic decisions and behaviors on firm performance such as profitability and return on investment (for example, Lubatkin, 1983; Dess and Davis, 1984; Anderson and Zeithaml, 1984). Whether isomorphism and homogeneity can lead to increases in firm performance is an empirical question that deserves research attention.

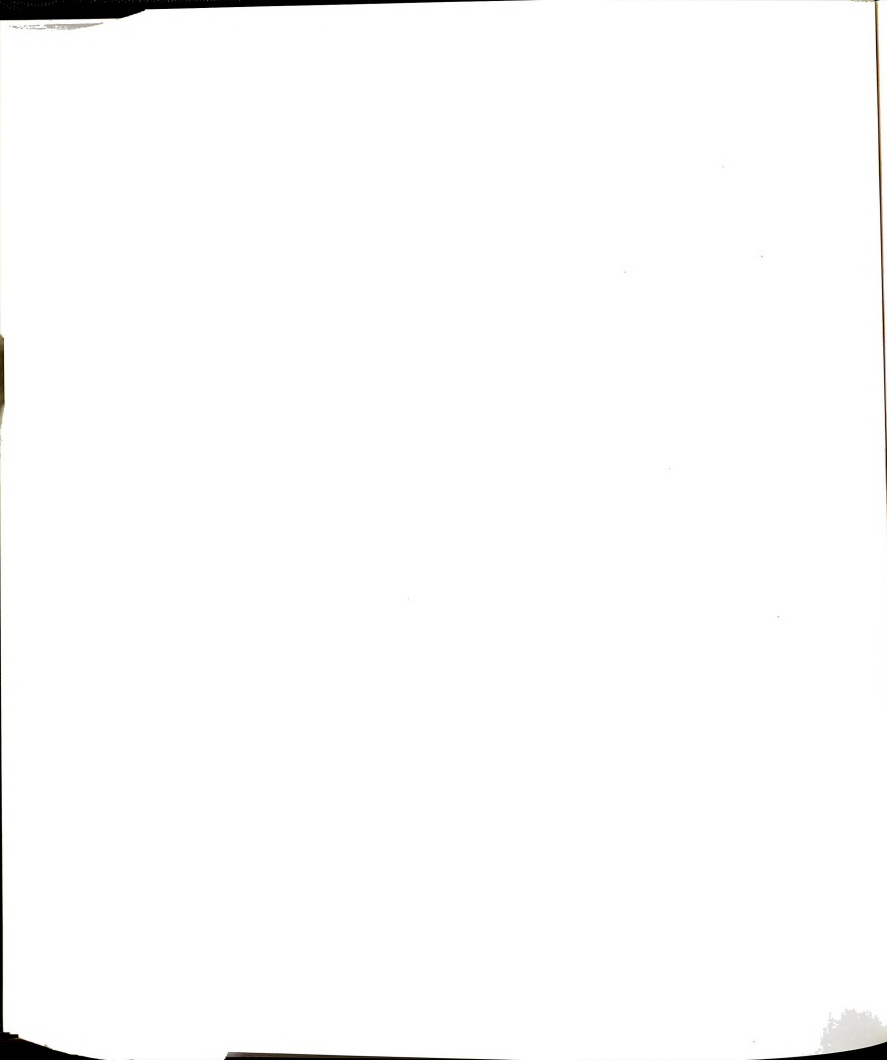
It may be that institutional structures reward firms for their similarity. To the extent that firms are similar to one another within a field, they may be granted legitimacy. For example, Levitt and Nass (1989) documented gains among textbook publishers from incorporating institutional factors in the decision process. Institutional forces also can affect the adoption of innovations in organizations (Meyer and Rowan, 1977; Dobbin et al., 1988). Early adoption of new technological innovations can provide organizations with a preemptive or first-mover advantage (MacMillan, 1983) or a competitive advantage through experience curve effects and lower costs of production (Porter, 1985). Or, homogeneous strategies among existing firms in a field may represent a "minimum standard" to which firms in an organization field

must adhere if they wish to be perceived as legitimate members of the field.

Conversely, homogeneity may hamper firm performance by limiting opportunities to develop distinctive competencies or competitive advantage. Coercive pressures from powerful customers or suppliers can lead firms to adopt strategies that may not be the most effective or efficient and thus would tend to restrict firm profitability (Porter, 1980). The data in Table 4-8 indicates that auto supplier firms with high coercive isomorphic forces from the auto manufacturers were on average less profitable than firms with low coercive forces, as measured by the Profit per Employee average. Mimicry of innovations eliminates the ability of firms to develop distinctive competencies. Research on the isomorphism/homogeneity - performance relationship would be beneficial in further developing an institutional perspective on organization strategy.

5.4c Homogeneity of Strategy and Strategic Groups

This study also raises some issues concerning the concept of strategic groups and strategic group research. Strategic groups were defined as "groups of firms within an industry which follow similar (but not identical) strategies" (Hatten, Schendel, and Cooper, 1978:592), and almost by definition argued for the presence of homogeneity in strategy among firms in an organizational field. The review by McGee and Thomas (1986) of research on strategic groups suggested that while strategic groups are prevalent among



organizations, there was little research on the formation of strategic groups within industries.

The results of this study might offer a theoretical framework and lead to formulation of some tentative hypotheses that would address this issue of strategic group formation. The results of this study have identified groups of firms which pursued similar, though not identical, strategies, and suggested that one force that might lead to such similarity in strategy is the presence of institutional isomorphic mechanisms within an organization field. That is, homogeneity in strategy can occur as a result of pressures for isomorphism inherent in the structure and development of an organization field. Strategic groups might therefore arise from the structuration and the institutional patterns of interorganizational relations found among a group of firms in a field or industry.

The previous discussion of the potential for differential effects of isomorphic forces, field structures, and firm characteristics also might prove useful in identifying the differences in strategic groups within an industry. Groups may develop differently or at different times as a result of the various factors that might influence the firm's strategies. The presence of institutional arrangements and mechanisms for isomorphism such as dependence, professionalism, and uncertainty, might lead firms to adopt similar strategic arrangements and behaviors. The result is a group of firms that appears similar in their strategies: strategic groups emerge. But not all groups have the same characteristics, because of differences in the

interorganizational network, firm characteristics, and the structuration of the field or industry.

This reinforces the need for longitudinal research to identify the emergence of and change patterns in strategic groups. The institutional framework might provide a theoretical basis for developing a series of hypotheses concerning the development of strategic groups that could assist in developing understanding of the formation of strategic groups. In addition, an institutional perspective should be considered explicitly when evaluating a strategic group. The results of this study suggest that isomorphic forces found in the institutional arrangements of firms in an organization field or industry can lead to homogeneity, that is similarity, in the strategies of firms within the field. Not all forces are experienced in the same ways by all firms because of differences in the field structure and the organization. As a result, groups of firms may emerge with very similar strategic arrangements, but there may be differences across groups of firms. This would account for the observed differences in strategic groups within industries, while at the same time providing a rationale for the emergence and development of groups. The concept of institutional isomorphism would seem to have potential as an explanatory device in research on strategic groups.

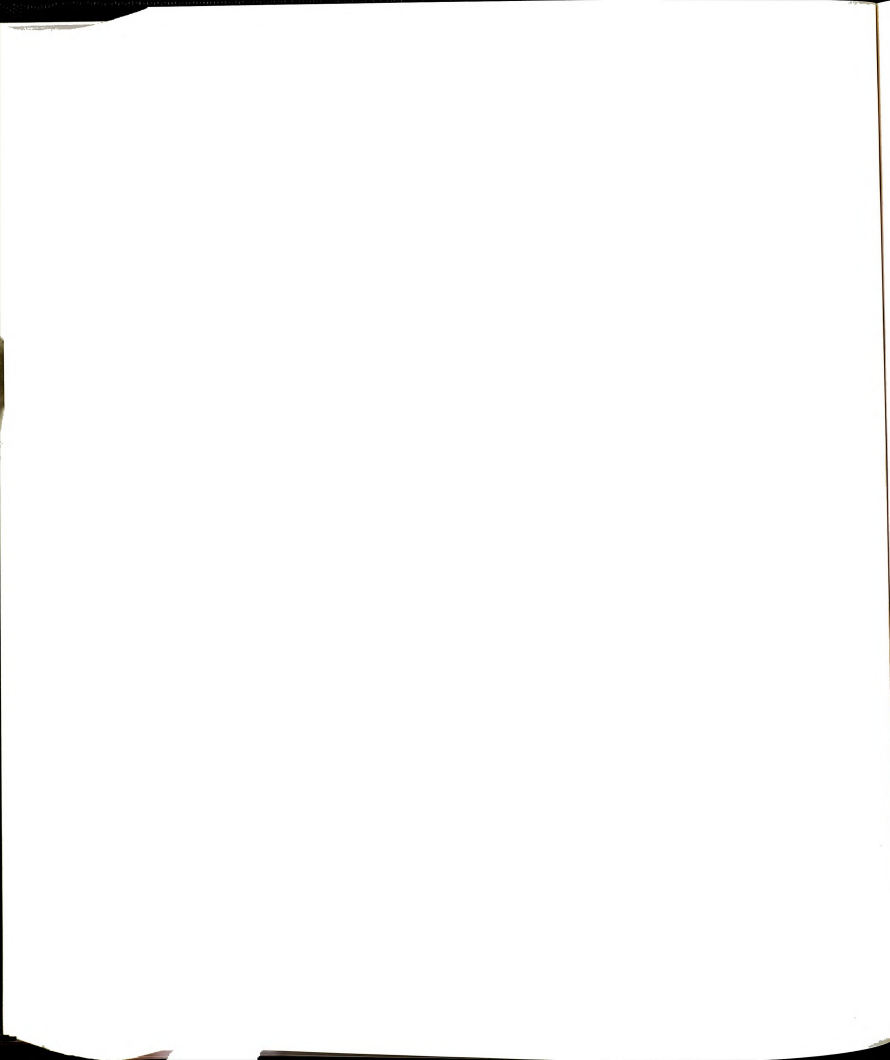
5.4d Homogeneity of Strategy: Intended, Realized and Corporate

This research explicitly examined homogeneity in firm's current business strategies. While homogeneity of strategy was often found

among firms with high levels of institutional isomorphic force, the discussion of the strategy construct suggests additional considerations. Mintzberg and Waters (1985) developed a time-based model which suggested that there are several forms of strategy. There are strategies that are intended by management and formulated in strategic plans, strategies that are deliberate and occur in the strategic decision-making process, and strategies that are realized and are the result of intentions and decision-making.

This research has focused on realized and deliberate strategies. An additional consideration might be the potential effects of isomorphic forces on strategy intentions. Perhaps dependence, uncertainty, and professionalism lead managers to adopt similar strategic plans, and there may be greater homogeneity in strategy intentions than in actual decision-making or strategy outcomes. If intentions influence strategic decisions and decisions influence the realized strategy, the effects of institutional isomorphism might be to lead to greater homogeneity over time in firm's strategies. This would be one possible issue to be examined in longitudinal studies of institutionalization and strategy. The point in the strategy process at which institutional forces are most influential is an issue that merits additional investigation.

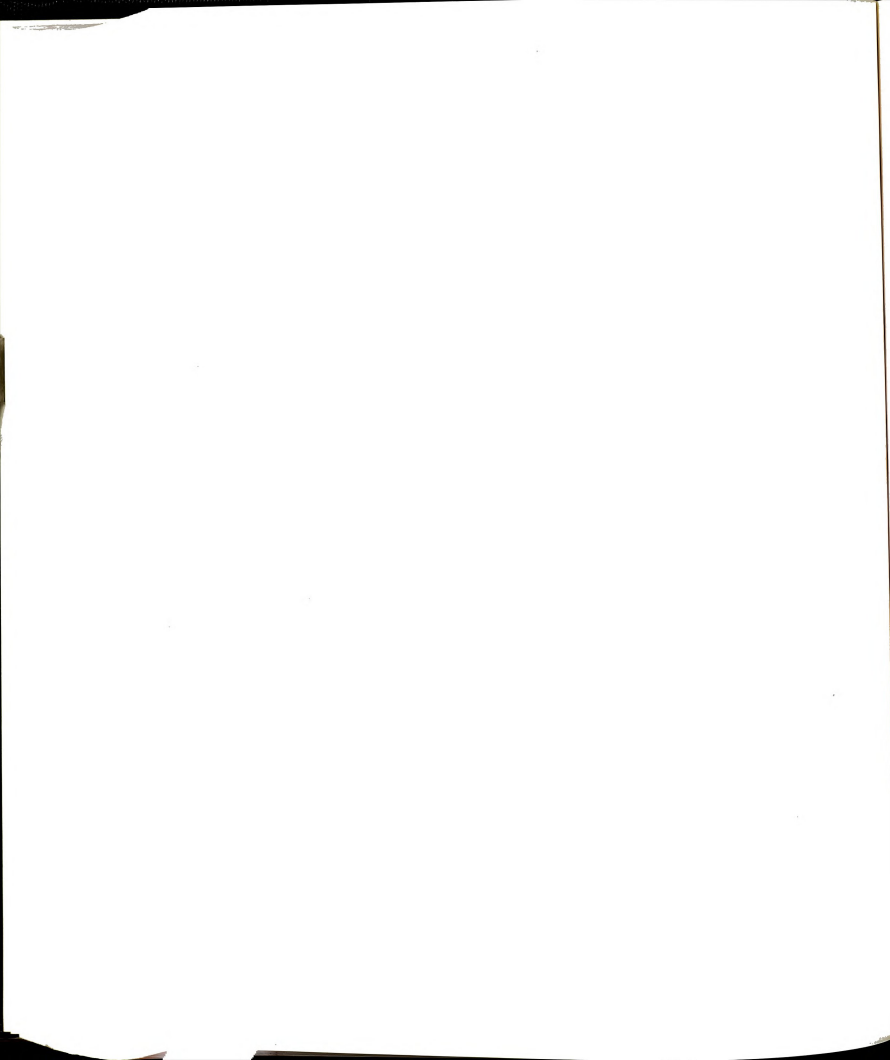
In addition, while this research dealt with business-level strategies, there are also corporate-level strategies of firms. These involve the decisions concerning the industries or business segments in which a firm will compete (Schendel and Hofer, 1979; Andrews, 1971). Included in this domain are issues of diversification (Bettis, 1981;



Rumelt, 1974), merger and acquisition (Jemison and Stikin, 1986; Lubatkin, 1983), and divestiture (Harrigan, 1981b). It seems plausible that a series of research hypotheses could be developed for corporate-level strategies using the basic institutional perspective used in this research. Firms with greater institutional forces for isomorphism would be likely to exhibit greater homogeneity in their corporate strategies than those with lower levels of isomorphic pressures. The recent wave of mergers among firms in the United States might be due to institutional pressures such as the effects of large investors on management to increase returns and shareholder value. If companies are dependent on large investors for financial fitness and legitimacy, they may be more apt to pursue merger and acquisition strategies than firms that are privately owned or are not dependent on a single large shareholder for financial resources. Additional research should be conducted to address questions of institutional isomorphism and corporate strategy.

5.5 Limitations and Implications

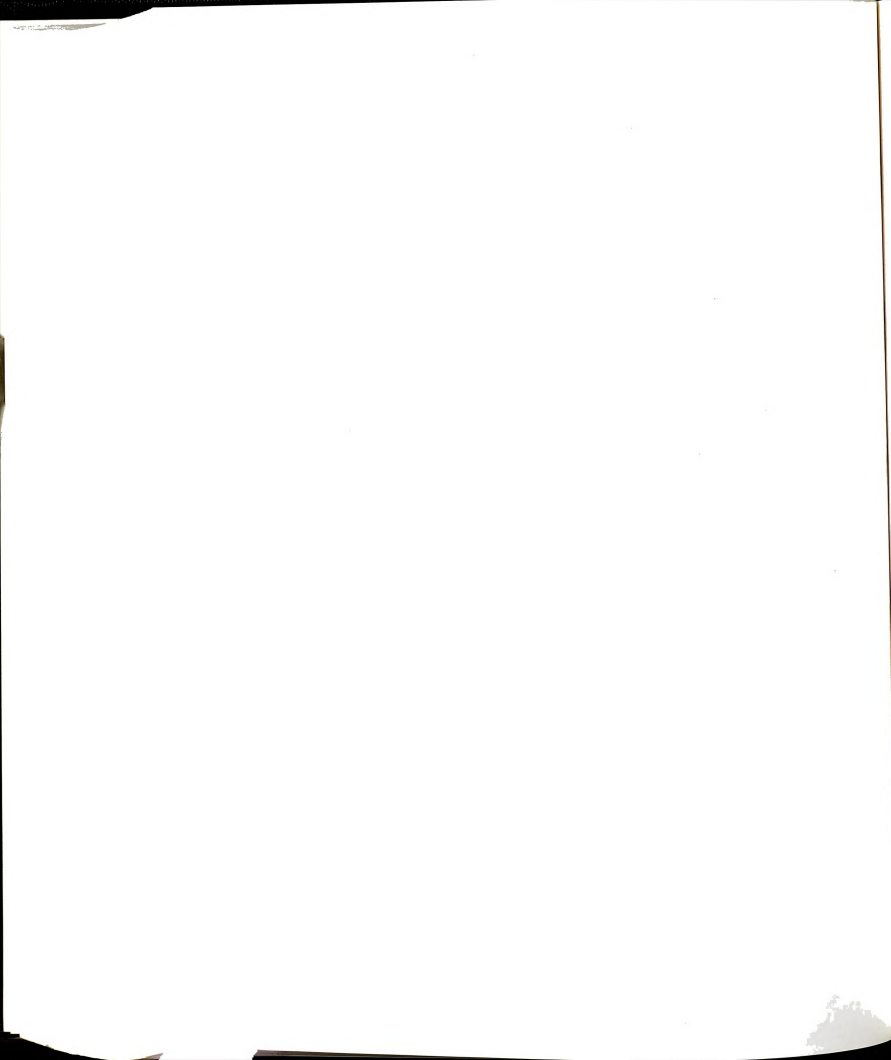
While the findings gave general support to the basic contention of this research, that is, greater levels of institutional isomorphic forces would lead to greater homogeneity in the business strategies of firms within an organization field, several limitations must be considered in evaluating the results of the study. One significant issue concerns the sample of firms in the study. This research focused on firms in the organization field defined as "auto supplier firms."



The results, while significant, cannot be generalized to other firms in other fields. The preceding discussions of the effects of institutionalization, interorganizational relations, and field structures illustrate the difficulty in taking results obtained in one organization field and extending them to others. There is a need for additional research to replicate the results of this study in other organization fields.

A second limitation is imposed by the sampling procedure. Though the basic characteristics of the firms that responded to the study did not differ from non-respondents, it is difficult to assert that there are no systematic differences. Non-responders may have differed in any number of characteristics, which might have influenced the results obtained. This may limit the ability to generalize the results to the entire population of auto supplier firms. While many firms were contacted, participation in the study was limited to those who returned surveys. In effect, firms were self-selected into the sample population. While there were no organization differences between responders and non-responders in terms of size, the components manufactured, or the manufacturing processes employed, any systematic differences in the strategies between responders and non-responders would not have been detected in the study and might bias the results. There is a need to perform additional research on other supplier firms in order to improve the generalizability of the study.

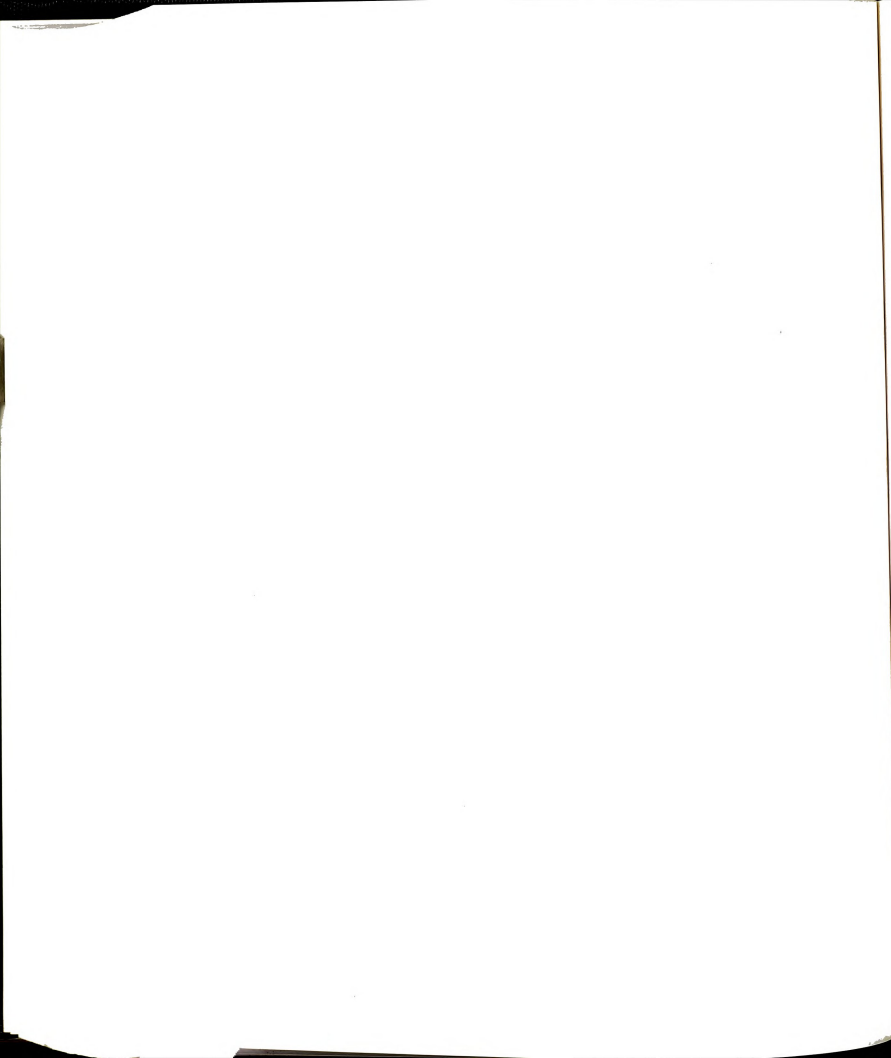
Also, the auto industry in 1989 - the time period of the study - was in a state of flux insofar as the relations among suppliers and the OEM manufacturers were concerned. The 1988 and 1989 periods were



relatively healthy for the industry, yet there were signs at the close of 1989 that a slowdown in the performance of the auto industry was imminent. The nature of the industry at the time of the study may affect supplier's assessments of their strategies and may influence their strategic decisions. Changes in the industry might lead to changes in the strategies of supplier firms. This reinforces the previous discussion of the effects of time on institutional forces and the need for longitudinal research to investigate changes in field structure on isomorphic forces.

Other isomorphic mechanisms might have affected the results but were not considered in this research. These include government regulation, dependence on suppliers, the legislative environment, and social and cultural forces. While the selection of a single industry as the organization field is intended to control for many of these factors by equalizing the effects across firms, the measurement model focused on a limited number of isomorphic mechanisms. Additional effects from mechanisms as presented in Figure 3-3 might be present and could impact the homogeneity of strategy. Additional research is needed to consider the effects of multiple mechanisms for isomorphism on strategy.

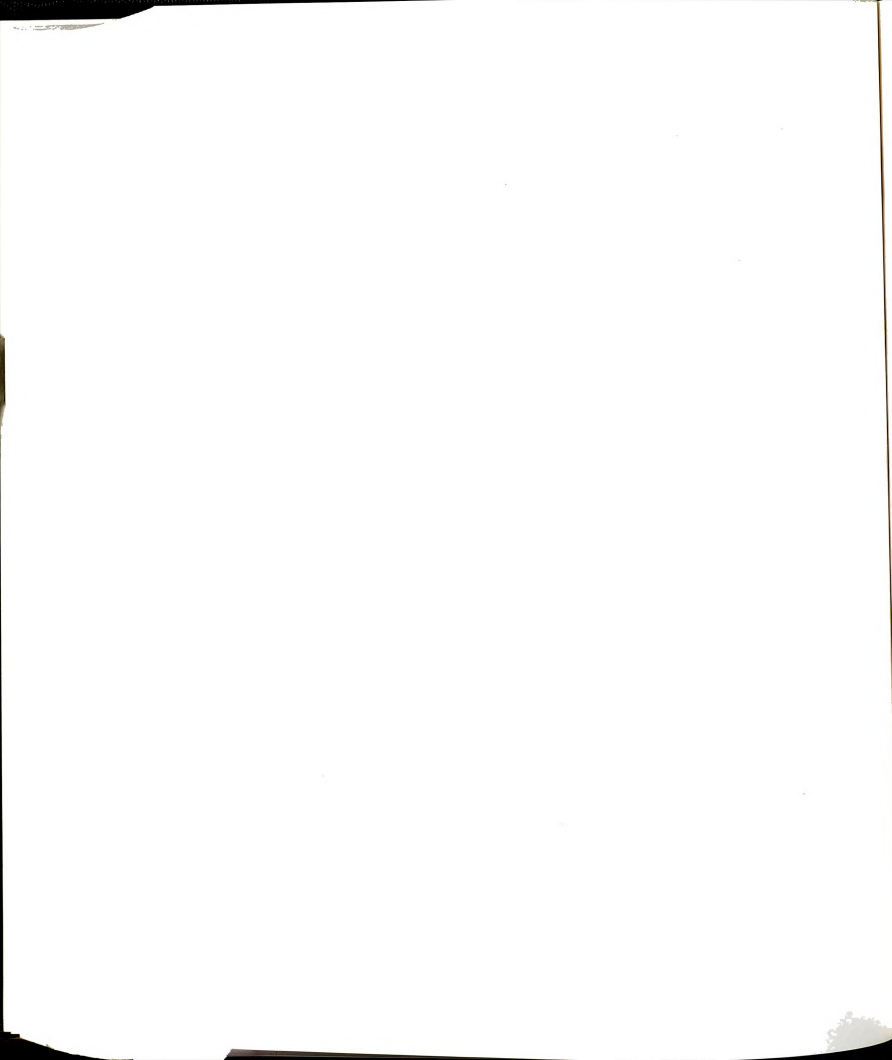
Despite these limitations, the findings in this study add to the literature on institutional theory and organization strategy in several ways. First, the results suggest that institutional forces can affect the business strategies of organizations and result in homogeneity in strategy. This is in contrast to the dominant view of strategy that emphasizes differentiation and heterogeneity. The research reported



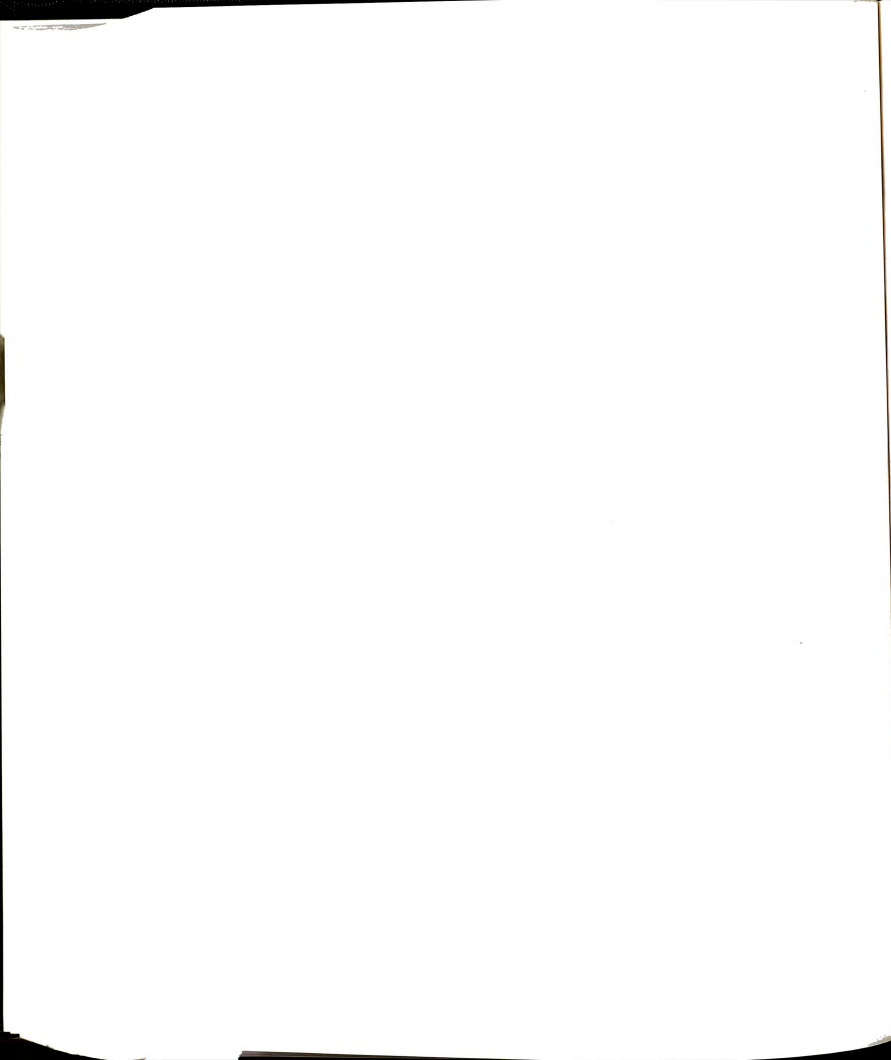
here suggests that researchers in organization strategy would do well to attend to similarity as well as differentiation in assessing the strategic behavior of corporations.

Second, this study extends the field of institutional theory from studies of firm structure (Meyer et al., 1988) and non-strategic firm behavior (Galaskiewicz and Wasserman, 1989) explicitly into the strategy domain. Since strategy is central to many of the activities of organizations, the use of institutional theory within the strategy field adds to the utility of institutional theory as an explanatory model for the organization sciences. In addition, this study has called attention to several needed areas of research on institutional theories of organizations and has suggested some tentative hypotheses are issues for further investigation. This forms a framework for additional research and inquiry to improve the understanding of institutional phenomena.

Third, this study suggests several issues that might be of importance to strategists in organizations. By attending to institutional as well as competitive market forces, strategists might be able to develop greater understanding of the forces that affect their firms. In this way, decision-makers can develop more comprehensive strategies through a greater awareness of the firm's environment. The data suggest that homogeneity may be more prevalent than many executives would expect. By drawing attention to homogeneity, the study expands the understanding of strategic decisions and the effects of those decisions on firm's competitive behaviors within an industry.



By drawing attention to the presence of institutionalization and isomorphic forces among firms in organizational fields, this study has added to both the institutional framework on organizations and to the field of organization strategy. Though exploratory in nature, the results suggest that there is much to be gained from an understanding of the effects of institutional isomorphism and homogeneity of strategy for both researchers and practitioners. It is hoped that future efforts will continue to develop greater awareness and knowledge of these important factors of organizational life.



APPENDICES

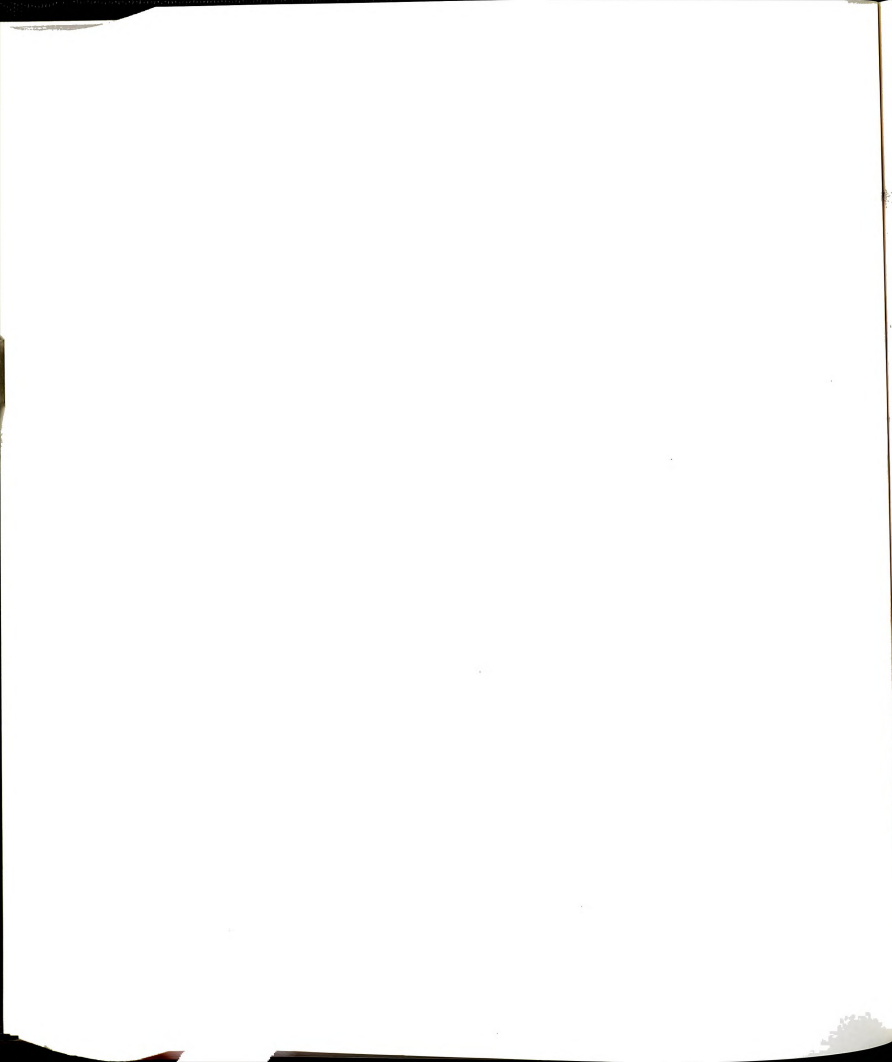


Table A-1
Operationalization of the Independent Variables in the Study

Institutional Mechanism	Operationalization	Measurement	Survey Items
Coercive:			
1. Customer Dependence	Percentage of Revenue from Same Customers	<u>Firm Sales to Manufacturer</u> Total Firm Sales	B1, B2a, B2b, B2c
2. Anticipated Dependence	Forecast change in sales to auto manufacturers, next five years	9-point scale, from +4 to -4	E1, E2, E3
Mimetic:			
1. Perceived Environmental Uncertainty	Managerial self-reports of level of uncertainty in 6 areas	7-point Likert scale on items from Miles and Snow PEU scale	K1a through K6c
Normative:			
1. Executive Tenure	Length of time the CEO has been in the industry	Number of years within the industry	I3
2. Employment with Other Firms	The number of firms within the industry with whom the CEO has been employed	Number of auto-related firms in CEO's career	I4
3. Similar Executive Education	Number of CEO's with same terminal degree, major; within 2 years	Number of linkages in matrix of education experience	I1 and Matrix Analysis
4. Trade Association Membership	Number of firms belonging to the same industry or trade group	Number of linkages in matrix of trade association members	H1 and Matrix Analysis
5. Common Information Sources	Number of firms who use the same Industry Information Sources	Number of linkages in matrix of information sources	H3 and Matrix Analysis
6. Common Consultants	Number of firms using the same organizational Consultants	Number of linkages in matrix of Consultants	H2 and Matrix Analysis

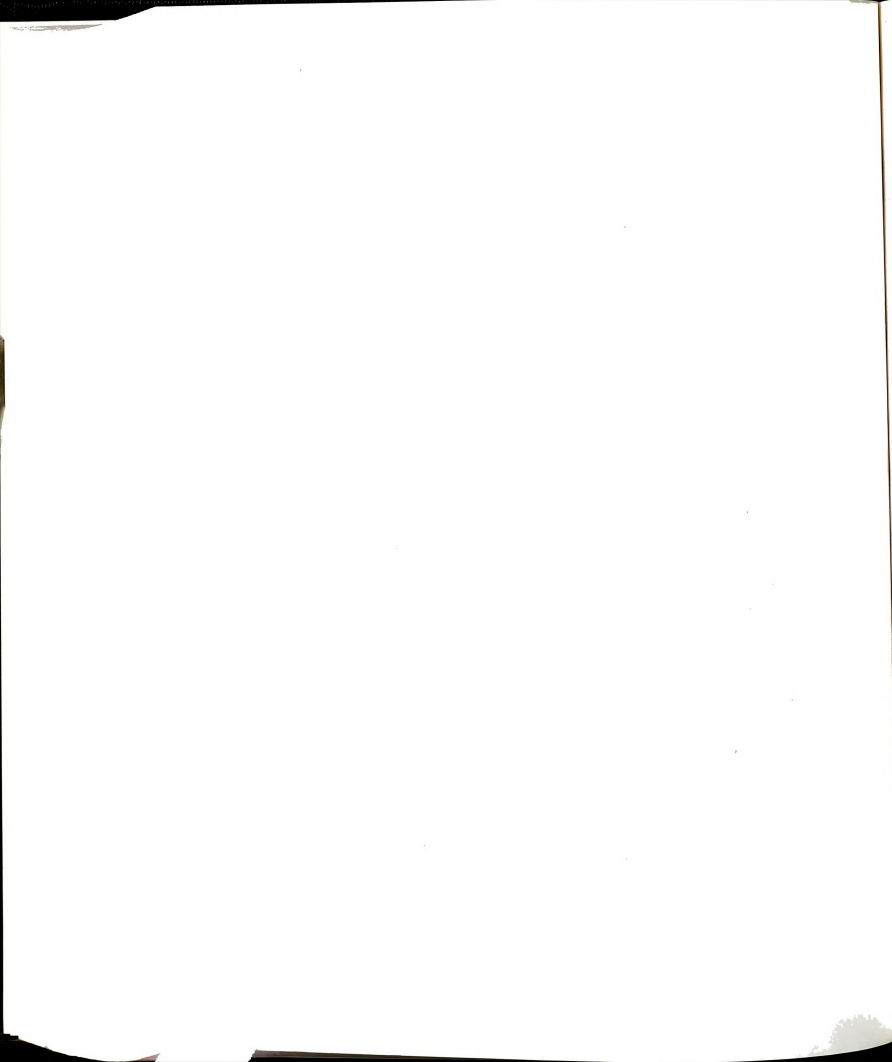
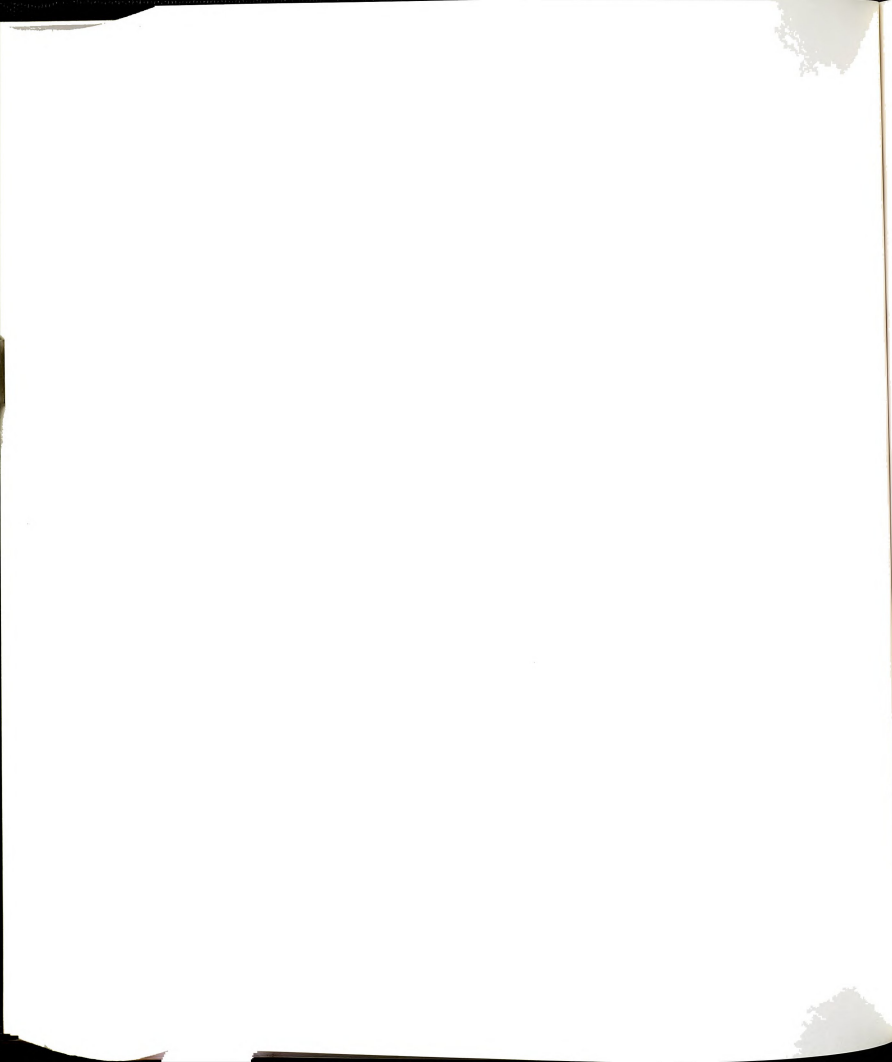


Table A-2
Measurement of the Dependent Variables in the Study: Actual Business Strategy

Variable Name	Measurement	Survey Items
1. Technological Change	Extent of major changes in technology, last 5 years	E13
2. Relative Compensation	Status of firm's wages relative to competitors	D1
3. Product Quality Avg.	Percentage of products superior to competitors Products minus percentage inferior to competitors	D5a - D5c
4. Relative Price	Status of firm's prices relative to competitors	D2
5. Market Share	Sales of the business as percentage of total market	C1, C2
6. New Products, % of Sales	Percentage of firm sales from products introduced in the last 2 years	B4
7. Product R&D/Revenue Avg.	Product and service R&D expenses/Net Sales	C4/B1
8. Process R&D/Revenue Avg.	Process R&D expenses/Net Sales	C5/B1
9. Inventory/Revenue Avg.	Total Inventory/Net Sales	C9/B1
10. P & E Newness Avg.	NBV, Plant & Equipment/CBV, Plant & Equipment	C11/C10
11. Invest./Revenue Avg.	Average investment(book value)/Net Sales	C11/B1
12. Capacity Util. Avg.	Percentage of capacity utilization	C3
13. Sales/Employee Avg.	Total sales/number of employees	B1/A1
14. Revenue/Employee Avg.	Net revenue(profit)/number of employees	C12/A1
15. Sales Force/Revenue Avg.	Sales Force Expenses/Net Sales	C6/B1
16. Advertising/Revenue Avg.	Advertising & Promotion Expenses/Net Sales	C7/H1
17. Relative Sales Expense	Status of firm's sales and advertising expenditures relative to competitors	D3





Auto Supplier Industry Research Project

Auto Supplier Survey

The purpose of this study is to examine some of the environmental factors which might have an influence on the strategy formulation and performance of auto supplier firms. Participants are requested to respond to the items in the questionnaire as accurately and completely as possible.

Participation of firms in this study is strictly voluntary, and firms are free to discontinue their participation at any time without penalty.

All results from this study will be treated with strict confidentiality. Firms can be assured that their individual responses will remain confidential and that the anonymity of their response will be preserved. Due to the nature of the material in this survey, **NO INDIVIDUAL FIRM DATA CAN BE MADE AVAILABLE TO ANY PERSON OR ORGANIZATION.**

However, aggregate industrywide data can and will be made available to interested participants, within the restrictions specified above concerning confidentiality of responses. Participants wishing a copy of the summary aggregated industry data should contact the project director at the address given below.

By participating in this research project, respondents are giving consent to the use of the data for scientific research purposes.

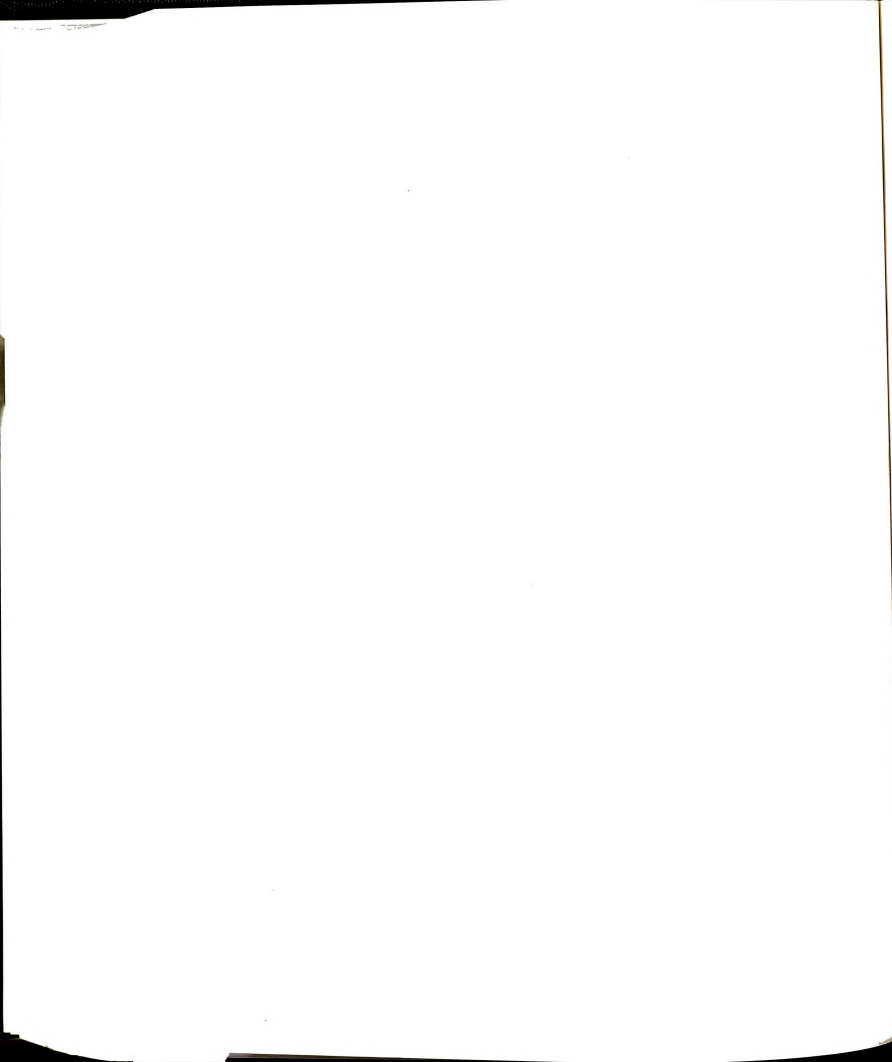
If you have any questions regarding this research project, contact:

Aaron A. Buchko, Project Director
Auto Supplier Industry Research Project
227 Eppley Center
Michigan State University
East Lansing, MI 48824-1121

PHONE: (517) 353-5415

DIRECTIONS

This survey consists of ten sections. Please read each item carefully and respond as indicated by the question. Respond to as many items as you possibly can. If necessary, this survey may be given to other executives to provide the requested information. Return the survey promptly using the enclosed postage-paid envelope.



AUTO INDUSTRY SUPPLIER SURVEY

Firm ID: _____

COMPANY DATA

A. Basic Firm Data

1. This firm has _____ full time employees. (write in the number)
2. Of your total employment, how many employees are represented by a collective bargaining unit (union)? Please list the union(s) and the number of employees represented by each union:

UNION	NO. OF EMPLOYEES
_____	_____
_____	_____
_____	_____

3. This firm was founded in _____ (write in the year).

4. Ownership (check one)

- _____ This firm is privately owned (i.e., sole ownership, partnership, or over 51% of the shares held by one individual or family.)
- _____ This firm is publicly owned (i.e., shares held by many individuals; no one person has ownership control.)

B. Sales Data

1. Total Annual Sales Revenue: \$ _____

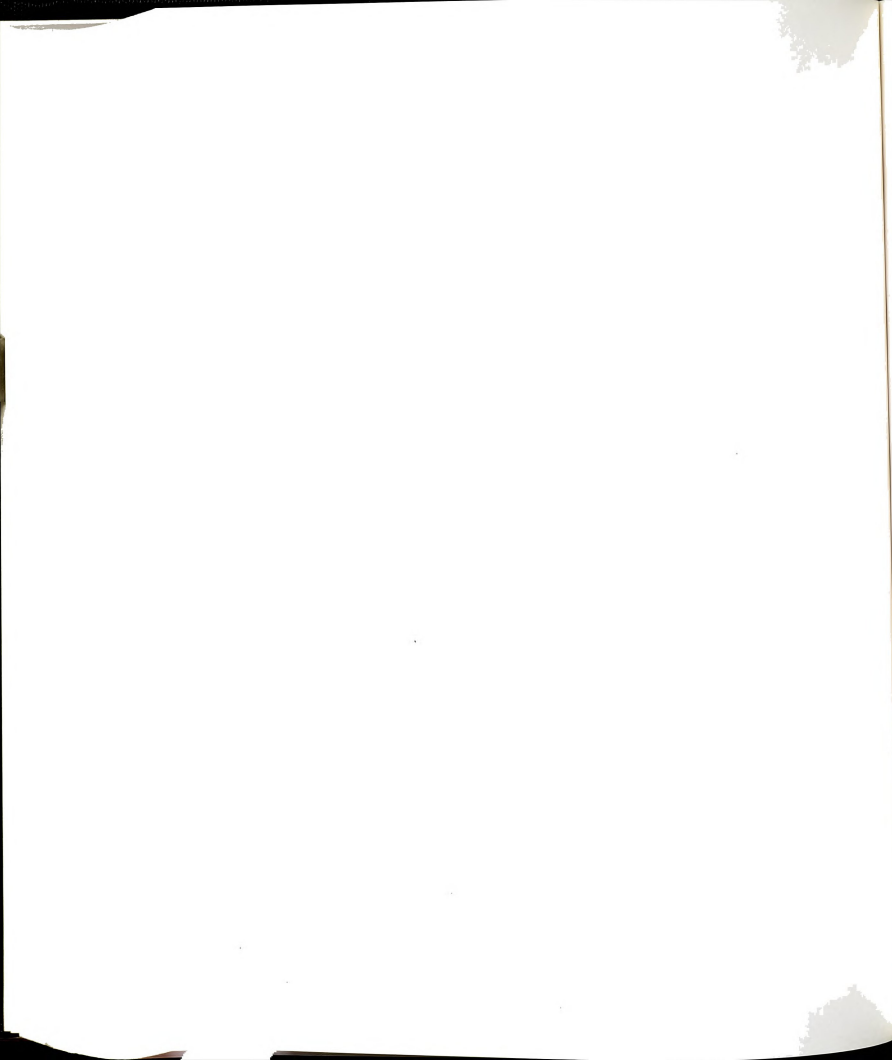
2. Of the firm's total sales revenue, please indicate the amount of sales:

- a. to General Motors: \$ _____
- b. to Ford Motor Co.: \$ _____
- c. to Chrysler Corp.: \$ _____
- d. to a transplant manufacturer:
(e.g., Honda - Marysville,
Diamond Star, HUMM, etc.) \$ _____
- e. to a foreign manufacturer: \$ _____
- e. to another auto supplier firm: \$ _____
- f. to firms outside the auto industry: \$ _____

3. Of the total amount of sales revenue to firms outside the auto industry indicated in question 2e: please indicate the industries other than the auto industry in which your firm participates (e.g., appliances, agricultural implements, etc.) and the sales revenue for each industry segment:

INDUSTRY	REVENUE
_____	\$ _____
_____	\$ _____
_____	\$ _____
_____	\$ _____
_____	\$ _____

4. What percentage of your firm's total sales come from products that were introduced within the last 2 years? (Write in the percentage): _____ %



Auto Supplier Study
Page 2

C. Operating Data

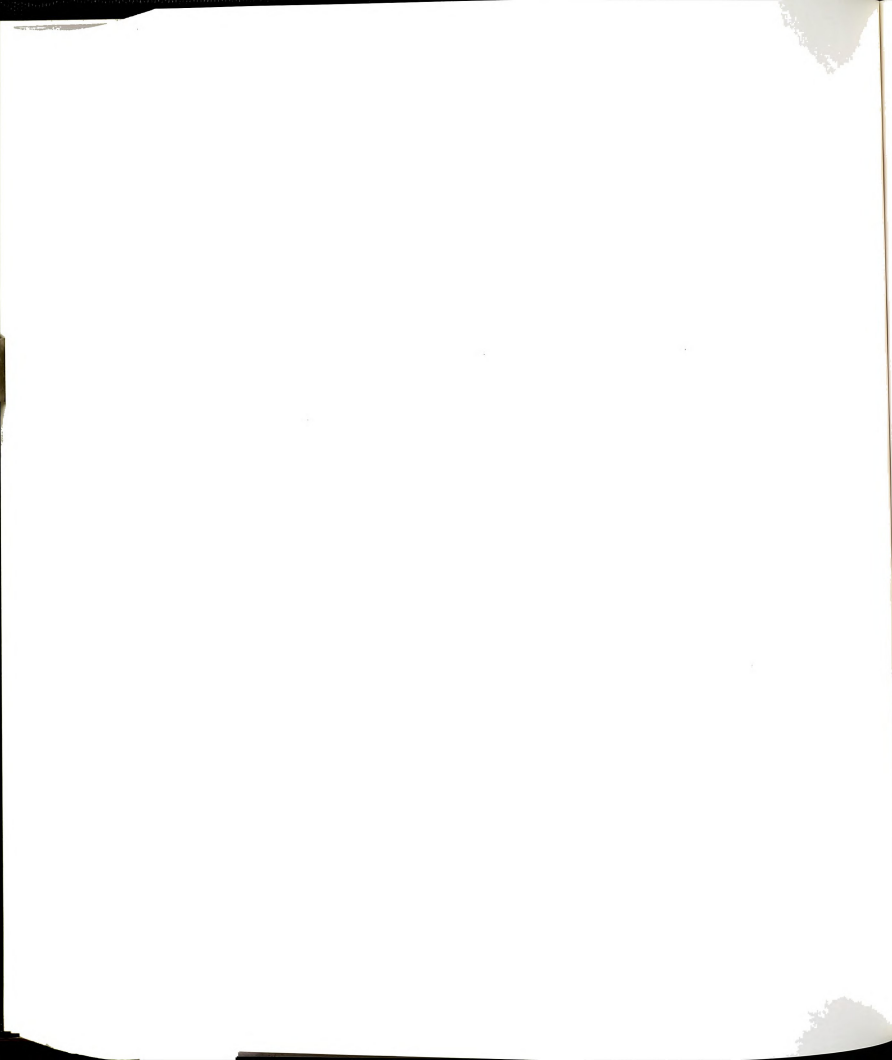
NOTE: Data from the last financial reporting year (fiscal year or accounting year) can be used to provide the information in this section.

1. Size of the Served Market: What is your estimate of the total sales of all markets served by your firm? (Write in the dollar estimate of the market size) \$ _____
2. Market Share: Write in your estimate of your firm's share (as a percentage) of the markets in Question 1: _____ %
3. Capacity Utilization: Write in the percentage of standard production capacity utilized, on average, during the preceding year (including production for delivery): _____ %
4. Annual Product or Service R & D expenditures: Write in the dollar amount of total expenses incurred to improve existing products or services or to develop new products or services within the last year: \$ _____
5. Annual Process R & D expenditures: Write in the dollar amount of total expenses incurred to improve the efficiency of the manufacturing and/or distribution processes within the last year: \$ _____
6. Annual Sales force expenditures: Write in the dollar amount of total expenses incurred for personal selling efforts (includes manufacturer representative commissions, sales representative salaries/commissions, and direct selling expenses) within the last year: \$ _____
7. Annual Advertising/Promotion expenditures: Write in the dollar amount of total expenses incurred for (1) media advertising, (2) catalogs, (3) exhibits and displays, (4) premiums, (5) brochures/fliers, (6) samples, and (7) temporary price reductions for promotional purposes within the last year: \$ _____
8. Net Receivables: Write in the average dollar value of receivables for the year net of bad debt allowances: \$ _____
9. Finished Goods Inventory: Write in the average dollar of inventory for the year, net of reserves for losses: \$ _____
10. Gross Book Value of Plant and Equipment: Write in the original dollar value of buildings, land, and manufacturing equipment, plus all transportation owned: \$ _____
11. Net Book Value of Plant and Equipment: Write in the dollar book value net of accumulated depreciation to date: \$ _____
12. Net Profit: Write in the firm's net profit for the last accounting year (Note: this information will be kept strictly confidential!): \$ _____
13. Indicate the frequency with which major changes occur in the products or services offered by your firm: (circle one)

No Change	Infrequently			Rather Often		Very Often	
0	1	2	3	4	5	6	7

14. To what extent have there been major changes in the production processes or technology of the firm in the last 8 years: (circle one)

No Change	Moderate Change			Significant Change			
0	1	2	3	4	5	6	7



Auto Supplier Study
Page 3

D. Competitive Assessment

1. Relative Compensation: Estimate the relative status of your firm's wages compared to your competitors on the following scale:

Firm's wages more than 10% LOWER than competitors: []
 Firm's wages 1 - 10% LOWER than competitors: []
 Firm's wages EQUIVALENT to competitors: [] (check one)
 Firm's wages 1 - 10% HIGHER than competitors: []
 Firm's wages more than 10% HIGHER than competitors: []

2. Relative Prices: Estimate the average selling prices of this firm's products and services compared to your competitors on the following scale:

Firm's prices more than 10% LOWER than competitors: []
 Firm's prices 1 - 10% LOWER than competitors: []
 Firm's prices EQUIVALENT to competitors: [] (check one)
 Firm's prices 1 - 10% HIGHER than competitors: []
 Firm's prices more than 10% HIGHER than competitors: []

3. Relative Sales/Promotion Expenses: Estimate the expenditures on sales force and advertising activities, relative to your competitors, on the following scale:

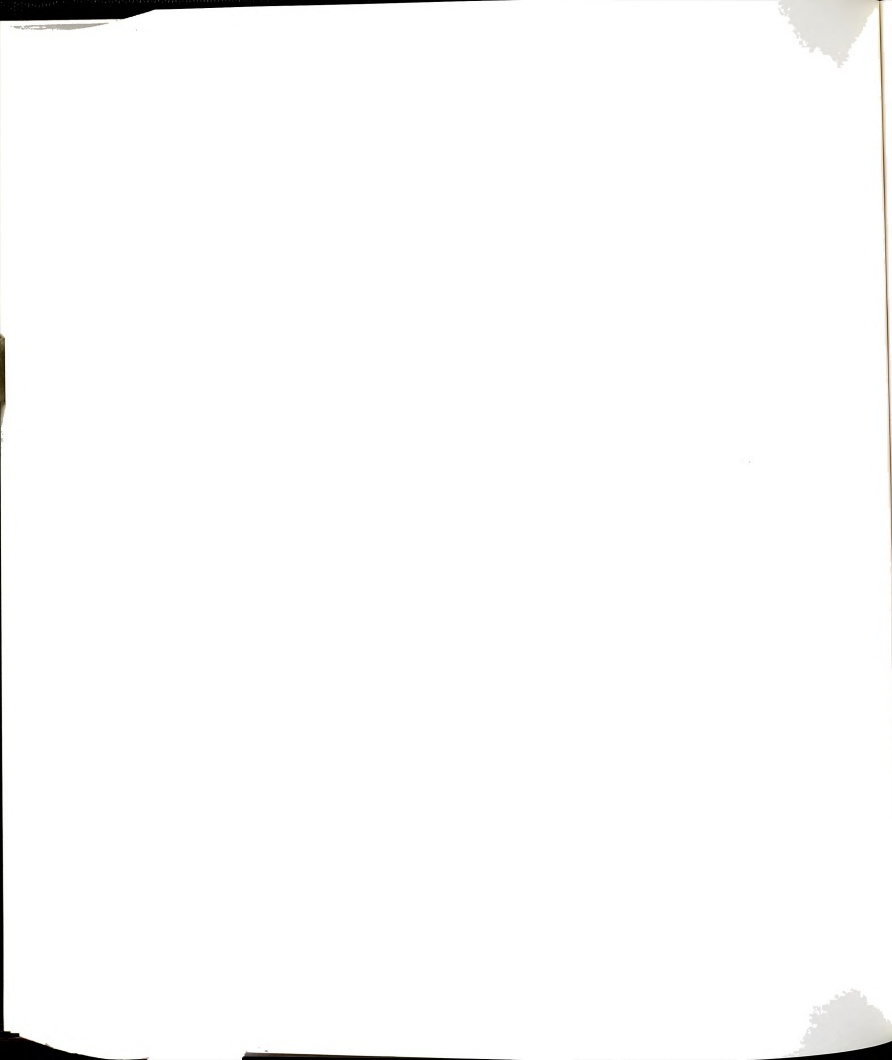
Firm's expenses more than 10% LOWER than competitors: []
 Firm's expenses 1 - 10% LOWER than competitors: []
 Firm's expenses EQUIVALENT to competitors: [] (check one)
 Firm's expenses 1 - 10% HIGHER than competitors: []
 Firm's expenses more than 10% HIGHER than competitors: []

4. Relative R & D Expenses: Estimate the expenditures on product and process R & D activities relative to your competitors on the following scale:

Firm's expenses more than 10% LOWER than competitors: []
 Firm's expenses 1 - 10% LOWER than competitors: []
 Firm's expenses EQUIVALENT to competitors: [] (check one)
 Firm's expenses 1 - 10% HIGHER than competitors: []
 Firm's expenses more than 10% HIGHER than competitors: []

5. Relative Product Quality: Estimate the percentage of this firm's products and services which are considered by customers as "Superior," "Equivalent," or "Inferior" to those offered by competitors (write in the appropriate percentages)

Superior: _____ % Equivalent: _____ % Inferior: _____ %



Auto Supplier Study
Page 4

E. Projected Activity

On a scale of -4 (significant decrease) to +4 (significant increase), please provide your best assessment of your firm's projected behavior in the following activities over the next five years.

(Circle the appropriate response)

	Decrease	Remain the same	Increase
1. Over the next five years, this firm's sales to auto manufacturers (OEMs) are likely to:	-4 -3 -2 -1 0 +1 +2 +3 +4		
2. Over the next five years, this firm's sales to other auto industry suppliers are likely to:	-4 -3 -2 -1 0 +1 +2 +3 +4		
3. Over the next five years, this firm's sales to firms outside the auto industry are likely to:	-4 -3 -2 -1 0 +1 +2 +3 +4		

F. Projected Operating Activity

On a scale of -4 (significant decrease) to +4 (significant increase), please provide your best assessment of your firm's projected behavior in the following operating areas over the next five years.

(Circle the appropriate response)

	Decrease	Remain the same	Increase
1. (Over the next five years) This firm's market share is likely to:	-4 -3 -2 -1 0 +1 +2 +3 +4		
2. (Over the next five years) This firm's production capacity is likely to:	-4 -3 -2 -1 0 +1 +2 +3 +4		
3. (Over the next five years) This firm's investment in engineering activities is likely to:	-4 -3 -2 -1 0 +1 +2 +3 +4		
4. (Over the next five years) This firm's investment in plant and equipment is likely to:	-4 -3 -2 -1 0 +1 +2 +3 +4		
5. (Over the next five years) This firm's expenses for product research and development are likely to:	-4 -3 -2 -1 0 +1 +2 +3 +4		
6. (Over the next five years) This firm's expenses for manufacturing and process-related research and development are likely to:	-4 -3 -2 -1 0 +1 +2 +3 +4		
7. (Over the next five years) This firm's expenses for sales- and advertising-related activities are likely to:	-4 -3 -2 -1 0 +1 +2 +3 +4		
8. (Over the next five years) This firm's wages and salaries relative to competitors will:	-4 -3 -2 -1 0 +1 +2 +3 +4		
9. (Over the next five years) This firm's prices for products and services, relative to competitors, will:	-4 -3 -2 -1 0 +1 +2 +3 +4		
10. (Over the next five years) This firm's sales revenues will:	-4 -3 -2 -1 0 +1 +2 +3 +4		
11. (Over the next five years) This firm's operating expenses will:	-4 -3 -2 -1 0 +1 +2 +3 +4		
12. (Over the next five years) This firm's operating profit will:	-4 -3 -2 -1 0 +1 +2 +3 +4		

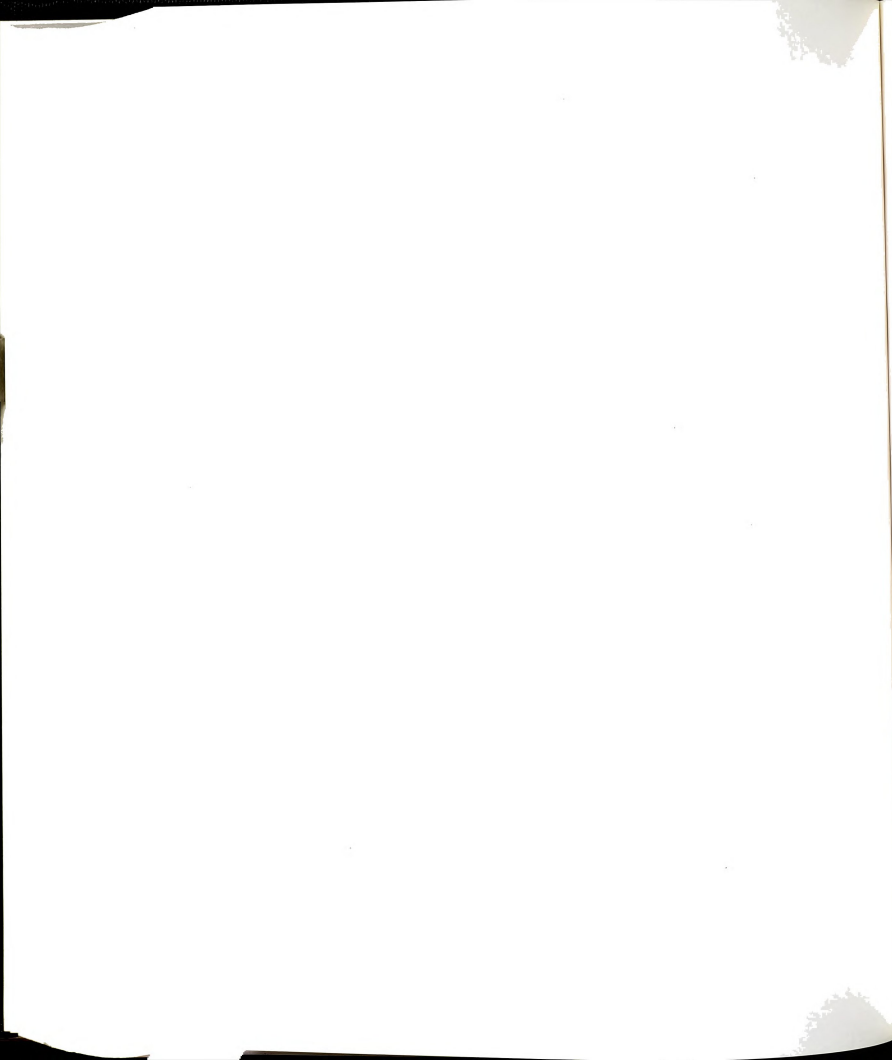
G. Strategic Planning

Does your firm have a formal strategic plan? (check one)

No ☐ (If no, proceed to Section H)
Yes ☐ (If yes, please answer items a-f below)

Which of the following items describes your formal strategic plan? (check all items that apply)

- ☐ a. The time frame of the plan extends two (2) or more years into the future.
- ☐ b. The plan identifies goals and objectives.
- ☐ c. The plan specifies the means by which particular goals and objectives are to be achieved.
- ☐ d. The plan identifies how necessary resources are to be acquired.
- ☐ e. The plan includes procedures for detecting errors or failures and for correcting them on a continuing basis.
- ☐ f. The plan includes one or more contingencies that take competitor's actions into account.



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H. Miscellaneous Firm Data

1. Are you or your company a member of any industry, trade, or national associations? (Examples: American Management Association, National Association of Manufacturers, the Auto Industry Action Group, etc.) (check one):

No ☐ (If no, proceed to Question 2)

Yes ☐ (If yes, please answer item a below)

- a. Please list the major national, industry, or trade associations to which you or your firm belong.

Association Name

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

2. Please list the major industry, trade, and/or professional journals which you read regularly.

Publication (Title)

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____

3. Does your company use any outside consulting firms or individual consultants to assist with planning or operations? (Examples: McKinsey and Company; Booz, Allen; Arthur Andersen and Company; or individuals - academics, former executives, etc.): (check one)

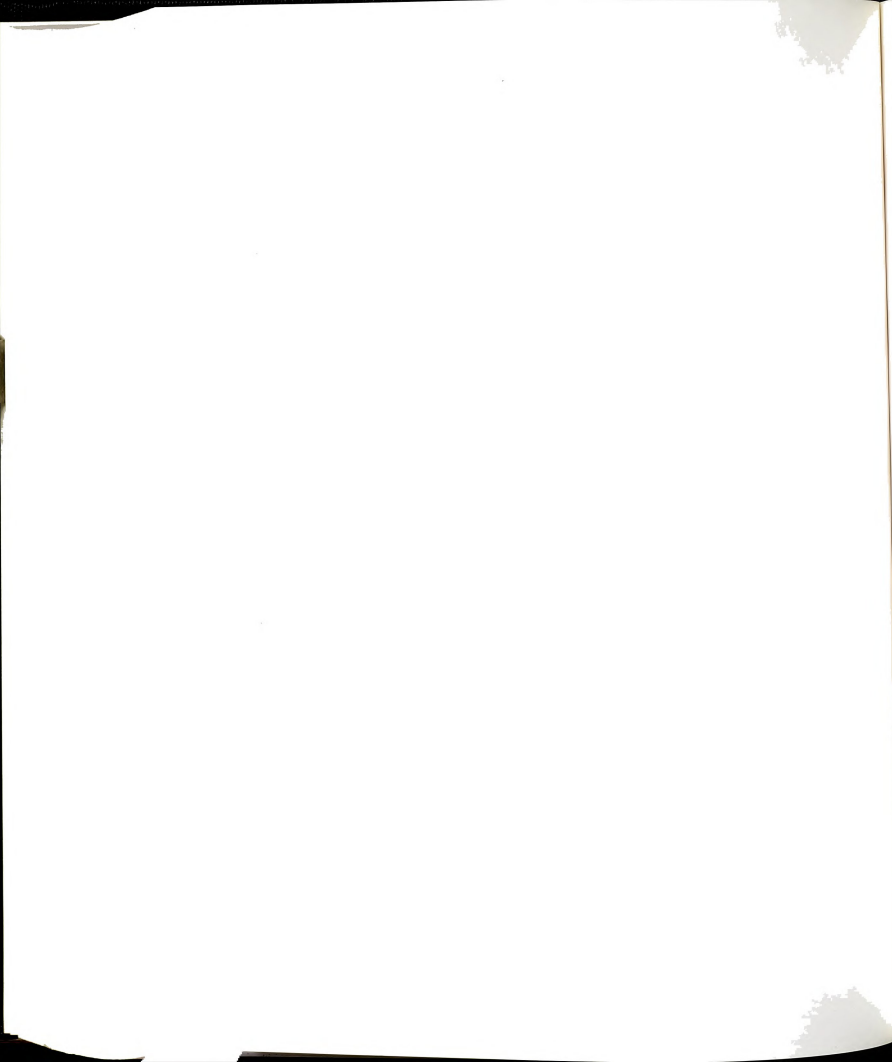
No ☐ (If no, proceed to Section I.)

Yes ☐ (If yes, please answer item a, below)

- a. If yes, please list the major individual(s) and/or organization(s) whose services are utilized by your firm.

Consultant

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____



Auto Supplier Study
Page 6

I. Environmental Perceptions

This study is interested in your perceptions of various sectors of the your environment (e.g., suppliers, customers). Specifically, please rate the characteristics or behavior of various sectors on the degree of their predictability, where 1 = Highly Predictable and 7 = Highly Unpredictable.

1. How predictable are Suppliers of your firm's raw materials and components with respect to: (circle one)

	Predictable			Unpredictable			
a. their price changes	1	2	3	4	5	6	7
b. their quality changes	1	2	3	4	5	6	7
c. their design changes	1	2	3	4	5	6	7
d. introduction of new materials of components	1	2	3	4	5	6	7

2. How predictable are Competitors' actions with respect to: (circle one)

	Predictable			Unpredictable			
a. their price changes	1	2	3	4	5	6	7
b. their product quality changes	1	2	3	4	5	6	7
c. their product design changes	1	2	3	4	5	6	7
d. introduction of new products	1	2	3	4	5	6	7

3. How predictable are Customers with respect to: (circle one)

	Predictable			Unpredictable			
a. their demand for existing products	1	2	3	4	5	6	7
b. their demand for new products	1	2	3	4	5	6	7

4. How predictable are Financial Markets with respect to: (circle one)

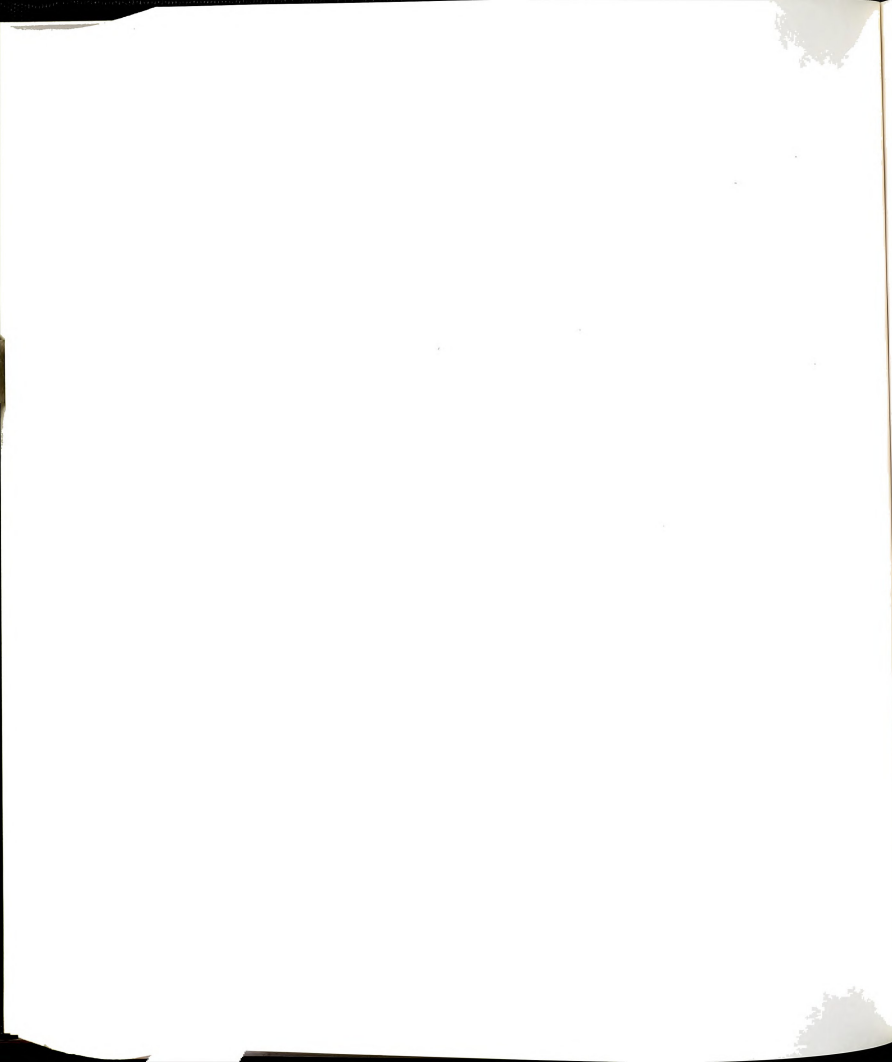
	Predictable			Unpredictable			
a. interest rate changes:							
1. short term debt	1	2	3	4	5	6	7
2. long-term debt	1	2	3	4	5	6	7
b. changes in financial instruments available:							
1. short term debt	1	2	3	4	5	6	7
2. long-term debt	1	2	3	4	5	6	7
c. availability of credit:							
1. short term debt	1	2	3	4	5	6	7
2. long-term debt	1	2	3	4	5	6	7

5. How predictable are Government Regulatory Agencies with respect to: (circle one)

	Predictable			Unpredictable			
a. changes in laws or agency policies on pricing	1	2	3	4	5	6	7
b. changes in laws or policies on product standards or quality	1	2	3	4	5	6	7
c. changes in laws or policies regarding financial practices	1	2	3	4	5	6	7
d. changes in labor (personnel) laws or policies.....	1	2	3	4	5	6	7
e. changes in laws or policies affecting marketing and distribution methods	1	2	3	4	5	6	7
f. changes in laws or policies on acceptable accounting procedures..	1	2	3	4	5	6	7

6. How predictable are the actions of Labor Unions with respect to: (circle one)

	Predictable			Unpredictable			
a. changes in wages, hours, and working conditions.....	1	2	3	4	5	6	7
b. changes in union security.....	1	2	3	4	5	6	7
c. changes in grievance procedures.....	1	2	3	4	5	6	7



1. Education: Please list all colleges and/or universities attended; major field of study; the terminal degree earned (BA, BS, MBA, PhD, etc.); and the date the degree was awarded (month/year), beginning with the most recent degree awarded.

Major

Degree

Date _____

2. Career Path: Please list the positions you have held in your career. List your positions beginning with your current title to the preceding position, etc. Indicate the company name, title, and functional area (Marketing, Finance, Operations, etc.)

Company Name

Title

Functional Area

Current

Position:

[Previous](#)

Position:

Previous
Editions:

Position:
Previous

Previous
Position:

3. Considering the time spent with your present employer as well as previous employers you may have had - how much total experience do you have with firms in the auto industry? That is, how many years you been employed with firms whose primary business is automotive? (write in the number)

years

4. Considering your total career experience: how many different firms have you worked for whose primary business is automotive? (write in the number)

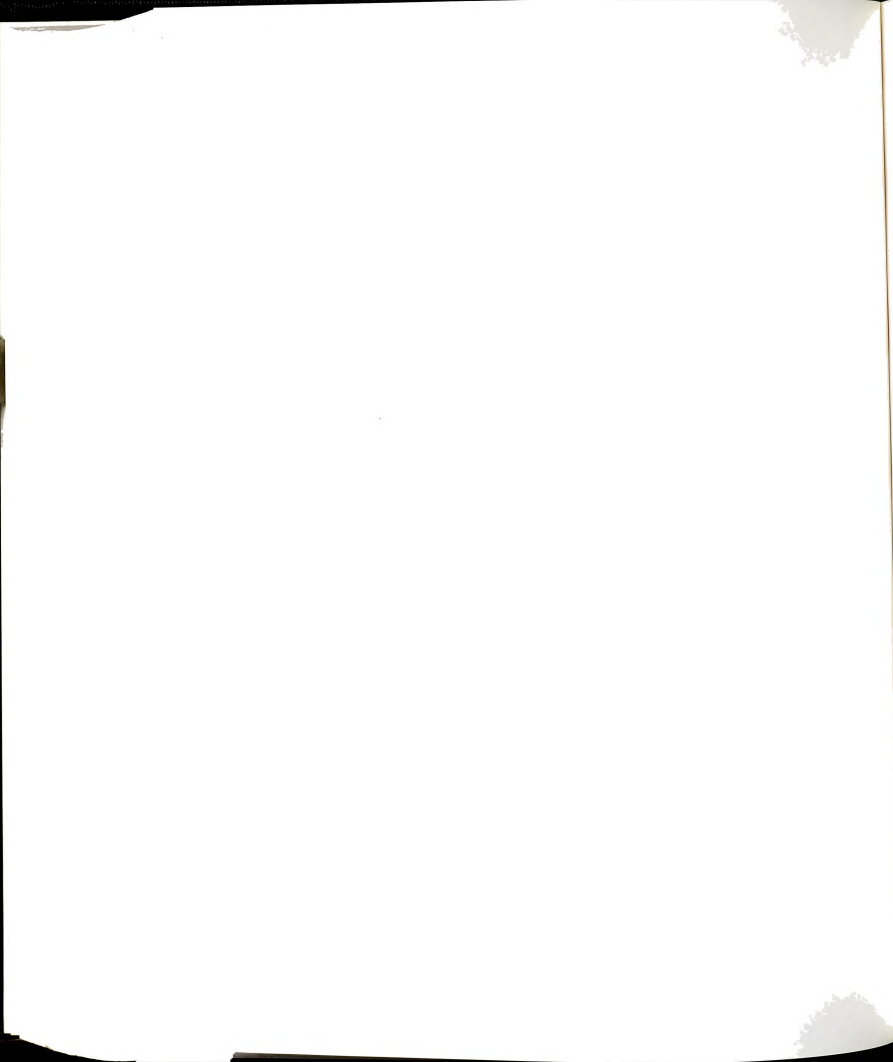
firms

This survey would like information on the composition of your firm's Board of Directors. If the firm is a publicly traded stock company, please list the name and affiliations of the members of your Board of Directors. (You may, if you choose, attach a copy of the listing of the Board of Directors from a recent Annual Report or SEC 10-K form.)

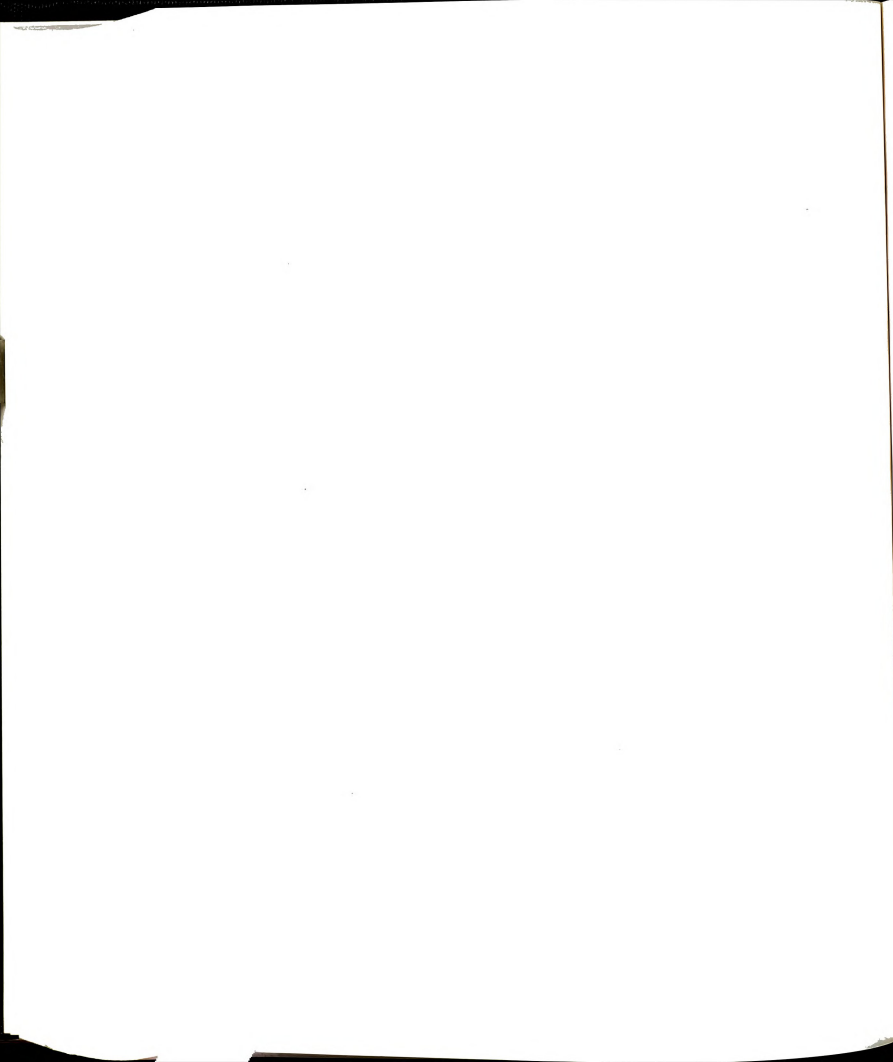
NAME

AFFILIATION
(organization, profession, etc.)

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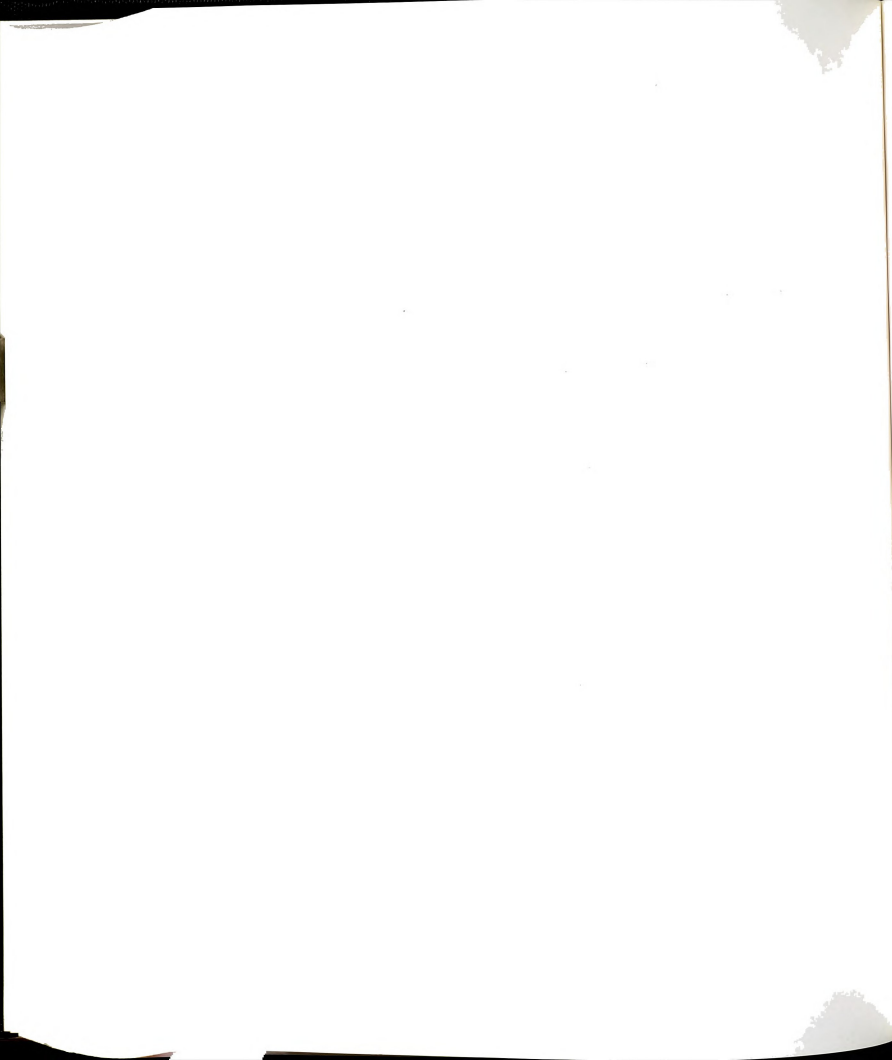


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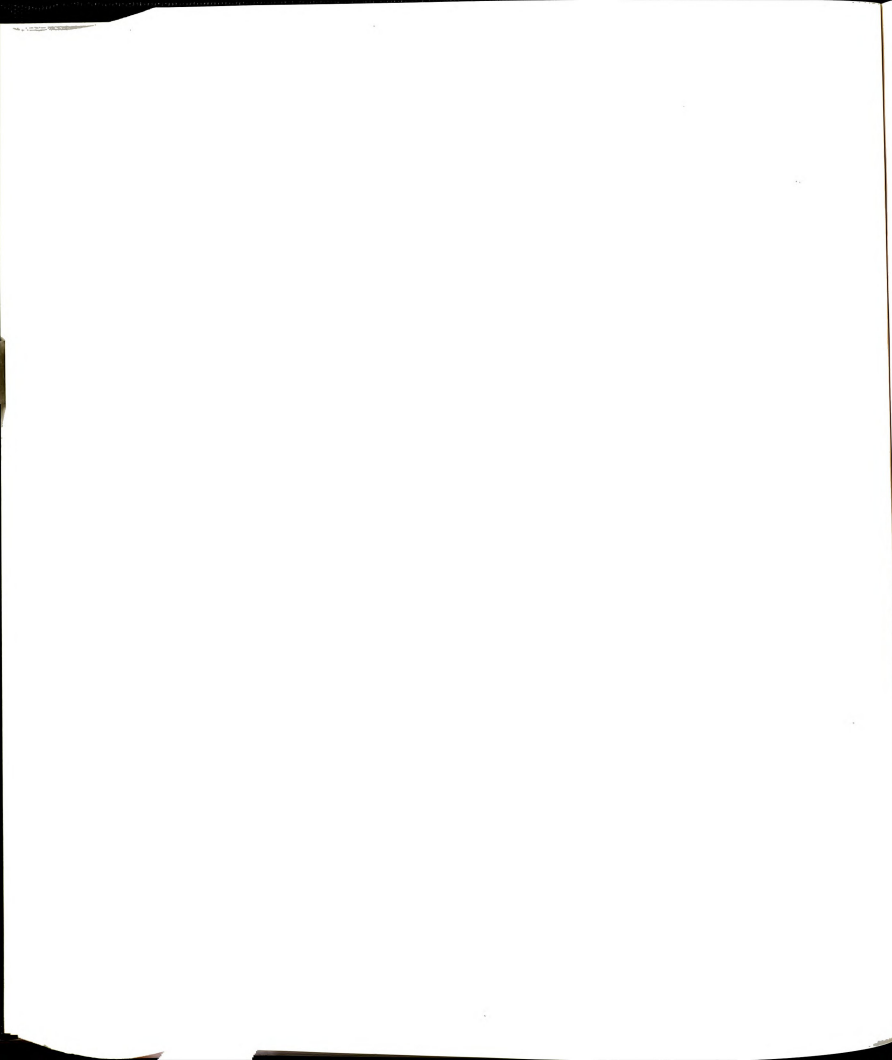


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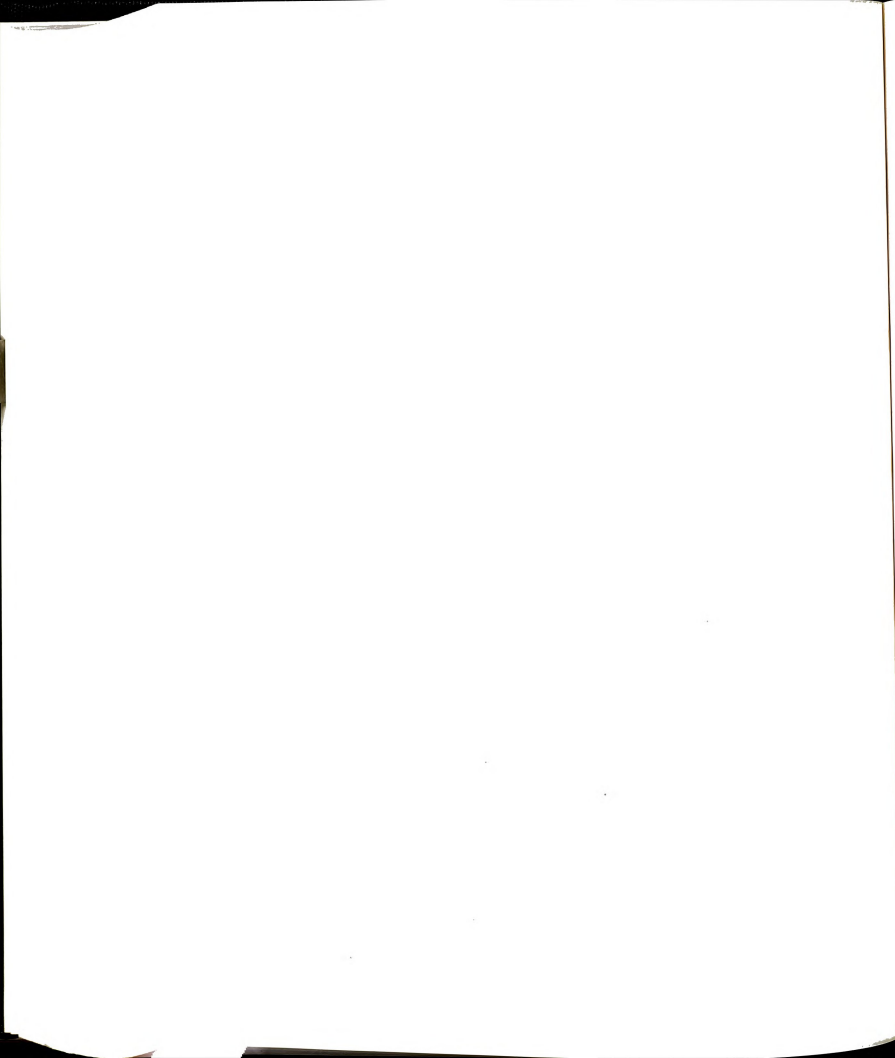
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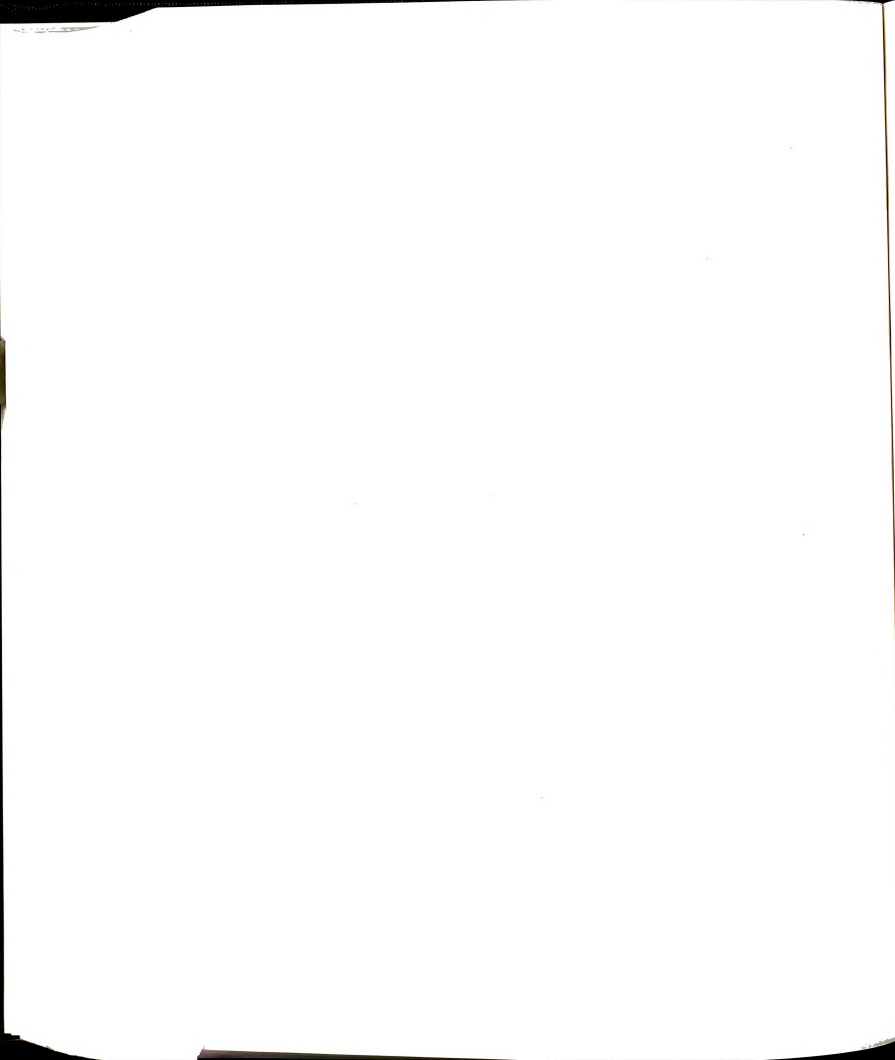
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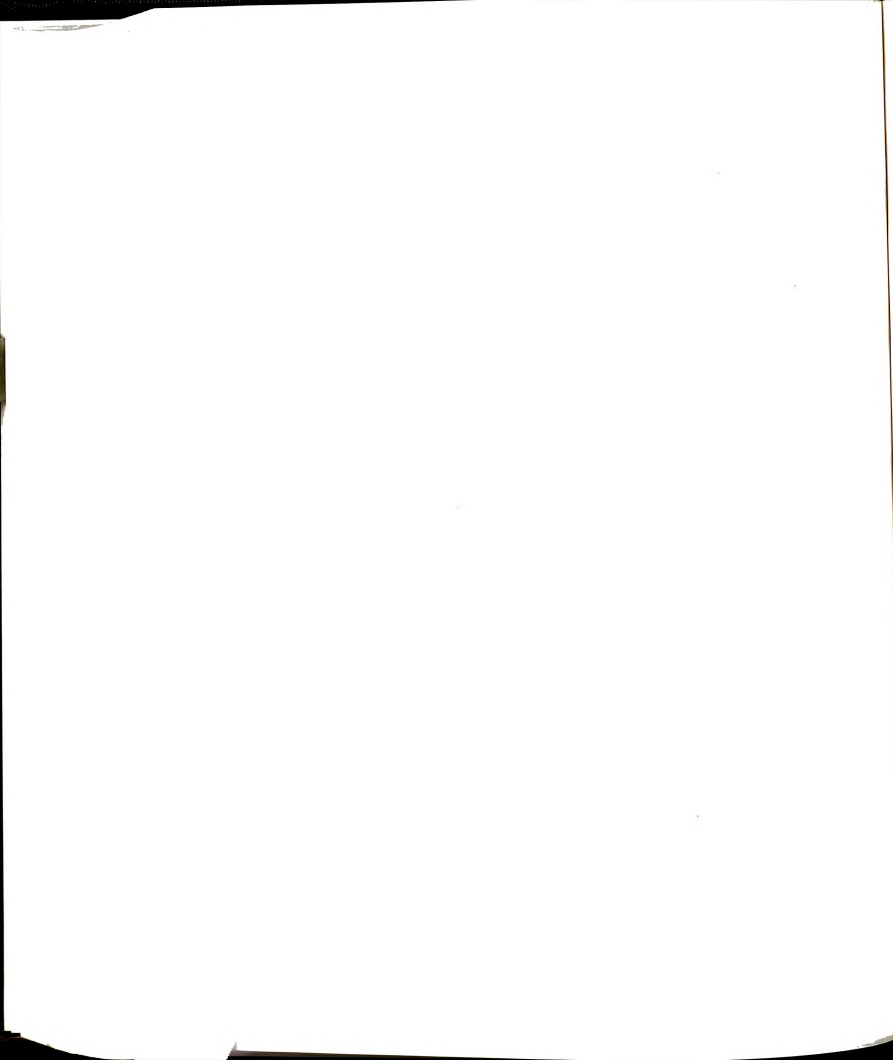
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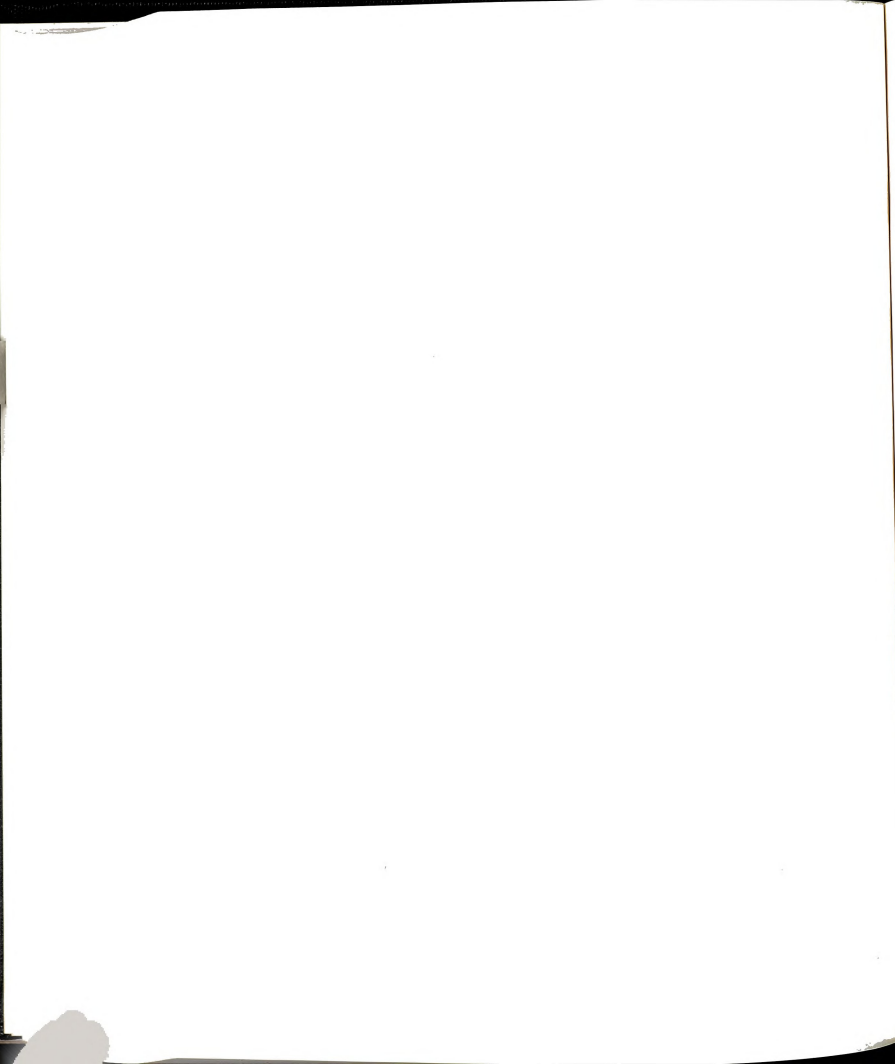
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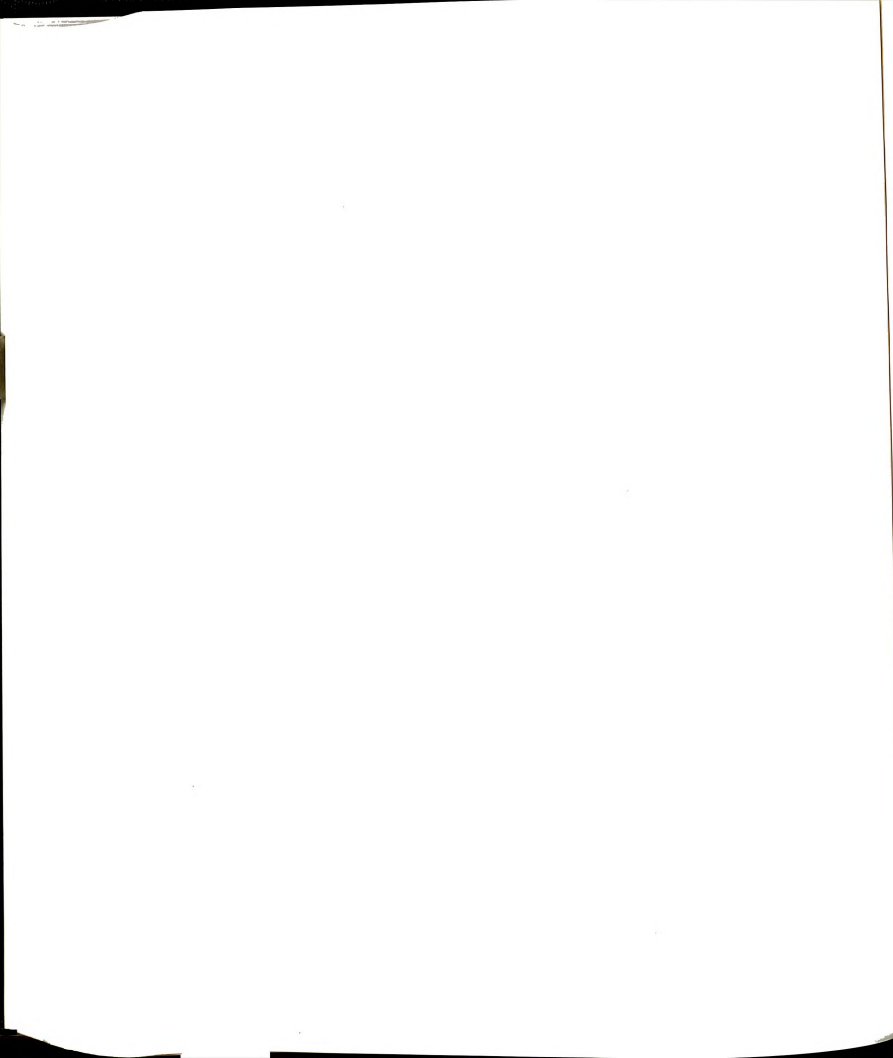
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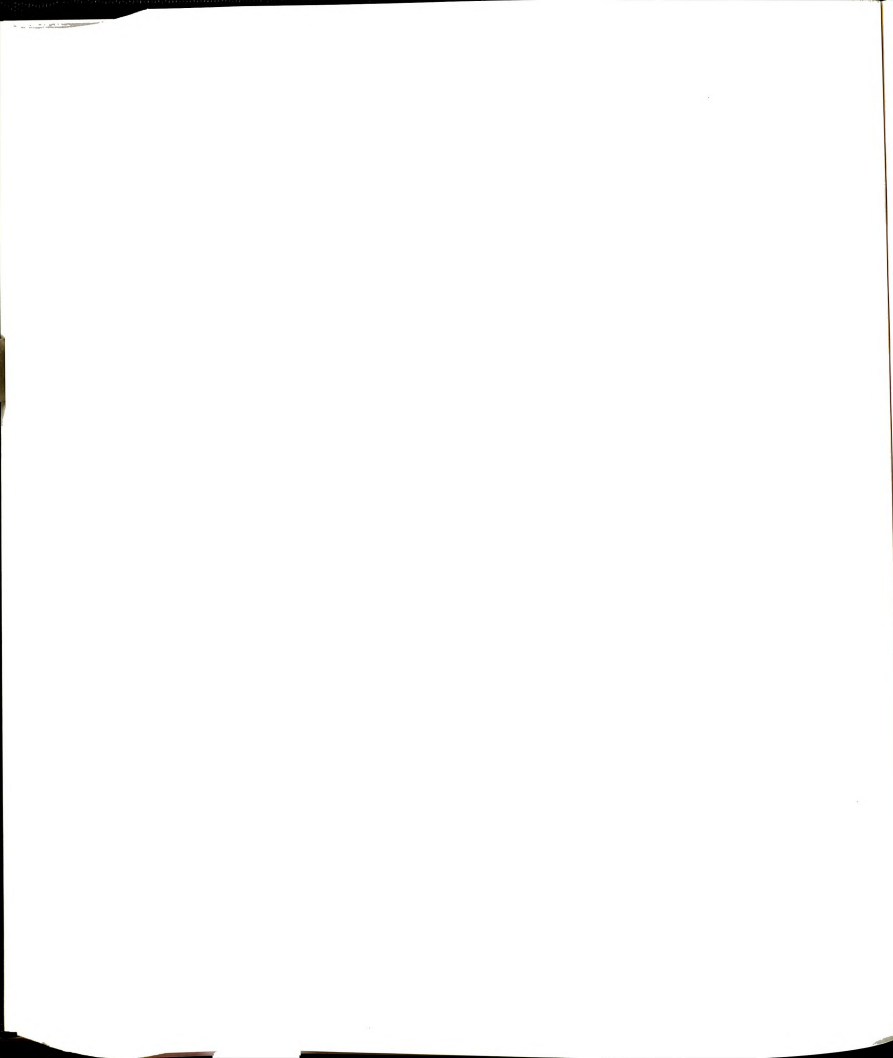
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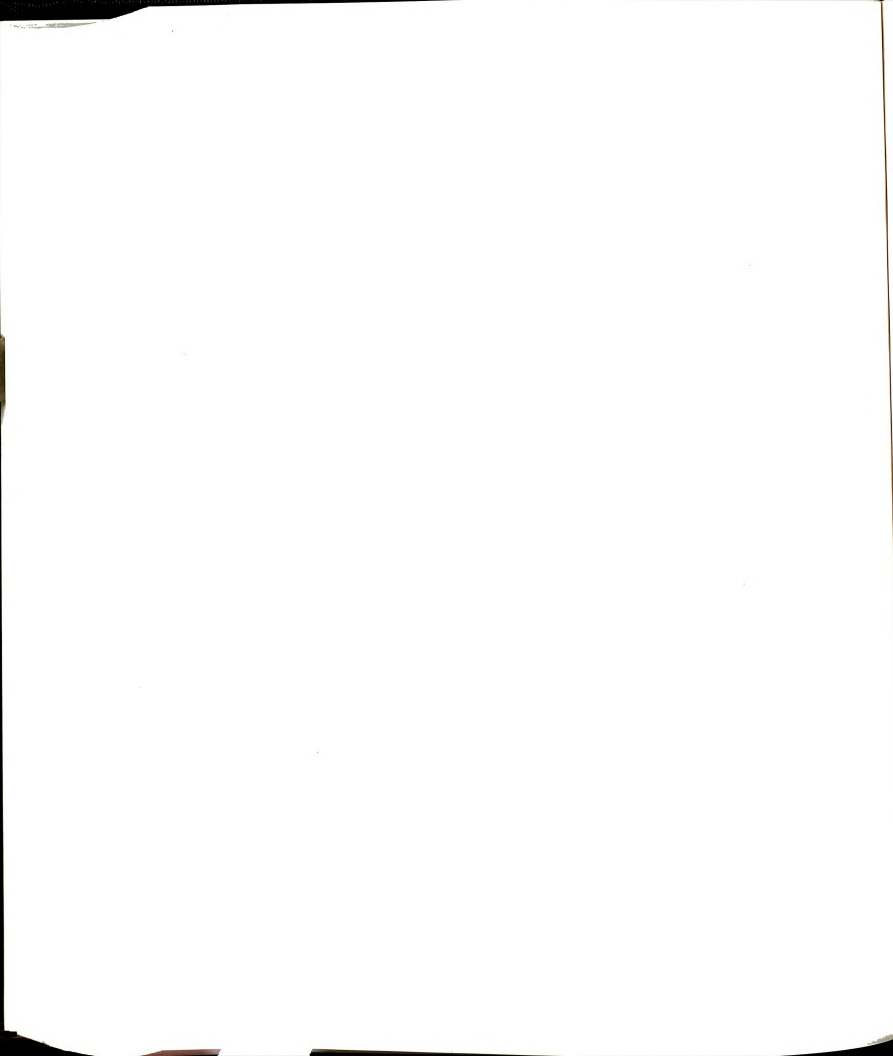
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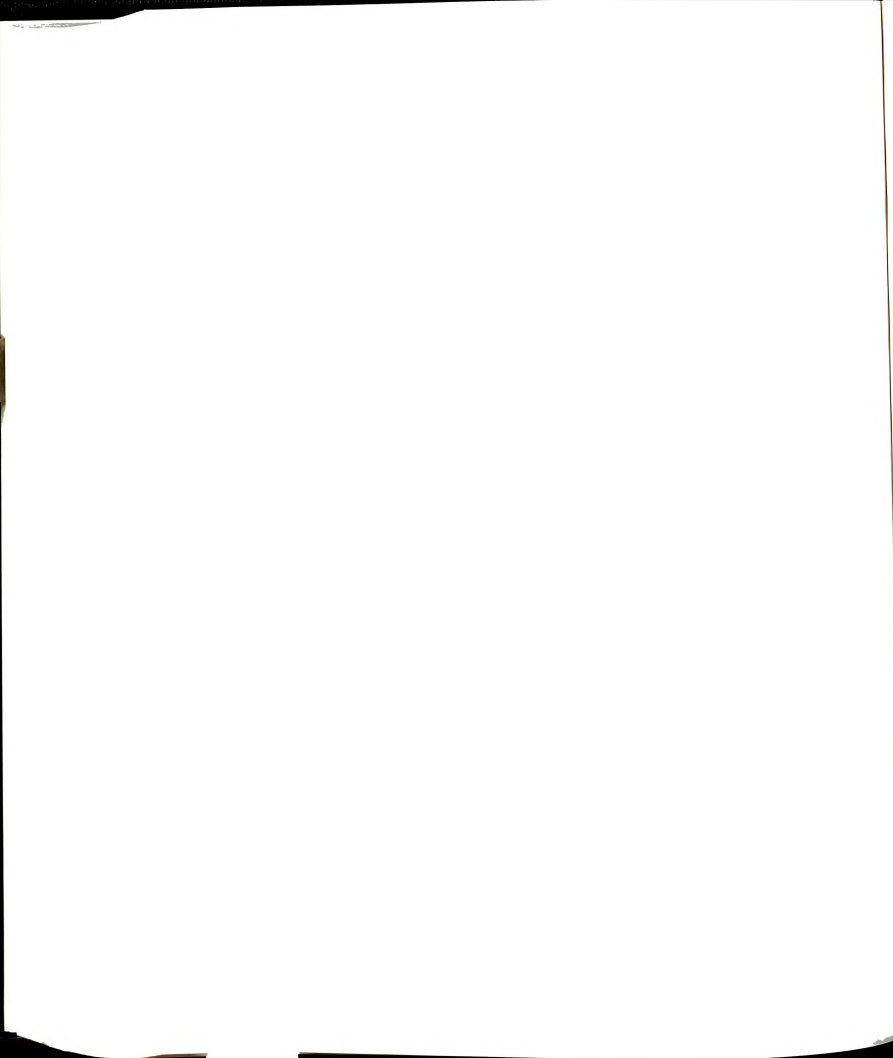
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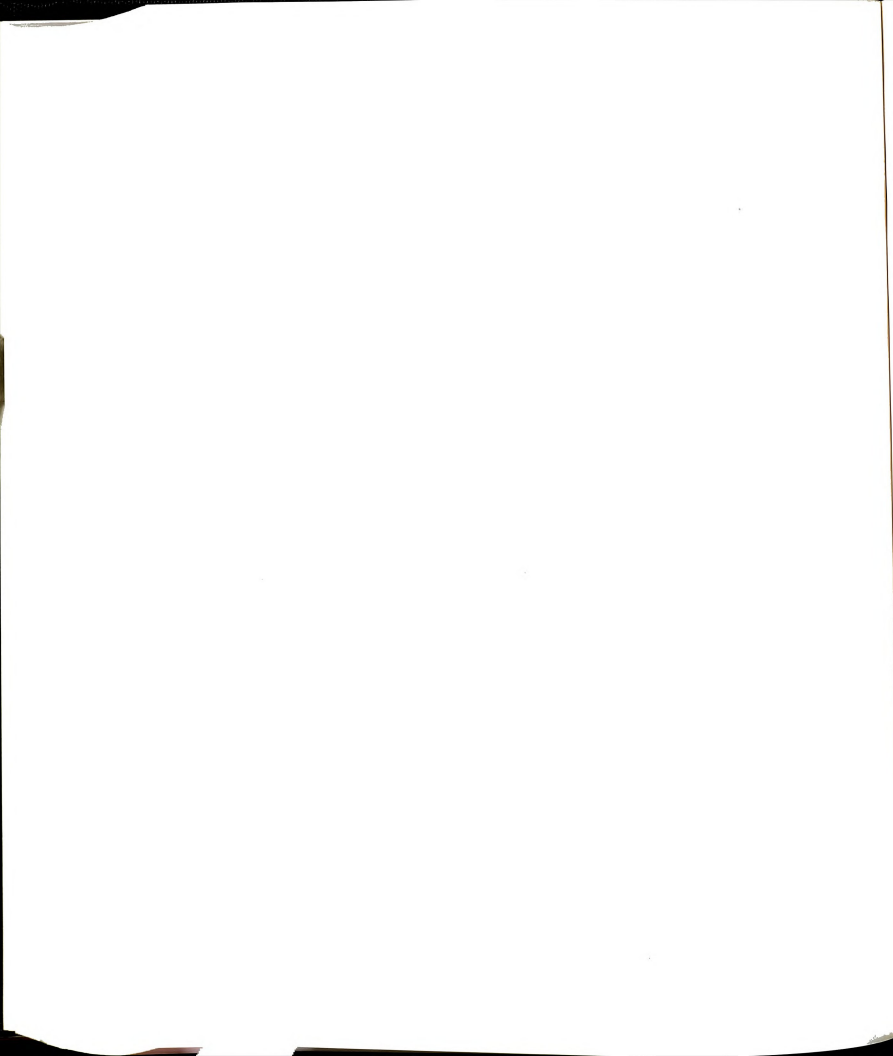
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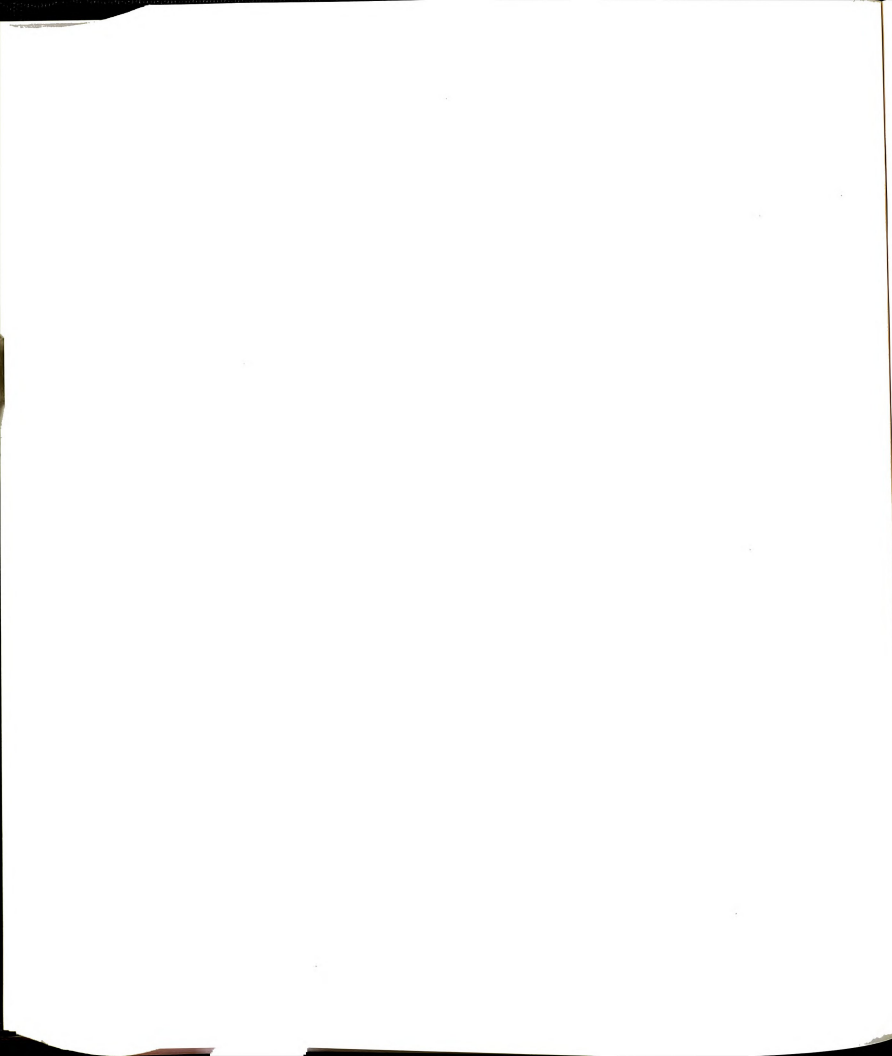
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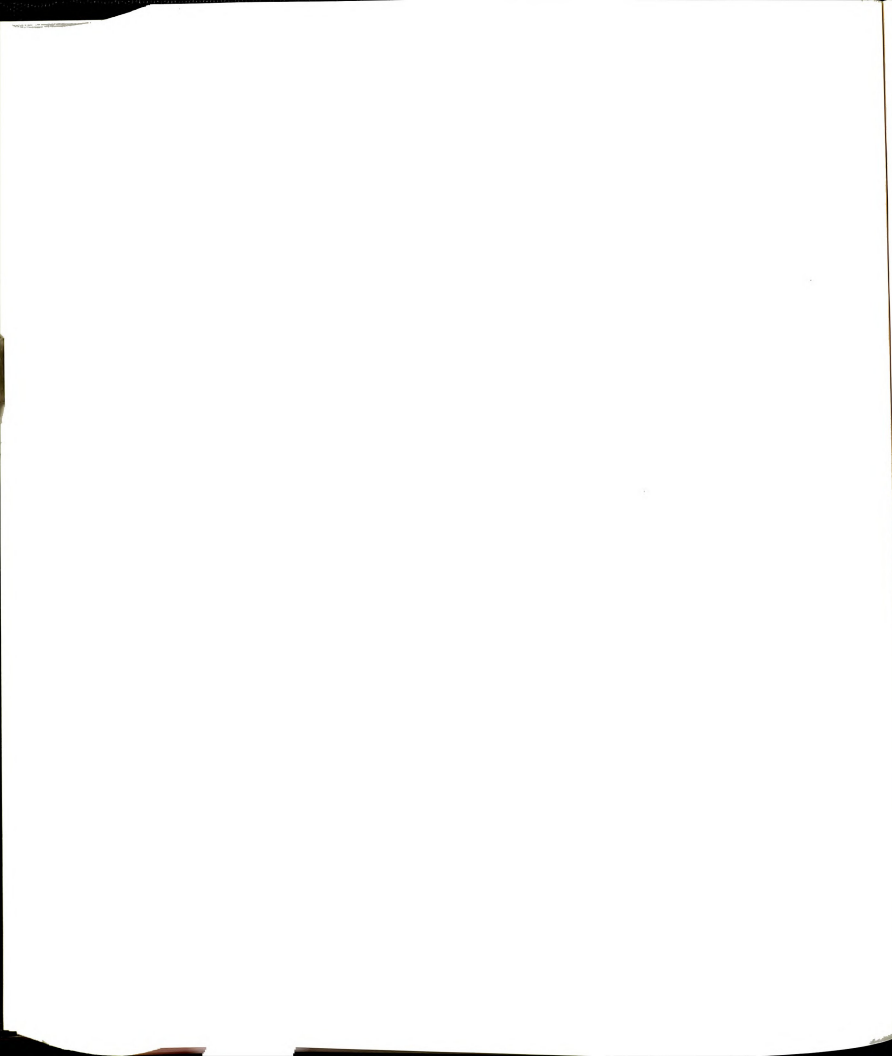
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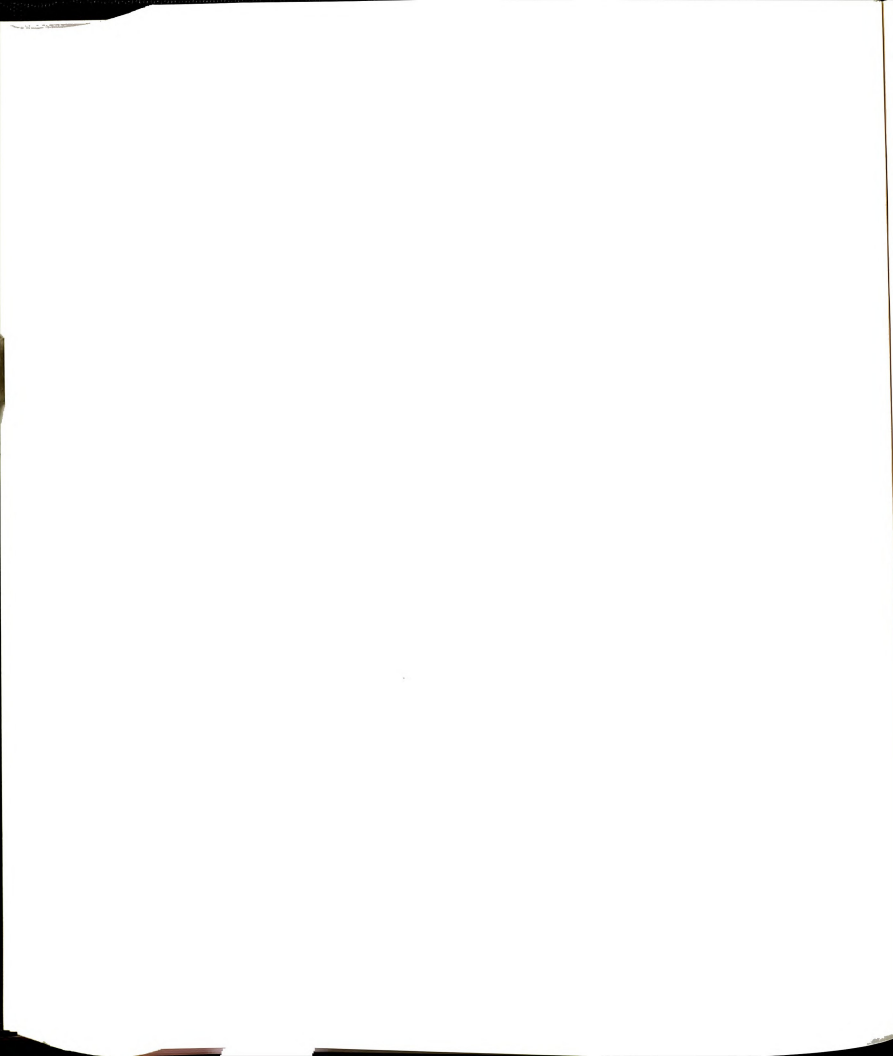
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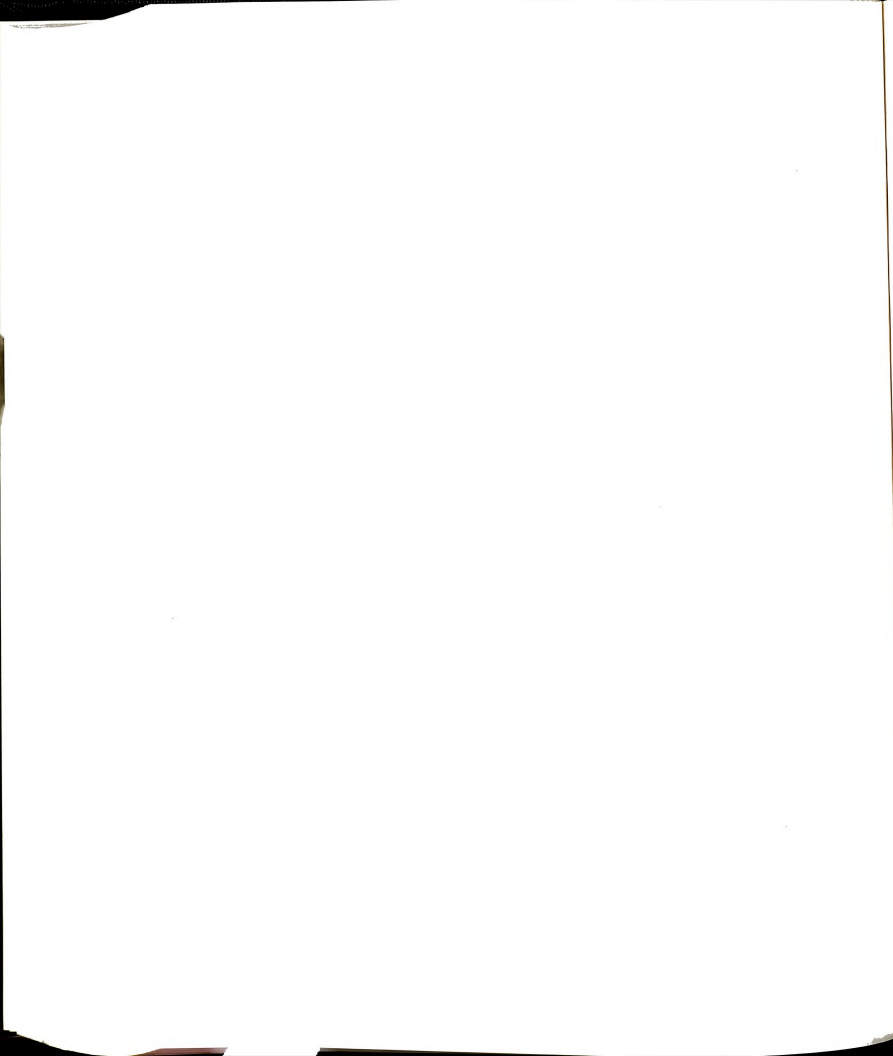
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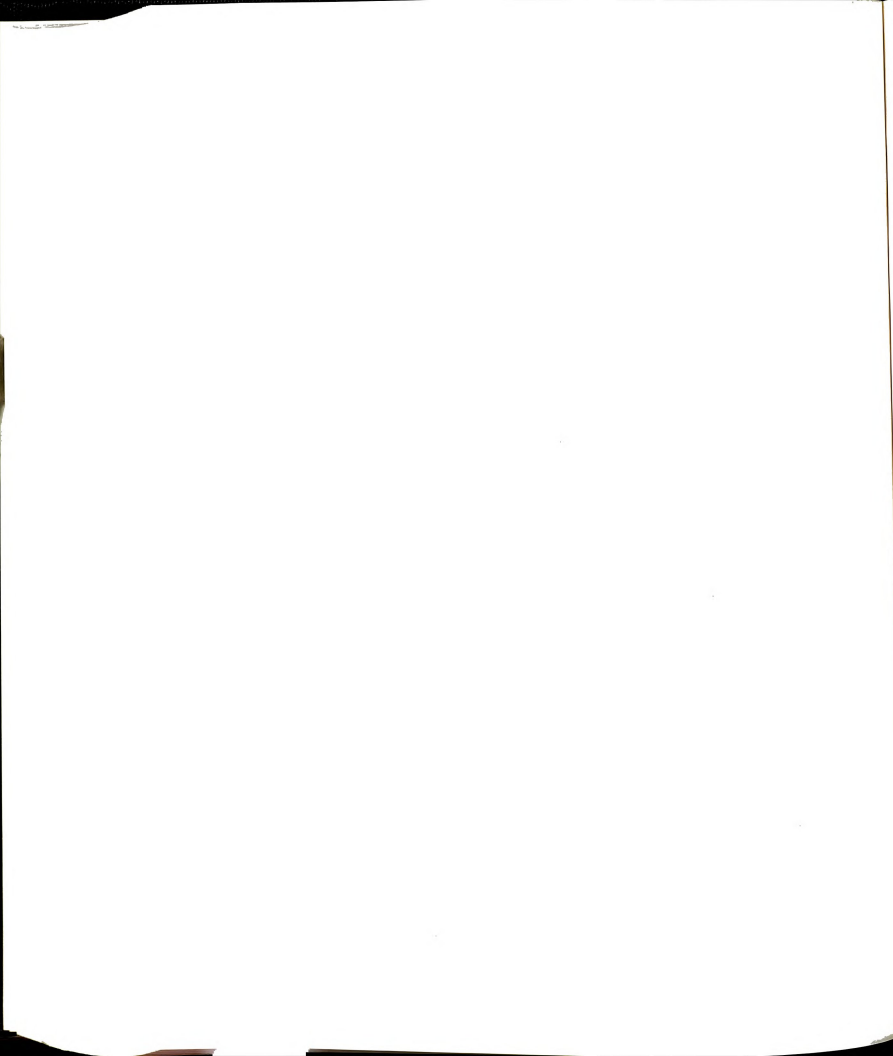
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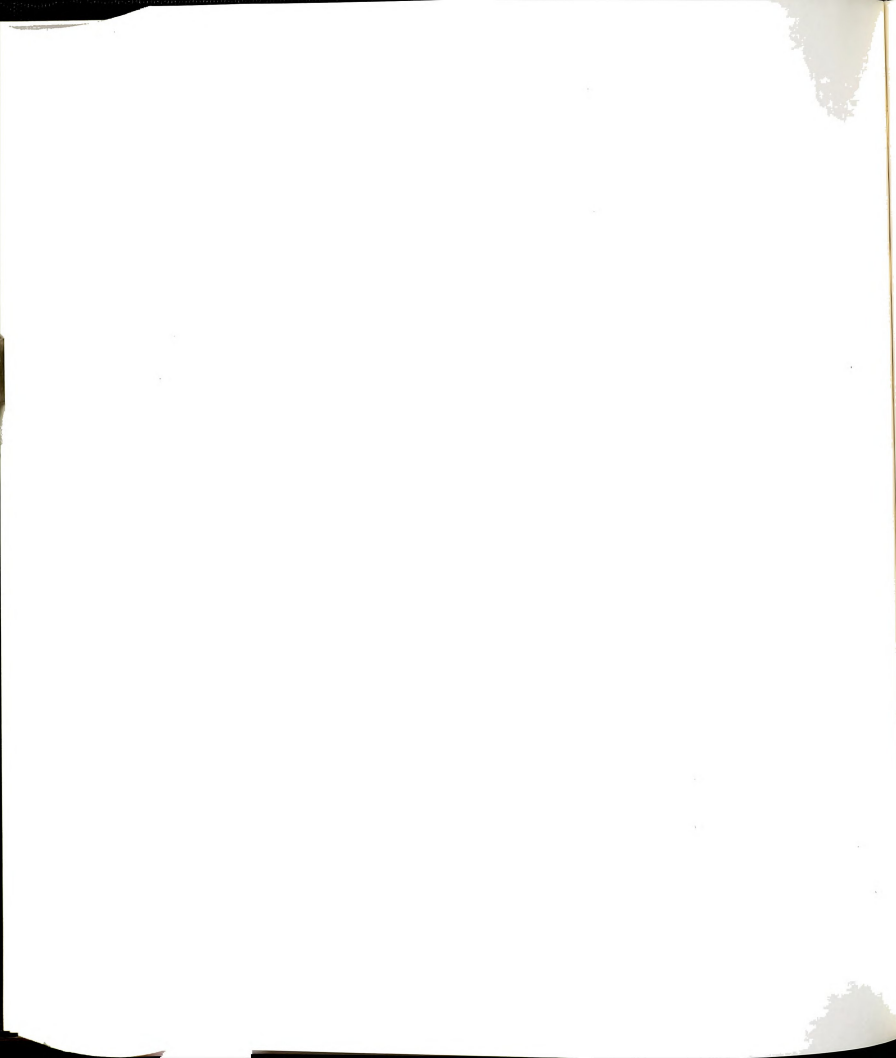
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