STRATEGY, STRUCTURE, AND PERFORMANCE
OF U.S.-BASED MULTINATIONAL
ORGANIZATIONS: A FIT
THEORY STUDY

DISSERTATION

Presented to the Graduate Council of the
University of North Texas in Partial
Fulfillment of the Requirements
For the Degree of

DOCTOR OF PHILOSOPHY

By

Rodney D. Blackwell, B.B.A., M.S.
Denton, Texas
August, 1997

Two international strategy dimensions are proposed as viable for international business organizations: (1) a worldwide integration strategy which uses facilities across borders in a closely linked production and distribution network to gain efficiency and (2) a locally responsive strategy which employs independent area subunits to increase marketing flexibility. A transnational strategy is the simultaneous pursuit of both integration and responsive strategies. Fit theory, the conceptual framework of the dissertation, assumes that a crucial determinant of performance is the fit between the strategy and the structure of an organization.

Senior executives at single-business, U.S. multinational firms were surveyed to determine their
international strategies and structures. Multiple regression analysis and correlation analysis were used to test the hypotheses.

No support was found for integration strategic and product structure combinations predicting returns on assets in multinational organizations. Support was also not found for responsive strategic and area divisions structure combinations predicting returns on assets. The third hypothesis was supported. The transnational strategic and matrix structure combination was significantly correlated with returns on assets. The results of the study indicate that successful multinational firms are using intricate structures to implement comprehensive strategies.
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CHAPTER I

INTRODUCTION

The relationship between multinational organization performance and international strategy and structure continues to interest management scholars and practitioners. Investigating how organizational structures associated with international integration strategies are linked to performance is the topic of the dissertation. Fit theory is the conceptual framework employed to examine how U.S.-based, single-business multinational strategies and organizational structures are related to financial performance.

The Introduction chapter includes a statement of the research question and an explanation of the significance of the research. This chapter is also designed to guide the reader through the evolution of fit theory and then define the scope of the study. Finally, the organization of the research report is presented.
Research Question and Domain

The research question addressed by the study asks, "Is international integration strategic and departmental structural fit a predictor of performance in U.S.-based, single-business multinational organizations?" The study is designed to extend existing research in international integration strategy, which is often called "global strategy," "globalization," or "internationalization" in the popular press and academic research literature (Bartlett and Ghoshal 1991; Melin 1992).

Melin (1992) divides globalization research into three themes:

1) evolutionary models of internationalization,
2) links between strategy and structure, and
3) administrative processes.

Research into the links between international strategy and structure is further divided into the three categories of political, investment, and integration. International integration strategy, the research domain of the study, involves establishing competitive advantages by linking organizational structures and strategies to improved organizational performance.
International integration research includes defining organizational strategies and structures that best fit an organization to its environment (Ricks, Toyne, and Martinez 1990). A search of international management literature reveals differing opinions pertaining to the best strategies and structures. The results of research testing for relationships between multinational strategy, structure, and performance in international business are often inconclusive (Bartlett and Ghoshal 1989; Hoskisson, Hill, and Kim 1993). This lack of positive research results is most likely due to the complexity of the strategy and structure variables and to the diversity of technologies, products, market trends, and traditions of various companies.

**Significance of the Research**

A multinational organization must decide how to separate or integrate international activities. Regardless of which strategy managers choose to address in their international environments, they are challenged to develop some structural means to prevent costly duplication of efforts. All decisions involving international strategy and organizational structure will
have effects on total corporate performance (Daniels and Radebaugh 1995).

The study of U.S.-based, single-business multinational organizations is important because of the nation's continued large influence on international trade. Annual international investments by U.S. businesses have recently been increasing and, most likely, will continue to increase in the future (Dobyns, Lloyd, and Crawford-Mason 1991). The United States is a major investor in facilities and markets in other countries. U.S. direct investments abroad have increased from $208 billion in 1982 to $450 billion in 1991 and to $712 billion in 1995, adjusted for inflation (Godin 1994; U.S. Department of Commerce 1996). More research in United States international business is needed because of the large amount of international investments made by U.S. firms.

Since continued expansion of world trade is essential for economic growth, global competition is a research area that needs continuing work (Keatley 1993). More research is also needed into topics such as the globalization of markets and production, new
organization structures, and the increase of transnational organizations (Hoskisson, Hill, and Kim 1993). The expansion of global competition may be the most important strategic management issue for the 1990s (Lyles 1990). The global competitive pressures of the 1990s can quickly reveal the lack of competitiveness of firms with misaligned strategies and structures (Miles, Coleman, and Creed 1995).

International markets present firms with opportunities for increased growth and profitability by offering new customers, lower costs, and access to natural resources. Firms need to build competencies and develop expanded strategies to address new problems as they expand into international trade and production facilities. Critical environmental and operational factors must also be taken into account as managers implement international strategies (Deresky 1994). Moreover, the successful implementation of a multinational strategy is greatly affected by a firm's overall structural design (Hodgetts and Luthans 1991). Discovering the appropriate central organizational structures that multinational organizations need to
support successful international marketing and operations is important to current research. The dissertation extends international integration strategy research by investigating how hypothesized strategic and structural fit combinations influence performance of U.S.-based single-business multinational firms. The hypothesized strategic and structural fit combinations were developed from a review of the international integration strategy research literature. The study is intended for use by academicians and practitioners interested in international integration strategy and organizational theory issues.

The following sub-section offers definitions of some of the terms as they are intended for use in the study.

**Definitions of Terms**

**Integration strategy** - using facilities across national borders in a closely-linked multinational production and distribution network (Doz 1986).

**International strategy** - using domestic facilities as a production base for exporting goods to foreign markets.
with the goal of achieving increased international sales
growth (Thompson and Strickland 1996).

**Multinational company** - an organization with operations
or marketing in more than one country.

**Organizational configurations** - clustering of
organizational attributes, including strategy,
structure, and processes (Ketchen, Thomas, and Snow
1993).

**Responsive strategy** - utilizing subsidiaries or area
divisions as independent, autonomous business units.

**Strategy** - the methods used by organizations to compete
in multinational environments including (1) the
distribution of products, manufacturing facilities, and
decision-making authority; (2) the stability of
technology; and (3) the amount of interdependence
between the headquarters and the major sub-divisions.

**Structure** - the lines of authority and reporting between
the headquarters and the first major division of the
organization.

**Transnational strategy** - pursuing activities that
attempt to benefit from both responsive and integrative
strategies (Rugman and Verbeke 1992).
Theoretical Underpinnings

In order to place the study of multinational business strategy and structural fit into perspective with other research, the Introduction chapter includes a brief review of the evolution of fit theory. The beginnings of fit theory are found in systems theory and contingency theory.

Systems theory views an organization as a set of interrelated elements (or subsystems) that work together in an organized way to achieve some purpose or goals. The system obtains inputs from its environment, transforms the inputs, and then returns them to the environment, often as goods, services, information, and waste products. Organizations are complex human social systems rather than simple machine or biological systems (Daft 1986).

Katz and Kahn (1978) describe the systems concept of organization as a common sense approach to understanding the business firm. Systems theory is useful to management scholars because it provides a means of discussing and investigating the complex processes of organizations and their environments.
Systems theory is specifically helpful to organization theory and strategy dialogue in describing the dynamics of strategic choice, organizational structure, and environmental circumstances. The nonlinearity of systems theory is recognized when social systems are viewed as closely-linked subsystems engaged in bidirectional causal loops (Doty, Glick, and Huber 1993).

Within systems theory, an organization can be envisioned as a network of associated segments with the primary intention of survival, but which is also engaged in various activities leading to other objectives (Chamberlain 1968). The concept of strategic choice is useful in understanding how organizations can attempt to coordinate the activities of associated segments. An organization's key members and leaders may reveal their objectives and intentions when they exercise strategic choice (Katz and Kahn 1978). The strategic choice element found within a system is constrained by many contingencies such as centrality, uncertainty, and availability of resources.
The multiple pressures for centralized and decentralized control within social systems is not a new concept (Wren 1987). Nevertheless, these constraints deserve attention because the ways in which multinational organizations adapt their strategies and structures to both the centralization of strategic control and to the need for organizational flexibility is central to international integration literature. Highly-organized systems, where components are closely linked, tend to have focused objectives and provide greater control. Less-organized and less-decentralized systems have fewer constraints on subdivisions and hence, they have more flexibility and greater ability to adapt to varying environments (Chamberlain 1968).

Systems theory is an intriguing way to conceptualize organizations; however, research requires more specific theoretical underpinnings to explain and predict organization strategy and structure. From systems theory grew structural contingency theory (Wren 1987). The contingency approach suggests that there is not one best organizational structure that will optimize performance for all businesses. Instead, contingency
theory focuses on contingency factors such as size, technology, power, and environmental complexity as the determinants of organizational structure (Chandler 1962; Woodward 1965; Burns and Stalker 1966; Lawrence and Lorsch 1969; Rumelt 1974).

Longitudinal studies in international business tend to conclude that the connections between contingency factors and organizational structure are more complex than contingency theory alone can explain (Dewar and Werbel 1979; Donaldson 1987). For example, size is generally viewed as a crucial factor for determining organizational structure. Hulbert and Brandt (1980) in their research of multinational organizations found that the amount of foreign commitments is a more reliable predictor of organizational structure than the size contingency factor.

Multinational organization structuring decisions are made in environments of high uncertainty. Furthermore, managers must make decisions and accept the risks associated with uncertainty (Weick 1979).
Fit Theory

A by-product of structural contingency theory is fit theory (Wren 1987). Fit theory assumes organizations are both complex social systems and rational systems that attempt to maximize performance. Organizational strategic and structural choices are optimal when they correspond to the organization's external environment. These choices are often referred to as contingency factors or imperatives. The resulting fit between the strategy, structure, and other contingency factor variables determines an organization's performance. The fit theory model emphasizes the importance of performance as a barometer of effective strategic choices. Fit theory and the general systems theory concept of equifinality assume that any changes in strategy, contingency, or structural variables will lead to subsequent adjustments to achieve a distribution of assets and energies which results in changes in performance (Drazin and Van de Ven 1985; Donaldson 1987).

Fit theory is complicated because it involves strategic choice and emphasizes the importance of
performance as a measure of effectiveness. Strategic-choice variables are influenced by many factors, including the management team's predispositions and values. Several contingency factors are introduced by the strategic choice component of the strategic fit model including cultural influence, personal values, and other perceptions of the management team members (see Figure 1). The strategic-fit model, while more complicated than contingency theory, offers a more comprehensive explanation of the strategy, structure, and performance relationships.

As in all organizations, a complex network of strategic-choice variables and contingency factors merge in multinational organizations to determine organizational structure and performance outcomes. These variables include strategic predisposition, economic imperatives, political imperatives, and industry structure (Ring, Lenway, and Govekar 1990). The relative influence of each component of the strategic fit model may change over time. These changes may be due to other situational factors. Some components may change more easily and more quickly than
others. For example, product markets and administrative infrastructure will change quickly as compared to more slowly changing organizational skills and values (Prahalad and Doz 1987).

The strategic fit model is also used to understand the differences in performance resulting from the interaction of organizational structure, strategy, and contingency factors, rather than concentrating on explaining the congruence between contingency factors and structure (Drazin and Van de Ven 1985). Miles and Snow (1984), describe fit as an ongoing process that works to match an organization with its environment and to allocate resources to accomplish this match.

Doty, Glick, and Huber (1993) label one model of fit theory as the contingent ideal types fit. The contingent ideal types fit model theorizes that a single ideal type of structure exists with each context as constrained by the contingency factors. They propose "that this model of configurational fit is appropriate for testing theories positing that contingency factors constrain an organization's choice of form" (Doty, Glick, and Huber 1993, 1203). The contingency ideal types fit model assumes that a fit between strategy, structure, and significant contextual factors will lead to more effective organizational performance.
Multinational Strategy

Researchers do not always agree on what is the best strategy for multinational firms to pursue. Chapter II reviews some different strategies recommended by authors and researchers. In Michael Porter's 1990 book *The Competitive Advantage of Nations*, he proposes an integrated strategy where nations prosper when their industries employ global strategies that stress the advantages found in the unique elements of national histories and characteristics. Conversely, Kenichi Ohmae's 1990 book *The Borderless World* emphasizes a locally-responsive strategy with "insiderization" as a dominant product strategy for success. Insiderization involves the development of a detailed infrastructure of marketing and distribution inside the customer country to improve response time to local demands.

The integrative/responsive grid of Prahalad and Doz (1987) offers a means to conceptualize two important dimensions of international business strategy. The Prahalad and Doz framework has two imperatives that simultaneously challenge the formulation of international strategy: the need for global integration
and the need for local responsiveness. Companies working in multiple country locations must respond to the demands of host governments and market forces in each location (see Figure 2 below). At the same time, multinational firms seek to exploit the advantages offered by market imperfections and their abilities to integrate multi-country marketing and production capabilities (Roth and Morrison 1990). More discussion

![Figure 2. Integration/Responsive Strategy Model](image)

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Pressures for Local Responsiveness

of the Prahalad and Doz (1987) integrative/responsive
grid is found in Chapter II (Literature Review).

Strategists can pursue transnational strategies and
attempt to gain advantages by blending elements from
both integration and responsive strategies.
Consequently, the management of a firm following a
transnational strategy bears higher costs of
administrative coordination and increased managerial
ambiguity (Doz 1986; Prahalad and Doz 1987).

Multinational Structure

The five organizational structures that are
typically associated with international firms include
worldwide functional, product, area, matrix or mixed,
and international division (Stopford and Wells 1972;
Davidson 1982; Phatak 1983; Pitts and Daniels 1984;
LeMak and Bracker 1988; Kefalas 1990). Grouping
activities into organizational units around the
dimensions of area, product, or function is not the only
way to conceptualize the structure of a multinational
organization. Studies in organization structure can
include other dimensions of formation, such as: (1) the
amount of formalization in decision making,
communications, and control; (2) the degree to which work-related tasks are specialized into well-defined job descriptions; (3) the amount of centralization or decentralization of decision making throughout the organization; and (4) analysis of communication and influence networks.

Strategy includes how organizations choose to distribute authority and independence between the headquarters and the major units in order to address multinational environments (Prahalad and Hamel 1994). Since this is a very broad view of international strategy, it seems intrinsically sound to investigate structure by looking at the way key business units are grouped into departmental structures. The key units are important design dimensions because these departmental structures make up the building blocks of the entire structure of most multinational organizations. The prominent design dimensions will get more visibility, attention, and resources because their power has been institutionalized (Thompson and Strickland 1996). The next section describes the scope and limitations of the study.
Scope of the Study

The scope of this study will be constrained in two ways. First, the findings of the study are not generalizable to businesses outside of the United States, since the domain is managers involved in the strategic planning groups of U.S.-based, or headquartered, multinational businesses. The cultural background of the strategic core of an organization will influence the strategy and structure variables because national culture can affect the way companies do business (Hodgetts and Luthans 1994). By selecting managers involved in the strategic core of U.S.-based, multinational businesses as the domain of the study, the influence of national culture as a contingency factor is partially controlled. Moreover, strategists in the U.S. have different cultures because they have different educations, levels of risk tolerance, attitudes towards self-directed work teams, personal goals, values, experiences, and national origins. This study makes no attempt to eliminate or control the executives' personal differences factor.
Second, the research design of this dissertation does not make any attempt to establish a causal relationship between the variables. Theories of causation require variables to be both necessary and sufficient to cause an effect (Cook and Campbell 1979). Integration strategy, and the corresponding departmentalization of the multinational organization, may influence but are not sufficient to cause any specific performance.

The scope of the analysis is limited to single-industry multinational organizations. Multinational organizations that are diversified into different industries may have different strategies and corresponding structures for each industry. Gathering data from diversified multinational organizations could lead to erroneous conclusions pertaining to strategy and structural fit in multinational organizations. Relationships that are found in single-industry studies are not generalizable to multi-industry contexts (Ginsberg and Venkatraman 1985).
Organization of the Research Report

The purpose of the Introduction chapter (Chapter I) is to familiarize the reader with the theoretical underpinnings of the study. This study approaches the international strategy and structure issue from the fit theory perspective by pursuing links between multinational organizations' strategies, organization structures, and performance. The research question and the limitations of the research question, as well as, the significance of international integration and strategy and structure fit research are included in the Introduction chapter.

The Literature Review chapter (Chapter II) develops the conceptual basis of the research framework. The literature review is organized to comply with the dimensions of the research framework and offers to explain the theoretical basis of the study. Following the review of the literature are the research hypotheses. The Methods chapter (Chapter III) describes how the variables specific to this study were investigated. The research design is described, including operational definitions and a mathematical
representation of the research model. The remainder of the Methods chapter explains the collection and treatment of the data and a calculation of the sample size required to achieve sufficient statistical power. Results of the statistical analysis are reported in the Results chapter (Chapter IV) and a discussion of the research results is in the Evaluation and Conclusions chapter (Chapter V).
CHAPTER II

LITERATURE REVIEW

The purpose of the research literature review is to align previous theoretical and empirical research into a logical narrative and develop a framework for the study of multinational strategy, structure and performance. In order to place this study into perspective with other existing works, the literature review chapter begins with a brief discussion of various theories that form the conceptual basis of the research model. The first section also includes the Prahalad and Doz (1987) Integrative-Responsive Grid, an excellent framework for examining the relationship between strategy and structure in multinational organizations. This section is followed by the research framework and a review of the significant international strategy and structure research. The last section of the literature review describes the hypotheses.
Conceptual Framework

Investigations of the relationship between organizational structure and strategy often begin with the work of Alfred Chandler. Chandler (1962) studied the product and market strategies of 70 large U.S. firms and found that changes in strategy often bring about new administrative problems that require modified structures. Chandler believes organizations change their structures to support the implementation of new strategies. International business researchers are also concerned with the relationship between strategy and structure. The strategy/structure alliance and the quality of the fit are suspected to greatly influence the performance of multinational organizations. Configurations of strategy and structure that result in higher or lower performance make up the conceptual framework of the study.

Strategy and Structure Fit

Generally, researchers agree with the need for a better understanding of the strategy and structure relationship in multinational organizations, but they often differ in their approaches to investigating the
complex relationships (Melin 1992; Sullivan and Bauerschmidt 1991). For example, Georgantzas (1989) predicts that the patterns of multinational strategies and structures are critical to the support of effective management and performance. Porter (1990) identifies organization and strategic innovation as accelerating the growth of competitive advantage. The challenge confronting multinational organization researchers is that of identifying the relationship between strategy and structure which would lead to increases in the effectiveness and performance of multinational management.

Organizational structure is influenced by efforts to implement strategy and other contingency factors. Structural changes are not always a matter of managerial choice. Changes in structure result from the many actions taken by numerous organizational members. Chamberlain (1968) believes structure is a reflection of organizational culture and subsequently, the structure (and culture) may exhibit administrative practices that constrain alternative strategies. Porter (1990) also
considers culture an important but slowly-changing, contextual contingency factor.

Other researchers embrace the evolutionary view of multinational strategy and structure. They are interested in the organizational changes that result as domestic companies pursue new multinational strategies. The Stopford and Wells (1972) study is often considered the initial research on multinational strategy, structure, and management of foreign subsidiaries. Their work conforms to the evolutionary model of multinational expansion. In the evolutionary model firms grow from a domestic company to an international division organization and ultimately to some type of global structured organization. Stopford and Wells (1972) believe a decisive point in the growth of a multinational firm occurs when management realizes a central office with a worldwide perspective is imperative for a firm to adequately compete in international markets.

When domestic firms adopt multinational strategies some changes in organizational structure are necessary. According to Ansoff (1984), this restructuring
requirement is an underlying reason why some large U.S. firms have not expanded beyond international exporting as a product strategy.

International business decisions remain challenging because no particular organizational configuration is best suited for specific industries or nations (Bartlett and Ghoshal 1988; Leong and Tan 1993). The diverse ideas of international business researchers created a need for new conceptual theories to explain and offer a means of discussing multinational strategy and structure issues. In response, Prahalad and Doz (1987) developed the Integrative-Responsive Grid. The next subsection examines the Integrative-Responsive Grid, which in turn, serves as the foundation of the research model for this study.

The Integrative-Responsive Grid

Recent international business strategy researchers have paid considerable attention to the classifications of multinational strategies into archetype categories, roughly referred to as either local, multidomestic, or global (Doz 1980; Herbert 1984; Leontiades 1986; Prahalad and Doz 1987; Wright 1987; Chrisman, Hofer, and
Boulton 1988; Arnold 1989; Chidomere and Anyansi-Archibong 1989; Ohmae 1990; Porter 1990). Moreover, the Prahalad and Doz (1987) integration-responsive classification of international business strategy creates a classification scheme for international business strategy that appears to originate from the systems, contingency, and fit theory lineage of evolving management thought. The integration-responsive framework captures the significant strategy issues facing international business management by emphasizing the simultaneous pressures on strategists to perceive their context-environments as both worldwide and as a combination of discrete segments.

Prahalad and Doz (1987) found that organizations are often labeled as global, local, or multidomestic. They suggest that classifying international businesses as either local, multidomestic, or global is not an adequate description for a multinational organization's competitive strategy. The categories are inadequate for describing multinational firms because few businesses are either entirely local or global. Accordingly, they developed the Integrative-Responsive Grid (see Figure 3...
below) to better categorize multinational business strategy (Prahalad and Doz 1987).

**Figure 3. Integrative/Responsive Grid**

<table>
<thead>
<tr>
<th>High</th>
<th>Integrative Strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>Administrative Coordinated Strategy</td>
</tr>
<tr>
<td>Low</td>
<td>Locally Responsive Strategy</td>
</tr>
<tr>
<td>Low</td>
<td>Pressures for Local Responsiveness</td>
</tr>
<tr>
<td>High</td>
<td>Pressures for Global Integration</td>
</tr>
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In general, multinational integrated firms pursue cost leadership strategies while multidomestic nationally responsive firms seek product-differentiated and niche strategies (Porter 1986). Global integration is defined as the use of facilities across borders in an
integrated multinational production and distribution network (Doz 1986). Integration strategy utilizes a centralized coordination of activities; for example, managing shipments of parts and subassemblies across a network of manufacturing facilities in various countries. Often, the purpose for employing a global integration strategy is reducing costs to optimize investment, which gives a multinational company the opportunity to compete with lower production cost rivals (Dubois, Toyne, and Oliff 1993; Prahalad and Doz 1987).

Contrasting with global integration is national, area, or local responsiveness, where subsidiaries tend to act more as if they were independent companies (Doz 1986). The local-responsive strategy offers subsidiaries or local divisions more autonomous flexibility and allows for more diversity. Supporters of locally-responsive multinational strategies have a more organic systems point of view.

As an advocate of responsive strategies, Ohmae (1990) argues for the decentralization of decision-making away from the centers of multinational organizations because the decision makers are often too
far removed from local environments. The responsive strategy is most common when there is neither proprietary technology nor meaningful economies of scale to consider (Prahalad and Doz 1987). Additionally, advantages are found in locally-responsive strategies when product adaptations are required by either the preferences of local market segments or the product modification requirements of host governments. Product adaptation to local needs is an important consideration since one empirical study found that 80% of U.S. exports required one or more local product adaptations (Kotler 1986). Locally-responsive strategies are also useful when there are unique opportunities for product distribution. For example, Japanese consumers are more likely than consumers in other nations to use vending machines for a variety of product purchases (Ohmae 1990).

Multinationals encountering communication obstacles are also pressured to pursue area-responsive strategies. Differences in the nationalities of organizational members is a possible cause of the need for an area responsive strategy (Fayerweather 1982). Bartlett and
Ghoshal (1986) recommend that multinationals decentralize decision-making authority to local subsidiaries. By decentralizing, multinationals gain the autonomous flexibility needed to meet local demands for quick adaptation of products, services, and human resource practices.

The intent of the integrative-responsive framework is to evaluate the relevance of two conflicting demands on a multinational business (Prahalad and Doz 1987). Companies working in multiple-country locations must respond to the demands of host governments and market forces in each location. Simultaneously, multinational firms want to exploit the advantages offered by market imperfections and to capitalize on their abilities to integrate multi-country marketing and production capabilities (Roth and Morrison 1990). Strategists may choose to pursue what Prahalad and Doz (1987) labeled as administrative coordinated strategies in an attempt to gain advantages by blending both integration and responsive strategies.

Ghoshal and Nohria (1993) described the effectiveness of the transnational strategy as limited
to organizations that have strong needs for both national responsiveness and global integration. Consequently, the management of a firm following a transnational strategy will recognize that sacrifices of some degree of optimal efficiency may have to be made because of the greater costs of administrative coordination and increased managerial ambiguity (Doz 1986; Prahalad and Doz 1987; Ghoshal and Nohria 1993). The transnational strategy is also referred to as multifocal strategy and administrative coordination in some multinational literature.

Investigating the strategy and structure relationship in U.S.-based multinationals by extending the theoretical framework proposed by Prahalad and Doz (1987) is the purpose of the dissertation. The next section describes the research framework.

Multinational Strategy and Structure
Research Framework

The hypothesized fit between international-integration strategy, multinational departmental-structure, and performance builds the foundation for the research framework. The research framework was
developed for this study from an assessment of the international integration strategy literature. Certain multinational strategies and structures are expected to be found together in successful firms.

The strategies associated with the mutual interplay of the environmental pressures for integration and responsiveness are underlined in each quadrant of the two-by-two matrix (see Figure 4 below). The associated structures are also placed in the pertinent matrix compartments.

Figure 4. Strategy, Structure, and Performance Fit Research Framework
The research framework will serve to organize the remainder of the literature review. First, the four strategy classifications of international exporting, integration, responsive, and transnational strategies will be discussed. The next section discusses the five structures that will serve as a dependent variable in the study. The last section in this chapter (Literature Review) includes the hypotheses which are derived from the research framework.

**Multinational Strategy**

Multinational strategy formulation is primarily the responsibility of the chief executive officer and other key executives and is often reviewed by boards of directors. These strategic decisions are made with the goal of utilizing the corporate resources and capabilities in order to create a sustainable competitive advantage in each business and national market (Thompson and Strickland 1996). Multinational strategy can be described along the two dimensions of national responsiveness and worldwide integration. The next four subsections describe four categories of multinational strategies that fit the differing
pressures for integration of value chains and responsiveness to local market demands. Integration strategies are engaged in capturing the advantages of worldwide operations and relatively-standardized products. Responsive strategies seek to satisfy the differing needs of local markets by creating goods, services and company images that react faster to changing local conditions. Transnational strategies have the goals of being both responsive to changing market needs and having flexible worldwide integration of production. The international strategy is associated with companies that have less pressure to be highly responsive or integrative (see Table 1 below).

**Integration Strategy**

Global integration strategy is defined as activities undertaken by a firm that separate the different value components and locate each component at the most economical scale and in the location where the activity can be carried out at the lowest cost (Hout, Porter, and Rudden 1982). Prahalad and Doz (1987: 14) define global integration as "the centralized logistical management of geographically dispersed activities and
<table>
<thead>
<tr>
<th>Strategy: Integration</th>
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<tbody>
<tr>
<td><strong>Advantages</strong></td>
</tr>
<tr>
<td>Centralized logistics</td>
</tr>
<tr>
<td>Worldwide marketing</td>
</tr>
<tr>
<td>National strengths as competitive advantages</td>
</tr>
<tr>
<td>International arbitrage</td>
</tr>
<tr>
<td>International leverage</td>
</tr>
<tr>
<td><strong>Disadvantages</strong></td>
</tr>
<tr>
<td>Universal products ignore local markets</td>
</tr>
<tr>
<td>Requires managers with broad world views</td>
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<table>
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<tr>
<th>Strategy: Responsive</th>
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<tbody>
<tr>
<td><strong>Advantages</strong></td>
</tr>
<tr>
<td>Locally adaptive advertising</td>
</tr>
<tr>
<td>Locally adaptive products</td>
</tr>
<tr>
<td>Capitalization on local distribution networks</td>
</tr>
<tr>
<td>Quick response to changes in local markets</td>
</tr>
<tr>
<td><strong>Disadvantages</strong></td>
</tr>
<tr>
<td>Difficult to blend into host-country culture</td>
</tr>
<tr>
<td>Lacks enough worldwide production efficiency</td>
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<tr>
<th>Strategy: Transnational</th>
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<tbody>
<tr>
<td><strong>Advantages</strong></td>
</tr>
<tr>
<td>Both global efficiency and local-market adaptation</td>
</tr>
<tr>
<td><strong>Disadvantages</strong></td>
</tr>
<tr>
<td>Strategic ambiguity</td>
</tr>
<tr>
<td>Requires complex structures</td>
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<tr>
<th>Strategy: International Export</th>
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<tbody>
<tr>
<td><strong>Advantages</strong></td>
</tr>
<tr>
<td>Clear strategic intent</td>
</tr>
<tr>
<td>Centralized logistics</td>
</tr>
<tr>
<td><strong>Disadvantages</strong></td>
</tr>
<tr>
<td>Slow to adapt to local markets</td>
</tr>
<tr>
<td>Less opportunities for arbitrage and leverage</td>
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</tbody>
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assets on an ongoing basis." The most important purposes of global integration are to reduce costs and maximize investment (Doz 1986). Porter (1990) describes the global integration approach as locating activities in other nations to capture local competitive advantages. The global integration strategy requires the coordination and integration of some foreign production and worldwide marketing.

The literature addressing global integration strategy is large and continues to grow. Some researchers describe and interpret the phenomenon while others advocate the advantages of global integration strategies. Michael Porter (1990) uses the classifications of cost leadership, differentiation, and focus product strategies to examine competitive advantage in international competition. In line with the classical theories of comparative advantage and Adam Smith's absolute advantage, Porter emphasizes the importance of national differences as being at the core of international competitive advantage. Porter proposes that nations will prosper when industries employ global strategies that stress the advantages found in the
unique elements of national histories and characters (Porter 1990).

Hout, Porter, and Rudden (1982) describe the centralized global organization as the appropriate unit of planning in the global marketplace. According to Kogut (1985), if an international firm does not sustain the competitive advantages of labor and capital offered by global integration, then it is simply reverting to domestic competition with a different national name. Multinational firms that adapt their intangible assets to the conditions in each country, essentially become a collection of domestic companies (Porter 1986). Marcati (1989) proposes that competitive advantage is achieved by creating similarities between the headquarters and the subsidiaries, and he describes a subsidiary as merely a delivery pipeline offering the opportunities for exploiting local markets. Kogut (1985) delineates the advantages of global integration as strategic flexibility consisting of arbitrage and leverage.

The first advantage of strategic flexibility is arbitrage. Since international borders and governments are the sources of many international market
imperfections, arbitrage occurs when multinationals take advantage of market imperfections like exchange rates, government industrial policies, and tax laws. Multinational organizations have the advantage of existing across borders, which allows them to shift their production activities to find lower costs, transfer income to countries with lower tax rates, and seek financial markets that are more secure and inexpensive. In addition, arbitrage allows the transfer of information and skills learned in one national market to markets in other countries (Kogut 1985).

A special form of arbitrage, called source arbitrage also offers competitive advantages to firms by giving them global sources for raw materials and labor. For example, McDonald's grows the Burbank potato in 18 countries. The Burbank potato is considered the best potato for making french fries. McDonald's integration of sources assures them a steady supply of potatoes regardless of a region's weather, national politics, or insect infestation (Labich 1986). Research in global procurement and logistics strategy indicates that Japanese industry is competitive due in part to their
careful attention to linkages in the value chain. They effectively use centralized management to procure inexpensive raw materials and labor from around the world (Berkowitz and Mahan 1987).

The second advantage of strategic flexibility is leverage. Leverage occurs when an advantage attained by a firm's position in one national market strengthens its position in another. Multinationals use leverage when they reach economies of scale by coordinating resources between countries or when they use their international bargaining power to resist government intervention (Kogut 1985).

Leontiades (1986) is another strong proponent of global integration strategy with decision making centralized at the home nation headquarters. He maintains that successful multinationals increasingly include companies that centrally coordinate their international resources to reach global objectives. When considering the decision making authority relationship between headquarters and subsidiaries, Leontiades does not believe there is a "painless solution" (Leontiades 1986, 104). The decision making
authority belongs at the headquarters. Porter (1986) recommends global firms seek a balance between country and global points of view, while making the definitive authority the global point of view.

Other researchers are critical of integration strategy. Some researchers believe globalization is being oversold by the press and that global integration strategies are not effective in all cases (Douglas and Wind 1987). For example, Picard (1980) studied U.S.-owned multinationals and their subsidiaries in Europe and found a general deficiency of communication between national subsidiaries and headquarters. He also found that middle management lacked a world view. His survey of 56 European manufacturing firms with subsidiaries in the U.S. revealed that coordination as an integrative mechanism is only effective when careful attention is paid to headquarter/subsidiary communications. Another weakness often associated with a global integration strategy is that emphasis tends to be placed on other multinational competitors rather than concentrated on local markets (Bartlett and Ghoshal 1988; Ohmae 1988). The global integration strategy
causes consumers to sacrifice many preferences in product features and design in order to get lower prices (Douglas and Wind 1987).

The decision makers at the headquarters are often too far removed to accurately analyze the local environment (Ohmae 1989). Bartlett and Ghoshal (1986) predicted that U.S. multinationals will shift away from viewing their subsidiaries as simply implementers and adapters of strategies formulated at the headquarters. They contend that corporate strategy is becoming dispersed to locally-responsive subsidiaries (Bartlett and Ghoshal 1986). In subsequent research, Bartlett and Ghoshal (1988) argue in favor of linking dispersed, decision-making authority and management responsibilities along with the decentralization of assets. This is because a centrally-managed multinational organization may discount local market needs or the local means needed to implement strategies (Bartlett and Ghoshal 1988). In summary, proponents of global integration strategies argue that strategic decisions should come from the centralized headquarters in order to realize the advantages offered by worldwide
production and marketing. Critics of global integration strategy, however, believe centralized decision makers are too far removed from local environments to make accurate situation assessments (Ohmae 1989).

Responsive Strategy

Bartlett and Ghoshal (1986) state that organizational capability is underutilized when centralized management decisions (1) fail to predict changes in industry structure in local markets, (2) impede local managerial initiative to respond to changes in local operating environments, and (3) lack the resources to develop strategic responses to local competition.

Kenichi Ohmae (1980) is a proponent of locally-responsive multinational strategy. He uses two broad classifications of strategies when discussing complex international marketing and production strategy issues: universal product strategy and insiderization. Universal product strategy is similar to Porter's cost leadership strategy. They both agree that universal product strategies involve large international selling efforts and the development of complex infrastructures
to market undifferentiated, commodity products. Two advantages, cost reduction and global economies of scale, can result from successful universal product strategies. Nevertheless, Ohmae (1990) is critical of the universal-product strategy as a widespread international business strategy because universal products, like Coca-Cola soft drinks and Levi's jeans, are uncommon (Ohmae 1990). He contends that attempts to create the universal product strategy most often result in global products that are merely a rough average of all the different preferences of local markets. He predicts that this "montage" product eventually loses its appeal in all the markets (Ohmae 1990, 24).

Ohmae (1990) is a proponent of insiderization as a dominant product strategy. Strong insider positions involve the development of detailed market-by-market functional strengths aligned with high in-country marketing and distribution involvement. He believes that both universal products and differentiated products need strong insider positions to remain successful. The differentiated product exceptions to his insider multinational business strategy are fashion-based, high-
profile, and narrow market-segment export products; such as, Gucci bags and Rolls Royce automobiles (Ohmae 1990).

Porter (1990), on the other hand, is critical of insiderization as a multinational strategy. He considers it difficult for a foreign subsidiary to blend into another nation's culture and become a genuine insider. In addition, subsidiaries have problems influencing strategies crafted at the headquarters when there is a centralized research and development effort. There is also the risk of a subsidiary becoming a captive of the foreign nation's interests and consequently, losing some credibility at the headquarters (Porter 1990).

Researchers do not agree on a single strategy that is best for all multinational firms. Stopford and Wells (1972) predict successful multinational firms will develop more integrated strategies and global structures, while Davidson (1982) believes the decentralization of autonomous foreign operations is essential for the success of multinational firms. Multinational firms confront simultaneous pressures arising from the cost benefits of global integration and
the product and marketing adaptations of local responsiveness. Responding to these simultaneous needs for efficiency and responsiveness requires multidimensional organizations (Bartlett and Ghoshal 1988). Some multinationals pursue transnational strategies which borrow elements from both the global integration and the locally responsive strategies.

Transnational Strategy

Firms that pursue the benefits offered by both responsive and integrative strategies are referred to as transnationals (Hammerly 1992; Rugman and Verbeke 1992). Doz (1980) describes the transnational strategy (also called administrative coordination in earlier research articles) as a compromise strategy that exchanges internal efficiency for external flexibility. The transnational strategy is a series of limited adaptations to a complex environment. The adaptations attempt to acclimate the organization to the most critical and uncertain environmental factors. Multinational managers require strategic flexibility to reconcile conflicts between economic and political imperatives. Moreover, the resulting lack of worldwide
integration that may result from pursuing a transnational strategy may also spawn an ambiguous protracted strategy (Doz 1980).

Transnational managers are faced with constraints that may require the use of matrix-type organizations or elaborately-mixed structures to deal with the resulting administrative complexity (Prahalad and Doz 1987; White and Poynter 1989). The challenge of more collaborative-authority approaches between headquarters and subsidiaries creates a need for more elaborate and interdependent organizations (Perlmutter 1969). Unity of authority and responsibility tends to break down when multinationals pursue transnational strategies and create matrix organizational structures. The potential consequences of the resulting elaborate structures are administrative vagueness and increased costs of management (Georgantzas 1989).

Diversified multinational managers attempt to build transnational strategies by utilizing administrative coordination through a variety of techniques. Unilever, for example, has a mixed product and area organization structure, but has not adopted a matrix design.
Unilever managers coordinate the decentralized operations with a strong corporate culture disseminated throughout the organization by the finance, research and development, and management development departments (Maljers 1990). Some multinationals create task forces for coordinating complexity (Fannin and Rodriques 1986). Other multinationals use permanent international management teams to handle strategy development and implementation. These teams can be responsible for technology transfers, creation of international joint ventures, and managing any headquarter and subsidiary conflicts (Gross, Turner, and Cederholm 1987). For example, 3M Corporation uses their European Management Action Teams to equalize the needs of local subsidiaries and the corporation's need for global direction (Hammerly 1992).

Technologically-diversified multinationals are often willing to pay the costs of coordination across international borders in order to protect critical technology. Any sharing of common technology creates increased communications and interdependencies and; therefore, greater administrative coordination (Prahalad
The full impact of new advances in information technology has not yet been realized. Rapid information transfers offered by information networks could offer an efficient method for multinational corporations to integrate their worldwide operations and the flexibility to respond to local market demands (Neo 1991).

The transnational organization can be viewed as an organizational capability that is grounded in the managements' geocentric view of the international business environment. An organization with a transnational strategy tries to create a competitive advantage by transferring knowledge between home and host country operations (Kobrin 1994).

Transnational strategies can be implemented by using existing functional elements of the organization. Hitt and Ireland (1987) recommend that product organized firms use the functional departments of research and development (R&D) or manufacturing technology as the distribution channels of administrative coordination. While R&D and manufacturing departments are productive areas for implementing transnational strategies,
culturally-responsive advertising can be a barrier. Hite and Frasier (1990) found that the advertising function is almost always either highly centralized or very decentralized. Advertising agencies, such as Ogilvy and Mather Worldwide and J. Walter Thompson Company, are giving executives worldwide authority to manage multinational accounts (Wentz 1993).

International Export Strategy

Ghoshal and Nohria (1993, 26) described the strategy classification of international export strategy. They portray an environment with weak forces for both global integration and local responsiveness as "placid." Some industries exist in environments where both contingencies are weak. For example, metals, paper, textiles, and cement are products where market tastes do not vary significantly in different areas of the world and; therefore, there is less pressure for responsive strategies. There is also little pressure on companies with international strategies to bear the expense of global integration of operations because transportation costs offset the advantages of arbitrage and leverage.
Palmer, Jennings, and Zhou (1993, 101) describe an organization that has not arranged its activities according to product or geographical market as the "unitary form." They describe the unitary form as an organization "which groups tasks according to their position in the technological system and centralizes most decisions."

The next section describes the five predominant categories of organizational structures found in modern business organizations doing business in international markets. The emphasis of these categories of organizational structure is the headquarters and first division of authority and responsibility found in the multinational organization.

Five Organizational Structures

An organization's structural configuration reflects the various decisions regarding where activities are to be performed (Porter 1986). The dimension of structure included in the dissertation consists of the lines of authority and reporting responsibility between the headquarters and the first major divisions. The relationship between the headquarters and the first
The competing dimensions of geography, function, and product create the basis for most divisional groupings. The decisions affecting the formal segmenting often involve organizational compromises (Mintzberg 1979). Five organizational structures describe the major ways decision making authority is segregated in multinational organizations (Daniels, Pitts, and Tretter 1984; LeMak and Bracker 1988). The five organizational structures are: (1) international division, (2) products division, (3) area divisions, (4) matrix or mixed area and products structure, and although less common, (5) worldwide functional (see Table 2 below). These structures are the dominant patterns of organization that rationalize three operative dimensions: function, area, and product (Davis 1988).

There are other ways to describe an organization's structural dimensions. For example, formalization of rules and specialization of labor are also useful ways of examining an organization's structure (Hodgetts and
Table 2. Five Organizational Structures

<table>
<thead>
<tr>
<th>Structure</th>
<th>Design Dimension(s) Emphasis</th>
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<tbody>
<tr>
<td>International Division</td>
<td>Function</td>
</tr>
<tr>
<td>Products Divisions</td>
<td>Products</td>
</tr>
<tr>
<td>Area Divisions</td>
<td>Geography</td>
</tr>
<tr>
<td>Matrix or Mixed Area/Products Divisions</td>
<td>Products/Geography/ and/or Function</td>
</tr>
<tr>
<td>Worldwide Functional</td>
<td>Function</td>
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Luthans 1994). The extent to which subsidiaries are providers or users of information is another structural dimension on which an organization can be analyzed (Gupta and Govindarajan 1991).

The dimensions of greatest interest are product, area, and function because they have most often been used by researchers and managers to determine organizational charts and the major divisions of authority and responsibility. These dimensions of structural departmentalization are significant because most managers use these dimensions as the basis for their organizing decisions. The strategy and structural
configuration that results from the fit or misfit among all the organizational elements includes the power and authority found within the departmental structure (Miller 1996).

Changes in organization structure are particularly interesting to the study of multinational corporations, since they are often moving into international markets in order to grow. Stopford and Wells (1972) describe a three-phase sequence of structural change for organizational expansion abroad, which has subsequently been labelled the evolutionary model. Their model describes how most firms begin as a loosely-organized group of autonomous subsidiaries, then organize into an international divisional structure, and finally into global structures. The global structures include all geographical regions divisions, worldwide product divisions, worldwide functional divisions, mixed organizations, and matrix structures (Stopford and Wells 1972). The international division structures and global structures originally described by Stopford and Wells in 1972 are still often found in multinational organizations (Robey and Sales 1994). The following
subsections describe each of the organization configurations that form the organizational structure research construct.

**International Division Structure**

Hulbert and Brandt (1980) report that in the 1960s 85% of American-based multinationals used an international division structure. Multinationals often continue to use the international division structure as long as the international division remains smaller than most of the domestic divisions (Fatehi 1996). From an evolutionary theory perspective, the international division structure is an intermediate step for domestic firms that are growing into multinational organizations. When U.S.-based, domestic firms look to foreign markets as possible means for expanding product sales, they may first create an export department. Establishing an international division is the next logical structural change as firms pursue opportunities for acquiring foreign resources and locating production facilities abroad (Pitts and Daniels 1984).

Managers of international divisions are usually senior corporate officers who report directly to the
president (Daniels and Radebaugh 1995). They are often at the same organizational level as a domestic functional or product division manager. Although worldwide coordination of either functional or product line activities is not accomplished, this arrangement establishes a single voice for all international interests at the headquarters (Pitts and Daniels 1984).

The task of the international division is to coordinate the activities of all the foreign subsidiaries. Stopford and Wells (1972) point out that a limitation of this structure is international division managers having centralized control of the foreign subsidiaries. The varieties of local conditions are too complex for division managers located in the home country to analyze. There is often duplication of resources among managers and coordination is often difficult. Therefore, managers in the subsidiaries usually find themselves in the best place to make autonomous decisions (Griffin and Pustay 1996).

A 12 year examination of 170 U.S.-based, multinational firms was conducted by the Harvard Multinational Enterprise Project and suggested that
strategy and structure follows an evolutionary pattern (Stopford and Wells 1972). Of the 170 firms examined, 163 originally established international divisions. During the 12 years of the study, 38 of these firms made the transition from international division structures to global area or product structures. Stopford and Wells (1972) attribute the major structural changes to a combination of two factors; increased reliance on sales abroad and increased diversity of products. Only 20 firms did not follow the evolutionary model and changed directly from domestic structures to global area or global product structures without first going through an international division phase. In almost every instance, these 20 firms expanded abroad by mergers and acquisitions with other multinational firms (Stopford and Wells 1972).

International division structures are still found in modern organizations. Most firms that utilize the international division structure are primarily domestic companies that are expanding into international markets. Organizations seeking to adapt their product strategies, financial planning, and personnel practices to local
needs will often change to a geographical regions division structure (Robey and Sales 1994).

Multinational managers seeking to increase coordination between their domestic and foreign operations typically replace the international division structure with either a global product, area division, or matrix structure (Davidson 1982). Prahalad and Doz (1987) recognized that product or area organizations give great clarity to the location of responsibilities, roles of managers, and tasks that need to be performed. The growing complexity of international operations moves organizations towards more worldwide structures and away from the international division form (Stopford and Wells 1972; Daniels and Radenbaugh 1995).

Phatak (1983) describes an alternative practice for coordinating worldwide operations where former international division management teams are placed in staff positions. These advisors can provide integrating functions with environmental analysis of legal, political, cultural, and economic conditions in different markets.
**Products Divisions Structure**

Davis (1988) indicates that companies with heavy investments in research and development will usually divide their international divisions and combine products with domestic units to build worldwide product groups. The products divisions structure supports the control and transfer of technology and the introduction of new products between domestic and foreign divisions (Davis 1988; Robey and Sales 1994). The product structure also supports global efficiency and integration strategies. Worldwide product managers tend to stress organizational skills, such as manufacturing competence, product standardization, and global sourcing (Bartlett and Ghoshal 1987b).

Product structures are often the preferred organization design for multinationals with strategies that emphasize competitive advantages from innovative manufacturing technology and technical product information (Mahini 1988). Product structures are also found in multinational firms that make less attempts to tailor products to local markets and who have a limited
need for local product market knowledge (Channon and Jallard 1978).

Channon and Jallard (1978) point out the disadvantages of a worldwide product organizational structure. These drawbacks stem from the lack of a central international focus beyond the international integration of individual product groups and technological concerns. Since product divisions found within a single enterprise are different in size and have dissimilar resources, smaller product units may not grow at the same rate as larger product divisions and may lack the needed resources to pursue global integration strategies. Communication and coordination between product divisions is often deficient and this can lead to production inefficiencies, such as duplicate production facilities (Channon and Jallard 1978).

In summary, firms emphasizing production concerns tend to develop worldwide product structures, while multinational firms relying on marketing techniques tend to create area division structures (Griffin and Pustay 1996). Hulbert and Brandt (1980) point out that the causes of product or area structural development in
multidivisional organizations have rarely been examined since the original 1972 work of Stopford and Wells.

**Area Divisions Structure**

Area divisions structure is an organizational structure where the operational responsibilities are assigned to line managers covering a geographic area (Fayerweather 1982). An attribute found in the area division structure that separates it from the international division structure is that home division managers and area managers have comparable responsibilities. This structure eliminates the international division manager as a reporting level between the area manager and the president and thus, shifts worldwide coordination responsibilities to the headquarters managers and away from the international division managers (Stopford and Wells 1972).

Multinational organizations wanting to analyze and respond to the varied needs of national or regional markets are best supported by a strong area division structure (Bartlett and Ghoshal 1987a). Even though area division structures tend to have the most dispersed management responsibilities, area divisions are not
found in the most geographically-dispersed companies (Stopford and Wells 1972).

There are other characteristics found in firms organized into area divisions structure. Multinationals that tend to have mature products, stable technology, and narrow product lines along with high foreign growth potential often structure their global organization with area divisions (Channon and Jallard 1978; Davis 1988). This structure is most often successful with firms in markets with high regional product differentiation, low product diversification, and regional economies of scale (Channon and Jallard 1978). Firms with area divisions structures are often concerned with obtaining detailed knowledge of local conditions, legal constraints, and consumer preferences (Davis 1976; Robey and Sales 1994).

Ford Motor Company changed their organizational structure from an international divisions structure to an area divisions structure in 1967. The structural change was matched with a new strategy to develop a single range of cars for the European market. Ford managers wanted to deal with political risk by having a local presence and reach economies of scale by
consolidating similar European markets (Channon and Jallard 1978). The major advantage of the area structure is an enhanced ability to differentiate local markets and find more appropriate marketing mix strategies (Davis 1988).

John Deere and Co., a U.S.-based, farm equipment manufacturer changed its structure from an area divisions structure to a worldwide functional structure in the early 1960s. This move was made in order to globally integrate its manufacturing, marketing, and other administrative functions. This led to a complicated organizational structure and reduced product line flexibility. The worldwide functional structure is rare, but it is occasionally found in industries where product diversity is limited (Channon and Jallard 1978).

**Worldwide Functional Structure**

A worldwide functional structure is a global organization where partitioning is grouped by functions, such as finance, production, and marketing on the first-management level below the chief executive officer. Building and integrating core competencies and organizational learning are strengths of the functional
organization structure. The direct lines of authority between functional managers allows for the transfer of specialized knowledge and skills to wherever it is required (Bartlett and Ghoshal 1987b).

The worldwide functional structure is rare due to its weakness in dealing with multiple-product lines. The chief executive officer has the only position with formal accountability for overall firm profitability because of the separation of the manufacturing and marketing departments (Phatak 1983). Also, the worldwide functional structure is not responsive to local concerns and tends to have extremely centralized decision making (Pitts and Daniels 1984).

Worldwide functional structures are most common in extractive industries, such as oil and metal producers. These industries have specialized functions of exploration, production, transportation, and refining that demand integrated operations and central coordination of the marketing function. Occasionally, specialized end-products groups are subdivided by region or product to secure adaptation to the local markets (Channon and Jallard 1978).
Multinational managers must weigh the costs and benefits of the area, product, and functional dimensions and select a structure that best adapts their strategy to the environment. To maintain unity of command, multinational managers are faced with selecting one dimension to emphasize in the formal structure (Phatak 1983). The production activity is an important function and often uses more personnel and assets than any other single activity. Unity of reporting financial information in a direct line of responsibility is important because business organizations almost universally use financial and accounting data to measure performance of sub-units. When organizations are multinational, the special considerations of regional and local tastes and preferences make the area dimension a cause for special consideration (Pitts and Daniels 1984). Researchers and some multinational managers have investigated the matrix type organization in hopes of making the three reporting dimensions more harmonious within conventional unity of command organizations.
Matrix or Mixed Product and Area Structure

Bartlett and Ghoshal (1987b) describe the matrix structure as a multidimensional organization with simultaneous responses to needs for production efficiency, local responsiveness, and organizational learning. In a matrix organization the management chooses a formal structure with two or more dimensions for grouping activities and gives equal authority to each dimension. The result is that middle managers reporting to two or more division managers (Stopford and Wells 1972; Davis and Lawrence 1977; Phatak 1983). Organizations want to create structures that offer flexibility to meet the demands of dynamic, multidimensional, and demanding international environments. While flexibility is important, there are also costs associated with changing to structures that are more complex and difficult to manage. Simplicity in lines of authority also has advantages. Ghoshal and Nohria (1993) caution multinational organizations to match the complexity of their structures to the level of turbulence in their environments.
Some researchers are critical of continuing investigations that use multidivisional area and product structures in multinationals. Bettis (1991) asserts that multidivisional structures are becoming inapplicable in a global environment of matrix organizations, multiple reporting relationships, electronic, and network organizations. Some management systems, called virtual organizations, have redefined their organizations by expanding the view of organizational boundaries to include customers, suppliers, distributors, and other stakeholders. The virtual organization offers a means for rapid discovery and distribution of knowledge in the world trade of ideas (Rogers 1996).

Pitts and Daniels (1984) describe how some researchers and multinational business executives in the 1970s advocated the matrix organization structure in multinationals. In their 1984 survey of the Fortune 500 largest corporations, they only found one true matrix organization structure out of 93 respondents (Pitts and Daniels 1984). Advocates contend that the matrix structure offers organizations committed to integrated
operations a better way to balance the multiple-design dimensions than are possible using a traditional unity of command structure (Stopford and Wells 1972; Davis 1976; Prahalad 1976; Herbert 1984).

Franko (1976) does not believe the matrix structure is the final evolution of a multinational organization. Instead, he sees the matrix structure as an intermediate structure where organizations learn the effectiveness of group decision making, shared responsibility, and informal communication networks while they grow into worldwide product organizations. Miles and Snow (1995) propose the spherical structure as tomorrow’s network firm. Spherical structures are multifirm networks that combine two or more organizations with interrelated competencies. Miles and Snow (1995) see the spherical structure as the next step in structural evolution that has moved from sole proprietorships to complex global matrix organizations.

Davis and Lawrence (1977) describe how Corning Glass Works temporarily attempted to use a matrix design during their transition from an international division structure to a worldwide product structure. The matrix
structure did not prove to be a good structure for resolving conflicts between domestically-oriented and internationally-oriented managers (Davis and Lawrence 1977).

Other researchers question the viewpoint that the matrix is a structure capable of integrating the multiple design dimensions found in multinationals. They point out the problems inherent in the matrix structure, such as higher costs of management, more power struggles, and slower decision making (Fayerweather 1982; Bruce 1995). The central impediments to matrix structure success arise from the violation of Fayol's traditional unity of command principle and the matrix's history of poor conflict resolution (Pitts and Daniels 1984).

Managers reorganized into matrices tend to align themselves back into familiar unity of command patterns (Pitts and Daniels 1984). For example, Dow Chemical had a matrix structure in 1968 based on three design dimensions. In 1970, the prevailing structural patterns diminished to the two design dimensions of geography and product. By 1974, the Dow matrix had deteriorated to a
primarily area-based structure (Davis 1976). Phillips and Ciba-Geigy managers, seeking more centralized authority, also reported that they have gradually moved away from matrix structures to worldwide product responsibilities (Franko 1976).

In summary, the matrix organization structure may not have widespread acceptance as an international organizational structure. Nevertheless, it continues to be offered as an alternative multidimensional organization design in many textbooks. Drucker (1974, 598) predicted that the matrix structure would not become the accepted organizational structure because it is "fiendishly difficult."

In mixed organizational structures various parts of the organization are divided along different dimensions. Some companies, divisions, or functions may be organized in product divisions, while others are divided along area or even functional divisions. Almost all organizations will have some evidence of mixed area, product, and functional structural elements (Habib and Victor 1991). Hoskisson, Hill, and Kim (1993) contend that most large transnational organizations use some
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<td>Hite &amp; Frasier (1990)</td>
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<td>Porter (1990)</td>
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<td>Roth &amp; Morrison (1990)</td>
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<td>Melin (1992)</td>
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<td>Rugman &amp; Verbeke (1992)</td>
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<td>Hoskinsson, Hill, &amp; Kim (1993)</td>
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<td>Morrison &amp; Roth (1993)</td>
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<td>Boddewyn &amp; Brewer (1994)</td>
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<td>Johansson &amp; Yip (1994)</td>
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<td>Sarathy (1994)</td>
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<td>Miles, Coleman, &amp; Creed (1995)</td>
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<td>Miles &amp; Snow (1995)</td>
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<td>FIT</td>
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<tr>
<td>Thackray (1995)</td>
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<td>Miller (1996)</td>
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<td>Tallman and Li (1996)</td>
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Key to Contingency Factors Research Approach:

FIT = Fit and organizational configuration theories.
EVO = Evolutionary and stage model theories.
PRF = Performance measures and strategy/structure as a process for creating efficiencies.
CLT = Organizational and national cultural factors as determinants of the strategy/structure relationship.

Type of multidivisional structure and that the evidence is not clear which organizational structures, strategies, and environments may create the best fit. The next section describes the hypothesized strategy and structural fits tested in this research.
Hypotheses

The hypotheses were derived from the strategy, structure, and performance research framework. Strategy and structure fit is indicated when better economic performance is found in multinational organizations with hypothesized strategies and structures than in multinational organizations with other configurations.

The structural design dimensions of product, area, and function are fundamental patterns of design that are considered for the uppermost grouping of activities in any organization. Organizations that require different technologies to produce separate lines of goods and services may choose to form divisions along the product design dimensions. Multinational organizations that want to implement integrated strategic decisions that emphasize separate product lines may also develop global products divisions structures (Engelhoff 1988).

Recently, IBM began reorganizing in 14 customer-focused product divisions (And other ways to peel the onion 1995). Corporate executives responded to a study indicating that 80% were centralizing global strategies (Lauren 1994). The first hypothesis reflects the
concept that firms faced with pressure to pursue worldwide integrated strategies in order to create international arbitrage and leverage will implement product divisions structures.

$H_1$: Global integration strategic and product division structural fit is a predictor of the returns on assets of U.S.-based, single-business multinational organizations.

Amba-Rao (1993) argues that multinational organizations need to have more responsive strategies by sharing information and building host country infrastructures. He believes the responsive strategy will give multinational organizations greater negotiating power with host governments and that a close working relationship is the responsibility of both the multinational company and the host government.

A local area responsive strategy is best supported by an area divisions organizational structure because the local area manager has the authority to respond to changes in market and host government demands (Bartlett and Ghoshal 1987b).

Matshushita is a corporation that was admired for its ability to develop global products, efficiently use
centralized manufacturing, and quickly get products to markets. Yet, Matsushita managers chose to localize their manufacturing efforts when faced with increased host government pressure (Bartlett and Ghoshal 1988). International Harvester created a global products structure in 1977, but found this structure was not effective for dealing with government relations or changes in local markets. Internal communications were slow and senior-level corporate managers found themselves involved in the details of lower-level negotiations (Mahini 1988). International Harvester also changed their international strategy and became more responsive to the local area demands. Service firms are increasingly challenged to enter foreign markets using a fragmented strategy; often with a local partner. The above examples form the basis for the second hypothesis.

H2: Locally responsive strategic and area divisions structural fit is a predictor of the returns on assets of U.S.-based, single-business multinational organizations.

International corporations simultaneously pursuing global integration and locally responsive strategies
(transnational strategies) should perform best with a matrix or a network of area and product organized divisions or subsidiaries (Chakravarthy and Perlmutter 1985; Hodgetts and Luthans 1991). Multinational firms with transnational strategies must manage across borders and be able to acquire the benefits of local responsiveness and global integration (Kelly 1989). The reason multinationals adopt a mixed or matrix structure is that the other departmental designs do not allow enough integration of inputs from regional, functional, and product areas (Fatehi 1996). It seems logical to assume that multinational organizations in more complex environments will develop strategies and structures that reflect that environmental complexity. Thus, the third hypothesis proposes that a complex organizational context consisting of pressures for both integration and responsive strategies will result in a more complex organizational structure (Prahalad and Doz 1987; Ghoshal and Nohria 1993).

**H3:** Transnational strategic and global matrix structural fit is correlated with the returns on assets of U.S.-based, single-business multinational organizations.
Summary

A review of multinational strategy and structure literature indicates that there are very few conclusions that receive widespread agreement from researchers. Some authors of multinational management books offer charts that describe strategies, structures, cultural predispositions, personnel, and marketing techniques that tend to be correlated (Hodgetts and Luthans 1991; Yip 1992). While these intuitively appealing charts and discussions of the strategy and structure relationship are useful for studying multinational strategy, it should be recognized that research in this area often does not result in strong correlations.

Rhinesmith (1993) describes a congruous strategy and structure in multinational firms as important; but alone, are incomplete conditions for predicting global success. Research in multinational integration strategy needs to examine the business environmental influences that lead successful multinational firms to choose particular strategies and structures.

The next chapter explains the research methodology used for testing the above hypotheses. The Methods
chapter (Chapter III) includes descriptions of the
design of the study, the mail survey instrument, and the
procedures for the collection and treatment of the data.
CHAPTER III

METHODS

The purpose of the Methods chapter is to describe the research design, research model, instrument, treatment of the data, and power of the statistics. The research model is derived from the research framework that was developed in Chapter II and is further explained as a mathematical model. The Methods chapter also presents the operational definitions of the variables that make up the research model. Next, the development of the mail survey instrument is described, as well as, the sample selection technique and the efforts that were made to increase the response rate. The last sections of the Methods chapter explain the procedures for collection and treatment of the data. Finally, a calculation of the sample size required to achieve sufficient statistical power is expressed.
Research Model

A mathematical expression describing the strategy and structural fit research framework is:

\[ \text{PERF} = f(\text{INTEGRA, RESPONSE, STRUC, OCF}) \]

where:

\begin{align*}
\text{PERF} & = \quad \text{economic performance} \\
\text{INTEGRA} & = \quad \text{integration strategy} \\
\text{RESPONSE} & = \quad \text{responsive strategy} \\
\text{STRUC} & = \quad \text{multinational organization structure} \\
\text{OCF} & = \quad \text{other contingency factors} \\
f & = \quad \text{is a function of...}
\end{align*}

Performance is influenced by a multinational organization's ability to build a capable organization. Organizing business procedures in a way that enhances strategy implementation is a key component to organization building (Thompson and Strickland 1996). The research model is built on the concept that matching multinational strategy and organization structure will have a positive impact on the organization's financial performance (Doty, Glick, and Huber 1993).

Performance measures have been underutilized as dependent variables in organizational theory studies. Ignoring performance measures both hinders the
development of theory and demonstrates a lack of consideration by researchers for the concerns of practitioners (Ginsberg and Venkatraman 1985). An empirical study comparing Japanese and U.S. firms successfully used returns on assets as a measure of profitability. Jennings and Seaman (1994), using returns on assets as a measure of performance, found that organizations with an optimum strategy and structure match tend to have higher performance.

Murray, Kotabe, and Wilt (1995) used returns on investment as a measure of market performance. Returns on investment is a performance measure alternative. The practical significance of using returns on investment as a measure of performance, however, is dubious (Prescott 1986). Returns on assets more accurately measures organizational effectiveness than returns on investment because of the returns on investment ration reflects financial leveraging. A firm's debt burden will magnify the returns on investment measure. Although higher returns on investment ratios may indicate good performance, the higher returns on investment ratios often indicate increased financial risk. The research
model uses returns on assets as a measure of performance because it more accurately indicates the performance of the organization without including financial leveraging.

A more detailed expression of the research model describes the strategies and structures expected to lead to better economic performance:

<table>
<thead>
<tr>
<th>STRATEGY</th>
<th>STRUCTURE</th>
<th>PERFORMANCE</th>
</tr>
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<tbody>
<tr>
<td>Nominal Categories</td>
<td>Nominal Categories</td>
<td>Nominal Categories</td>
</tr>
<tr>
<td>Integration (S1)</td>
<td>Product (O1)</td>
<td>Performance (P)</td>
</tr>
<tr>
<td>Responsive (S2)</td>
<td>Area (O2)</td>
<td>returns</td>
</tr>
<tr>
<td>Transnational (S3)</td>
<td>Mixed Matrix (O3)</td>
<td>on</td>
</tr>
<tr>
<td>International (S4)</td>
<td>International or Functional (O4)</td>
<td>assets)</td>
</tr>
</tbody>
</table>

where:

\[ \rightarrow = \text{is found with...} \]
\[ \Rightarrow = \text{which leads to...} \]

The matches between the multinational strategies and organizational structures are the result of a review of the international integration research literature. Firms with integration strategies are expected to use product structures to implement their strategies (Engelhoff 1988). The implementation of a responsive strategy is expected to be best accomplished by an area divisions structure (Bartlett and Ghoshal 1989). Matrix
organization structures are expected to offer the best fit for implementing transnational strategies (Chakravarthy and Perlmutter 1985; Hodgetts and Luthans 1991).

International organizations that are not attempting to implement either locally-responsive or globally-integrated strategies may only be partially committed to globalization. Although there is scant research on the international division structure, it is expected to only be used by companies involved in international exporting strategies (Stopford and Wells 1972).

The strategy variable can also be expressed in terms of the pressure for integration and responsiveness of the organizations' environments. Firms with integration strategies are competing by achieving worldwide production and marketing efficiencies (Hout, Porter, and Rudden 1982; Prahalad and Doz 1987). Firms pursuing a responsive strategy are seeking to improve their performance by reacting quickly to changes in local market conditions (Bartlett and Ghoshal 1988; Ohmae 1990). Multinational firms employing transnational strategies are driven to achieve
efficiency though worldwide production and marketing opportunities and are also constrained to react to local market demands (Hammerly 1992; Rugman and Verbeke 1992). The next section explains the research design.

**Research Design**

A mail survey research method was used to gather opinion data from strategic planning group executives at U.S.-based multinational businesses. While survey research cannot be used to prove causal effects, Kidder and Judd (1976, 128) describe how the survey research design may serve to "answer questions about the distribution of and relationships among characteristics of people as they exist in their natural settings."

Many similar studies have used questionnaire and interview research to gather part or all of the data for the study of the strategy and structure fit relationship (Child 1973; Picard 1980; Grinyer and Yasai-Ardekani 1981; Daniels, Pitts, and Tretter 1984; Pitts and Daniels 1984; Dess and Robinson 1984; Hitt and Ireland 1985; Bart 1986; Miller 1987; Prahalad and Doz 1987; Engelhoff 1988; Miller 1988; Bartlett and Ghoshal 1989; Gresov 1989; Oral, Singer, and Kettani 1989; Hite and
Frasier 1990; Roth and Morrison 1990; Brown and Hansen 1991). Information from questionnaires was used to identify international business strategy and the organization's central structure.

The advantage of using a survey instrument results from the partial identification of managers' beliefs about how their organizations compete in their environments. These beliefs may reflect the managers' intended strategies. Mintzberg (1978) suggests that formulated strategies are better described as intended strategies. The emergent strategy is the pattern of decisions made by people throughout an organization's structure in response to organizational environmental factors. The combination of intended strategy and emergent strategies leads to realized or actual strategies. The research design assumes that managers make corporate strategy and structure decisions based largely on their intended strategies. Self-reporting methods of gathering data are appropriate ways to discover intended strategy and perceptions of the organizational environment (Snow and Hambrick 1980). The senior executives were also asked to report
organizational performance on the pilot study survey. The next subsection describes the operational definitions of the strategy and structure variables used in the study.

Variables

The strategy and structure variables used in this study are measured by a combination of survey items. There are 15 independent variables on the survey instrument. Integration strategy, responsive strategy, and organization structure are latent constructs indicated by one or more manifest variables. Table 4 (next page) represents the expected associations between the variables.

Multinational firms with higher performance (+P) are expected to have one of the four configurations of strategy and structure. A firm with a global-integration strategy (SI) is expected to have high mean scores on the integration variables (+I) and low mean scores on the responsive variables (-R). Moreover, the global-integration strategy firms are expected to have high means on the product divisions (O1) structure
Table 4. Expected Relationships Between the Variables

<table>
<thead>
<tr>
<th>STRATEGY</th>
<th>(I)</th>
<th>(R)</th>
<th>-&gt; STRUCTURE</th>
<th>=&gt;</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>S1 Integration</td>
<td>+</td>
<td>-</td>
<td>01 Product Div.</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>S2 Responsive</td>
<td>-</td>
<td>+</td>
<td>02 Area Div.</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>S3 Transnational</td>
<td>+</td>
<td>+</td>
<td>03 Mixed Matrix</td>
<td>+</td>
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where:

- STRATEGY = multinational business strategy
- I = pressure for an integration strategy
- R = pressure for a responsive strategy
- STRUCTURE = organizational structure
- P = organizational performance

(Engelhoff 1988). Responsive-strategy (S2) firms are expected to have low integration-variables (-I) and means and high responsive-variable (+R) means and they are expected to have area division (02) structures (Bartlett and Ghoshal 1988). Firms with transnational strategies (S3) are expected to have both high integration-variable (+I) and responsive-variable (+R) means (Ghoshal and Nohria 1993). Firms with international export strategies have only weak pressure for global integration or local responsiveness (Ghoshal and Nohria 1993). They are assumed to have international division structures.
The strategy variables consist of two dimensions: local responsiveness and global integration. Strategy is described by an interval scale made up of 11 questions. Possible scores for each organization on the local responsiveness scale range from 5 to 25. The strategy dimension of global integration will have scores that could range from 6 to 30.

Factors that describe the locally responsive strategy include the heterogeneity of the market, diffusion of the competition, unclear manufacturing economies of scale, stability of technology, and the cultural diversity of the executive group. Global integration strategies offer multinational managers opportunities for leveraging marketing, production, and financial resources. The global integration strategy section of the questionnaire seeks data related to a centralized business governance. When the data from the questionnaire indicates a multinational business is both locally responsive and globally integrated, the strategy is called a transnational strategy. When individual firms have little pressure to adopt either a locally responsive strategy or a globally integrated strategy,
the organization is categorized as having an international strategy.

The organizational structure variable is designed to discover how lines of reporting and authority between the headquarters and the first major divisions exist in the surveyed multinational organizations. The questionnaire offered respondents a choice of organization structures and asked them to rank each structure according to how closely it approximated their organizational structure. The selections had names, descriptions, and representative organizational chart drawings. The respondents were also given space on the survey to describe any organizational structure not listed on the questionnaire. The data generated is rank order data.

The other contingency factors (OCF) variable was included in the mathematical model to recognize the myriad of additional internal organizational and environmental contingencies that influence the central structure of a multinational organization.
Mail Survey Instrument

A research instrument was developed for the purpose of gathering data from executives serving in strategic planning groups at U.S.-based multinational firms (see Appendix A). The strategy section of the survey instrument was developed from a survey instrument by Prahalad and Doz (1987). The strategy section of their instrument was published in their 1987 book *The Multinational Mission: Balancing Local Demands and Global Vision*. Eleven variables were used to ascertain the two latent variables or constructs of integration and responsive strategy. Each of these variables or dimensions is addressed in the next two subsections. References for each variable are from the international-integration research literature.

**Local-Responsiveness Latent Variable**

Local responsiveness, a latent variable in the study, is made up of five dimensions: market, competitive situations, technology, economies of manufacture, and shared cultures of the executive group. The market variable (question one) pertains to the complexity of customer needs, market trends, and product
value. Recent articles involving U.S. energy companies with goals of entering the South American utilities markets addressed the complexities of the local markets. Regulatory environments and disaggregated local markets pressured the normally integrated utility operations to decentralize their components of operations. Acknowledging the loss of economies of scale advantages, the authors recommended locally responsive strategies to deal with the complex South American utility markets (Stark 1996; Thompson and Rose 1996).

The second question on the instrument deals with fragmented-industry competitive situations that challenge some multinational firms. An empirical study of multinational firms and their market orientation toward competition used regression analysis to discover the most significant market strategy dimensions. The findings revealed that responsiveness to dispersed competition and customer needs had the largest influence on performance (Raju, Gupta, and Yashi 1995). A recent article about international logistics proposed that competitors' nontraditional strategies and the need for a clear understanding of packing and transportation
costs were reasons for careful attention to increasing responsiveness to customer needs (Lamb 1995).

Question three on the survey instrument assesses whether or not multinational firms are in environments of rapidly changing products and technology. When technology is changing rapidly and competition is driving producers to mass production there is pressure to respond quicker to customer demands (Cosper 1996). This rapidly changing environment requires a new customer-oriented production process. Thus, multinational firms are responding by moving from inventory management to demand management (Layden 1996).

Another dimension of local responsiveness is the economies of manufacture (question four). Multinational firms are not pressured to global integration in environments with readily available raw materials and less advantages from economies of scale. Lower-cost economies favor the manufacture of low volume, high variety, and high value-added niche products. Thus, lower-cost economies allow for more responsive customer service (Luscombe 1994).
Executive groups with varied educations, experiences, and cultural backgrounds are expected to be found in locally-responsive multinational firms (question five). Diversity of cultures can be a sustainable competitive advantage for responsive and transnational organizations (van der Bosch, Frans, van Prooijan, and Porter 1992). Moreover, a study by Schneider and DeMeyer (1991) asserted that national culture has an influence on how executives respond to strategic issues. The next subsection contains a discussion of the global-integration strategy latent variable.

Global-Integration Latent Variable

Multi-plant linkages and sourcing potential make up the capacity variable (Question six). Integrated firms that can obtain raw materials and labor from the most cost effective regions of the world benefit from international arbitrage (Kogut 1985; Berkowitz and Mahan 1987).

When product and quality specifications are similar for multiple geographic regions (Question seven), multinational firms have the opportunity to pursue
international leveraging (Kogut 1985). Ford Motor Company and Unilever are examples of companies that are pursuing globally-integrated strategies. Ford has made efforts to centralize its product development structure by integrating a global strategy. Ford is in the process of reducing their product group platforms from 24 to 16 (Ford “could” reduce vehicle centers 1996). Unilever wants to develop global brands of soaps and personal care products and is consolidating its organization structures into product divisions (Atwal 1996).

Question eight asks about environments with worldwide pricing and markets that are expected to foster global-integration strategies. Kim (1996) investigated multinational brands and price sensitivity and found that a national image reduces price elasticity on premium products, thereby indicating that quality associated with a national product can support worldwide pricing structures. An integration strategy becomes more difficult to manage when prices vary in different international markets (Specker 1996).
Question nine asks about worldwide customer groups that are expected to support an integration strategy. An integrating force in multinational business that allows for more globally integrated strategies is consolidated markets (Herkstoter 1996). Thus, larger global markets allow for greater integration of worldwide operations and sales (Dustert 1992).

Research and development that is centralized in one geographic region and then transferred to other regions when needed is indicative of an integration strategy (Question 10). In an effort to align research and development efforts with business strategy, Chester (1994) recommends centralized laboratories by technical specialization rather than by markets.

Question 11 measures a dimension of global integration involving the movement of products and services between subsidiaries or divisions. Crom (1996), in a study of supply chain management, observed firms that were working effectively across national borders. These multinational firms were able to reduce cycle times and costs, and were able to maximize capacity utilization and returns on assets.
Competition and Performance Variables

The four questions in the Competition and Performance Description section of the pilot study survey were used by written permission of Robert Brown and were found in his 1989 dissertation Strategy, Structure, and Fit: Determinants of Performance for International Businesses. The Competitive and Performance Description section was eliminated from the survey instrument after the pilot study. This was done in an attempt to increase the response rate. Archival data (returns on assets) were used as the dependent variable for hypotheses testing.

Reliability and Validity

Reliability is "the extent to which an experiment, test, or any measuring procedure yields the same results on repeated trials" (Carmines and Zeller 1979, 11). The Prahalad and Doz (1987) integration and responsive instrument has rarely been used. Birkinshaw and Morrison (1995) used the integration and responsive instrument and were able to categorize multinational firms into three categories: world mandate (integration), specialized contributor (responsive), and
local implementers (adapting global products to local needs). More uses of the instrument will be required to establish reliability.

Validity of the research instrument developed for this study was examined. A panel of six professionals evaluated the survey instrument for criterion-related and construct validity (Babbie 1989). The expert panel was made up of three university professors and three international business executives. Each member of the expert panel was asked to evaluate the survey instrument for the readability of the questions, understandability of the instructions, accuracy of the rating scales, and thoroughness of the organization structure questions. The expert panel was also asked to assess the likelihood that executives might answer the survey. The panel members were specifically asked if they thought any of the questions could not be answered by respondents because of personal ethics or requests for proprietary information.

Changes in the format, wording, and content began with the recommendations of the professional panel and continued through the pilot study. The most important
contributions made by the expert panel were recommendations to improve the readability of the dichotomous questions and to add titles to all the questions. The original questionnaire had three questions under a general title of 'Marketing.' Separate titles ('Product and Quality,' 'Pricing,' and 'Target Markets') were added for each question. Changes in wording and titles were made to increase the clarity of the questionnaire. A sample request letter and expert panel comment sheet appears in Appendix B.

Factor analysis was used on the pilot study data to examine the constructs that underlie the latent variables. A confirmatory approach to factor analysis was used to verify which variables should be grouped together on the factors. The VARIMAX rotation (see Table 5 on next page) method was selected for the orthogonal rotation because a major strength of VARIMAX is that it secures a clear separation of the factors (Hair, Anderson, Tatham, and Black 1992). The a priori criterion were used to extract the three latent variables. Factor loadings greater than .30 were considered significant and factor loadings greater than
Table 5. Orthogonal Solutions

Rotation Method: VARIMAX

Orthogonal Transformation Matrix

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Rotated Factor Pattern

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<th>FACTOR 3</th>
</tr>
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<td>Q5</td>
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<td>Q11</td>
<td>-.19</td>
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<td>-.12</td>
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<tr>
<td>S4</td>
<td>.33 *</td>
<td>.32</td>
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</tbody>
</table>

Note: Values greater than absolute value .30 have been flagged by an '***'. (significant)

Values greater than absolute value .40 have been flagged by an '***'. (more important)

Values greater than absolute value .50 have been flagged by an '***'. (very significant)
.40 were considered more important. The factor loadings that were greater than .50 were considered very significant (Hair, Anderson, Tatham, and Black 1992).

Examination of the VARIMAX rotation finds that four out of the five questions loaded on the local-responsiveness latent variable (factor three). Only question four had a factor loading of less than .30 and did not load on the local responsiveness latent variable. Question four asked respondents about the economies of manufacture. The questions that loaded onto factor three were concerned with identification of customer needs and trends, the dispersion of competition, stability of technology, and the amount of shared cultural and professional experience of executives.

Questions six, seven, eight, nine and eleven loaded onto factor two. These questions were designed to discover if the respondents' firms were globally integrated. Question ten did not load onto factor two. Question ten dealt with the location research and development activities of the respondents' firms. Research and development that was carried out in a
single location and then passed on to the rest of the organization indicated a globally integrated strategy.

All four of the structure questions loaded on factor one. Structural questions one, two, and three loaded on factor one in the 'very significant' category (greater than .50). Structural question four, the global matrix structure, had a factor loading of .33 and is categorized as 'significant' (Hair, Anderson, Tatham, and Black 1992).

Multiple regression analysis was used to test the predictive power of the overall statistical model. The 15 independent variables were regressed on the dependent variable with an R-square coefficient of correlation of .6853 at a P<.01 significance level.

Multiple regression analysis was used to test the three hypotheses on the final data set. A more complete discussion of the statistical analysis is in Chapter IV (Findings).

Population Sample Selection

The population sample selection technique used for the dissertation included executives involved in the strategic planning group of U.S.-based multinational
corporation companies found in volume 1 of the 1994 reference book, *Directory of American Firms Operating in Foreign Countries*. There are approximately 2560 U.S. corporations listed in the reference book; this is the universal set of U.S.-based multinational parent companies. No attempt was made to select companies based on size, ownership structure, or industry. Habib and Victor (1991) found that strategy and structure fit was not influenced by the multinational corporation being either a service or manufacturing company.

A representative sampling plan was used to decrease the likelihood of misleading sample findings. Data gathering for the mail survey required contacting 1212 companies. The power analysis for the research design revealed that approximately 60 survey responses were needed to reach a statistical power of .80 (Cohen and Cohen 1983). Because mailout survey research designs often result in low response rates, a large mailout database of 1212 companies was used in an attempt to get enough responses to ensure adequate statistical power (Jobber, Allen, and Oakland 1985). Companies were systematically selected by including every even numbered
company listed in the reference book, *Directory of American Firms Operating in Foreign Countries, 13th Edition*. Effort was made to use companies that produced and sold products in only one industry.

**Procedures for Data Collection**

A questionnaire and a letter of introduction was mailed to each strategic planning executive on the systematically-selected name and address database. The letter of introduction was used to inform subjects about why they were chosen, as well as, provide a description of the purpose of the research. The letter of introduction incorporated three incentives for subjects to respond to the survey:

1. an offer to send the research results to any respondent who returned the survey and put the company address on the back of the return envelope;

2. an assurance of complete confidentiality; and

3. a brief explanation of the significance of the research problem.

Procedures intended to encourage subjects to respond to the survey instrument were incorporated in
the questionnaire design. Instructions on how to fill out the survey were included directly under each section title. Attempts were made to keep the respondent informed of the purpose and importance of each section by offering rationales for including the requests for information.

The questionnaire was designed to be easy to understand, quick to complete, and thorough enough to accurately assess the strategy and structure variables as defined in this study. The length of the questionnaire was purposefully limited to five pages in order to increase the response rate.

Treatment of the Data

The data analysis procedure used for testing the three hypotheses was multiple regression analysis and correlation analysis. All of the data collected for the strategy and structure variables in the study were rank-order. Only the returns on assets dependent variable was ratio data. Multiple regression analysis can be used with ordinal scales data for data analysis (Cohen and Cohen 1983).
During the pilot study, the predictive reliability of the statistical model was tested using multiple regression correlation and factor analysis. Multiple regression correlation is useful in studies where the researcher wants to identify the significance of the relationship between the independent variables and the dependent variables. Some argue that multiple regression correlation is a statistical tool that should only be used when both the independent variables and the dependent variables are metric (Aldrich and Nelson 1984). Metric data are quantitative measurements with either interval or ratio data (Hair, Anderson, Tatham, and Black 1992). Cohen and Cohen (1983) argue that multiple regression correlation can be used for data analysis with ratio, interval, and ordinal data. Data analysis results are used to produce "indications" rather than "conclusions" (Cohen and Cohen 1983: 17).

An assumption of multiple regression correlation is that the independent variables are statistically unrelated (orthogonal). Orthogonal independent variables are often found in experimental designs where controls can be used to eliminate collinearity problems.
Many issues in the behavioral sciences that are worthy of study are inaccessible to true experiments. Often the data must be gathered or observed in a natural setting. In non-experimental research designs independent variables which influence the dependent variable generally exhibit some measure of correlation with each other (Cohen and Cohen 1983).

Collinearity can be identified by examining the correlation matrix for the independent variables (see Table 6 below). Coefficients from the correlation

<table>
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<th>Integration Strategy</th>
<th>Responsive Strategy</th>
<th>Product Structure</th>
<th>Area Structure</th>
<th>Matrix Structure</th>
<th>Returns on Assets</th>
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</table>

\[ n = 41 \]
matrix are found in standardized units between -1.0 and 1.0. If collinearity between the strategy and structure variables is found in the correlation matrix, the highly correlated independent variables can only be used for prediction (Hair, Anderson, Tatham, and Black 1992).

**Statistical Power**

Power testing is used to show how well a statistical test minimizes the possibility of a Type II error. Power analyses are intended to help researchers avoid making incorrect decisions. Cohen and Cohen (1983) provide a means of estimating power for multiple regression correlation with two or more independent variables. The goal is to determine the sample size \( n \) that will offer the desired statistical power. There are six steps to estimating the power of a research plan.

The first step is to set the significance criteria. This was set at \( \alpha = .05 \). The \( \alpha = .05 \) is widely used as a standard in the behavioral sciences (Cohen and Cohen 1983). The next step is to set the desired power level for the F test. The decision regarding what power to
use requires the researcher to reconcile the costs of gathering additional data and the costs of failing to reject the null hypothesis. The convention proposed by Cohen and Cohen (1983) is to set the power to .80. The third step is to determine the degrees of freedom (df). The degrees of freedom for the power analysis is 15, the number of independent variables (k).

The fourth step in determining the power analysis of a research plan using multiple regression correlation is to find the L value (= 18.81) associated with df = 15, and α = .05 (Cohen and Cohen 1983). The fifth step is to determine the population effect size (f²) using the following formula:

\[
f^2 = \frac{R^2}{1 - R^2} = \frac{.30}{1 - .30} = .4285
\]

The coefficient of determination (R²) used in the computation of the effect size was estimated as the total variation of the dependent variable explained by the independent variables. An R² of .30 is a reasonable estimate for the power analysis (Cohen and Cohen 1983).

The sixth step is to make substitutions into the power analysis formula and determine the number of cases
needed for .80 statistical power. The following formula shows the calculation of \( n \):

\[
n = \frac{L}{F^2} + k + 1 = \frac{18.81}{.4285} + 3 + 1 = 59.897 \approx 60
\]

The power analysis indicates that 60 useable data sets should offer a .80 power when using multiple regression correlation to test the overall research model.

**Summary**

The purpose of this study was to investigate different strategy and structural configurations of high-performing and low-performing U.S.-based multinational organizations. Chapter I (Introduction) provided an introduction to the research question and the theoretical underpinnings of the study. Chapter II (Literature Review) reviewed relevant multinational strategy and structure literature. The review of the literature lead to the conceptual framework and the development of the hypotheses. Chapter III (Methods) described the research design, and treatment of the data.
International integration strategy research continues to be a significant research topic because of the rapid globalization of U.S. firms and the need to know which strategies and structures are being utilized by higher-performing and lower-performing multinational organizations. Chapter IV (Results) will explain the results of the statistical tests on the data. Chapter V (Evaluation and Conclusions) will discuss the importance and the meaning of the results.
CHAPTER IV

RESULTS

This chapter presents the results of the data analysis. The Results chapter begins with a description of the sample, and reports the statistical analyses of the data from the pilot study and the research data. Multiple regression correlation was used to test the predictive reliability of the statistical model. Next, factor analysis was employed to examine the viability of using the latent strategy and structure variables in the hypotheses tests. Finally, the results of hypotheses tests are reported.

The purpose of the study is to discover if specific international strategies and organizational structures are related to better organizational performance. International strategies were examined using the dimensions of integration strategies that utilize worldwide leveraging of international markets, suppliers, and production; and responsive strategies that seek advantages from close involvement in local
markets, suppliers, and production. A third strategy, designated as transnational strategy, was also investigated. A transnational strategy is a combination of both integration and responsive strategies. Organizational structures that are often discussed in the international business management literature were also included in the research. Theorized fits between the organization structures and strategies formed the basis for the hypotheses. The hypothetical strategic and structural fits were developed from a review of the literature.

Description of the Sample

The sample for this study included 1212 United States companies with operations in foreign countries. The sample was taken from the Directory of American Firms Operating in Foreign Countries (1994). Information about each company found in the Directory included the name and address of the company, the name of the President or CEO, telephone number, number of employees, a list foreign countries where the company operates, and the major products the company sells. The sample was limited to companies with goods or services
that would constitute a single-industry. A letter and survey were sent to the President or Chief Executive Officer listed for each company. A postage-paid return envelope was enclosed with each letter.

Pilot Study Results

An initial mail-out of surveys and follow-up post cards yielded 41 usable responses. Multiple regression analysis and factor analysis was used to examine the pilot study data.

Multiple Regression Analysis of the Pilot Study Data

Release 6.06 of SAS/STAT software was used in the data analysis. A multivariate regression analysis procedure utilizing PROC REG was used to test how well the independent variables predicted the dependent variable. Table 7 (below) shows that the R-square coefficient of correlation is .6853 at a P<.01 significance level. This statistic suggests that 68.53% of the total variation in the dependent variable (ROA) is explained by the independent variables and that the model is statistically significant at the .01 level.
Table 7. Multiple Regression Analysis of the Model

Model: MODEL 1
Dependent Variable: ROA

Analysis of Variance

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<tr>
<th>Source</th>
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<th>Mean Square</th>
<th>F Value</th>
<th>Prob&gt;F</th>
</tr>
</thead>
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<td>0.45147</td>
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<td></td>
</tr>
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</table>

R-square 0.6853

n = 41

Factor Analysis of the Pilot Study Data

Release 6.06 of SAS/STAT software was used in the pilot study data analyses. Testing the hypotheses in this study assumes that the covariance in the observed variables is due to the presence of three latent variables. The latent variables are the two dimensions of strategy-designated integration and responsiveness and the structure variable.

One of the first steps in a factor analysis is the calculation of the correlation matrix (Hair, Anderson, Tatham, and Black 1992). The absolute value of the
correlation coefficient shows the strength of the relationship between the variables. The larger the absolute value of the coefficient, the stronger the degree of association between the variables. The largest absolute value is 1.0 and the smallest value is 0.0 (Heiman 1992). The Pearson correlation coefficient was used to describe the relationship between each of the variables (See Table 8 on the next page).

Collinearity exists when two independent variables have high correlations of .90 or more (Hair, Anderson, Tatham, and Black 1992). Examination of the correlation matrix indicates that collinearity is not a problem. Further examination of the correlation matrix reveals that the strengths of the relationships between most variables are not very high in either a positive or negative direction.

The PROC FACTOR statement was used to initiate a factor analysis. Factor analysis is useful for assessing the validity of the empirical measures. Moreover, the factor analysis must be interpreted from a theoretical perspective to avoid errors involving the validity of the instrument. Interpretation of the
Table 8. Correlation Matrix of Strategy and Structure Items

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factor structure without considering the underlying theory can lead to misleading conclusions (Carmines and Zeller 1979). Thus, the factor analysis procedure was performed to find support for the inclusion of original variables into a smaller set of factors. The factors, or constructs, were assumed to underlie the original variables (Hair, Anderson, Tatham, and Black 1992).
The principal components analysis was used for the initial factor method. This analysis produced an eigenvalue for each of the 15 variables and a scree plot of the eigenvalues. Selections of the number of components to extract were made using either the latent root criterion (called the eigenvalue-one criterion in the SAS/STAT program) or the scree test. Next, the interpretability criterion was used to verify that the number of retained components is reasonable in terms of what is known about the constructs in the study.

For any VARIMAX rotation there should be at least three variables with significant loadings on each retained factor (Hatcher 1994). The eigenvalue-one criterion is an approach that considers any eigenvalue that is less than one as trivial and should not be retained (SAS/STAT User’s Guide 1995). Seven components with eigenvalues greater than one were found in the initial correlation matrix (see Table 9 on the next page). Seven components were considered too many components for a study with 15 independent variables. Subsequently, a scree test was used to determine the number of components to be retained.
Table 9. Eigenvalues of the Correlation Matrix

<table>
<thead>
<tr>
<th>Component</th>
<th>Eigenvalues</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2.2007</td>
</tr>
<tr>
<td>2</td>
<td>2.0852</td>
</tr>
<tr>
<td>3</td>
<td>1.9370</td>
</tr>
<tr>
<td>4</td>
<td>1.6545</td>
</tr>
<tr>
<td>5</td>
<td>1.4194</td>
</tr>
<tr>
<td>6</td>
<td>1.2217</td>
</tr>
<tr>
<td>7</td>
<td>1.0510</td>
</tr>
<tr>
<td>8</td>
<td>0.9228</td>
</tr>
<tr>
<td>9</td>
<td>0.7352</td>
</tr>
<tr>
<td>10</td>
<td>0.6550</td>
</tr>
<tr>
<td>11</td>
<td>0.5158</td>
</tr>
<tr>
<td>12</td>
<td>0.4914</td>
</tr>
<tr>
<td>13</td>
<td>0.3711</td>
</tr>
<tr>
<td>14</td>
<td>0.2946</td>
</tr>
<tr>
<td>15</td>
<td>0.2542</td>
</tr>
</tbody>
</table>

In a scree test a break between two components with relatively large eigenvalues is used as the criteria for selecting the number of components to include in the VARIMAX rotation. A break appeared between components three and four (see Figure 5 on the next page). Retaining the first three components for the VARIMAX rotation also satisfied the interpretability criterion since the survey instrument was developed using the three constructs designated as integration strategy, responsive strategy, and organization structure. Hence,
Figure 5. Scree Plot of Eigenvalues

Initial Factor Method: Principle Components

Scree Plot of Eigenvalues

<table>
<thead>
<tr>
<th>Eigenvalue</th>
<th>Component</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.2</td>
<td>1</td>
</tr>
<tr>
<td>2.0</td>
<td>2</td>
</tr>
<tr>
<td>1.8</td>
<td>3</td>
</tr>
<tr>
<td>1.6</td>
<td>4</td>
</tr>
<tr>
<td>1.4</td>
<td>5</td>
</tr>
<tr>
<td>1.2</td>
<td>6</td>
</tr>
<tr>
<td>1.0</td>
<td>7</td>
</tr>
<tr>
<td>0.8</td>
<td>8</td>
</tr>
<tr>
<td>0.6</td>
<td>9</td>
</tr>
<tr>
<td>0.4</td>
<td>10</td>
</tr>
<tr>
<td>0.2</td>
<td>11</td>
</tr>
<tr>
<td>0.0</td>
<td>12</td>
</tr>
</tbody>
</table>

three components were retained and used in the VARIMAX rotation.
The next step in the data analysis was to request a VARIMAX rotation in PROC FACTOR. A VARIMAX rotation is an orthogonal rotation which results in uncorrelated components (see Table 10 below). Interpreting the

Table 10. Orthogonal Solutions

Rotation Method: VARIMAX

Rotated Factor Pattern

<table>
<thead>
<tr>
<th></th>
<th>FACTOR 1</th>
<th>FACTOR 2</th>
<th>FACTOR 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1</td>
<td>.02</td>
<td>.22</td>
<td>.73 *</td>
</tr>
<tr>
<td>Q2</td>
<td>-.14</td>
<td>-.09</td>
<td>.32 *</td>
</tr>
<tr>
<td>Q3</td>
<td>-.46</td>
<td>-.01</td>
<td>.57 *</td>
</tr>
<tr>
<td>Q4</td>
<td>.28</td>
<td>-.06</td>
<td>.13</td>
</tr>
<tr>
<td>Q5</td>
<td>.24</td>
<td>.09</td>
<td>.76 *</td>
</tr>
<tr>
<td>Q6</td>
<td>-.27</td>
<td>.44 *</td>
<td>-.29</td>
</tr>
<tr>
<td>Q7</td>
<td>-.11</td>
<td>.60 *</td>
<td>-.07</td>
</tr>
<tr>
<td>Q8</td>
<td>.13</td>
<td>.66 *</td>
<td>-.01</td>
</tr>
<tr>
<td>Q9</td>
<td>-.28</td>
<td>.38 *</td>
<td>.31</td>
</tr>
<tr>
<td>Q10</td>
<td>.04</td>
<td>.19</td>
<td>-.46 *</td>
</tr>
<tr>
<td>Q11</td>
<td>-.19</td>
<td>.48 *</td>
<td>-.32</td>
</tr>
<tr>
<td>S1</td>
<td>-.70 *</td>
<td>-.28</td>
<td>.04</td>
</tr>
<tr>
<td>S2</td>
<td>.61 *</td>
<td>-.05</td>
<td>.02</td>
</tr>
<tr>
<td>S3</td>
<td>.67 *</td>
<td>-.12</td>
<td>-.11</td>
</tr>
<tr>
<td>S4</td>
<td>.33 *</td>
<td>.32</td>
<td>.02</td>
</tr>
</tbody>
</table>

Note: Factors greater than absolute value .30 have been flagged by an '*'.

rotated solution includes identifying the variables that have high loadings for a component and then deciding
what these variables have in common. The loading of a variable on a component is usually considered significant if it exceeds an absolute value of .30 (Hair, Anderson, Tatham, and Black 1992).

Methodology Changes after the Pilot Study

The survey instrument was modified after the pilot study. Eleven surveys were returned with missing data. Eight of the 11 respondents had completed all the questions except for the performance questions regarding net income and total assets. Requests for performance data were eliminated from the survey for subsequent mail-outs in order to increase the response rate. Archival data obtained from Moody's 1995 International Manual were used as the dependent variable for the hypotheses testing. Data gathering methods were also revised and included telephone communications, fax reminders and a limited number of e-mail reminders. Subsequent mail-outs and reminders resulted in 124 total usable survey responses for hypothesis testing. This is a response rate of 10.23%.
Descriptive Statistics

Table 11 (see below) lists the means and the sums of the means of all the data \((n = 124)\) collected for the study. Strategy variables include integration strategy \((\text{INTEGRATION})\) and responsive strategy \((\text{RESPONSIVE})\). The means of survey questions six, seven, eight, nine, ten, and eleven comprise the integration strategy variable mean. The means of survey questions one, two, three, four, and five make up the responsive strategy variable mean.

Table 11. Descriptive Statistics of All Data Collected

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTEGRATION</td>
<td>12.5564516</td>
<td>3.2592643</td>
</tr>
<tr>
<td>RESPONSIVE</td>
<td>12.0484871</td>
<td>2.8849338</td>
</tr>
<tr>
<td>PRODUCT STRUCTURE</td>
<td>2.7338710</td>
<td>1.7627993</td>
</tr>
<tr>
<td>AREA STRUCTURE</td>
<td>2.6370968</td>
<td>1.6980844</td>
</tr>
<tr>
<td>MATRIX STRUCTURE</td>
<td>2.6532258</td>
<td>1.6480802</td>
</tr>
<tr>
<td>ROA</td>
<td>0.1410707</td>
<td>0.5428073</td>
</tr>
</tbody>
</table>

\(n = 124\)

The product structure variable is the mean of survey question S1 (global-products division structure). The mean of survey question S3 (global-geographic structure) is the area structure variable mean. Matrix
structure is the mean of survey question S4 (global matrix structure). The independent variable is returns on assets. This ratio is calculated by dividing each multinational organization's net income by total assets. The returns on assets variable was used to divide the data into two groups (higher-performing and lower-performing multinationals). Table 12 (see below) is a list of the higher-performing multinational variable means.

Table 12. Descriptive Statistics of Higher-Performing Respondents

<table>
<thead>
<tr>
<th>Performance type = high performers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variable</td>
</tr>
<tr>
<td>-----------------------</td>
</tr>
<tr>
<td>INTEGRATION</td>
</tr>
<tr>
<td>RESPONSIVE</td>
</tr>
<tr>
<td>PRODUCT STRUCTURE</td>
</tr>
<tr>
<td>AREA STRUCTURE</td>
</tr>
<tr>
<td>MATRIX STRUCTURE</td>
</tr>
<tr>
<td>ROA</td>
</tr>
</tbody>
</table>

\[ n = 65 \]

The lower-performing multinationals variable means appears in the next table (see Table 13 on the next page).
Table 13. Descriptive Statistics of Lower-Performing Respondents

Performance type = low performers

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTEGRATION</td>
<td>12.1016949</td>
<td>3.5510800</td>
</tr>
<tr>
<td>RESPONSIVE</td>
<td>11.7118644</td>
<td>2.8710856</td>
</tr>
<tr>
<td>PRODUCT STRUCTURE</td>
<td>2.7627119</td>
<td>1.8414666</td>
</tr>
<tr>
<td>AREA STRUCTURE</td>
<td>2.7796610</td>
<td>1.7817833</td>
</tr>
<tr>
<td>MATRIX STRUCTURE</td>
<td>2.3559322</td>
<td>1.6375203</td>
</tr>
<tr>
<td>ROA</td>
<td>.0273475</td>
<td>0.0426591</td>
</tr>
</tbody>
</table>

$n = 59$

Table 14 (below) offers a side-by-side list of higher-performing and lower-performing multinationals' means. A visual inspection of the means hints at a

Table 14. Comparison of the Higher-Performing and the Lower-Performing Respondents

<table>
<thead>
<tr>
<th>Variable</th>
<th>Higher-Performing Means</th>
<th>Lower-Performing Means</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTEGRATION</td>
<td>12.9692308</td>
<td>12.1016949</td>
</tr>
<tr>
<td>RESPONSIVE</td>
<td>12.3538462</td>
<td>11.7118644</td>
</tr>
<tr>
<td>PRODUCT STRUCTURE</td>
<td>2.7076923</td>
<td>2.7627119</td>
</tr>
<tr>
<td>AREA STRUCTURE</td>
<td>2.5076923</td>
<td>2.7796610</td>
</tr>
<tr>
<td>MATRIX STRUCTURE</td>
<td>2.9230769</td>
<td>2.3559322</td>
</tr>
<tr>
<td>ROA</td>
<td>0.2442965</td>
<td>0.0273475</td>
</tr>
</tbody>
</table>

$n = 65$ 59
difference in the matrix structure means and some variations between the integration and responsive strategy means. There is also a large difference in the returns on assets ratios. The returns on assets difference is not meaningful because the data was purposefully divided by the experimenter into the two groups (higher-performing and lower-performing multinationals).

Hypotheses Testing

SAS/STAT software was used to test the three hypotheses. Multiple regression analysis was used to test the first and second hypotheses. Correlation analysis was used to test the third hypothesis.

The relationship of interest in the first hypothesis was the interaction of the latent variables; global integration strategy and product divisions structure. The first hypothesis asserted that multinational organizations with integration strategies and product division structures would be positively correlated with returns on assets. Significance was set at the 0.05 level. There was no statistically significant finding that the fit between integration
strategy and product divisions structure predicted returns on assets (see Table 15 below).

Table 15. Hypothesis 1 Test

H1: Global integration strategic and product divisions structural fit is a predictor of returns on assets of U.S.-based, single-business multinational organizations.

Independent Variable: ROA

Analysis of Variance

<table>
<thead>
<tr>
<th>Source</th>
<th>Sum of Squares</th>
<th>Mean Square</th>
<th>F Value</th>
<th>Prob&gt;F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>0.26250</td>
<td>0.26250</td>
<td>0.890</td>
<td>0.3473</td>
</tr>
<tr>
<td>Error</td>
<td>35.97819</td>
<td>0.29490</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

R-square 0.0072

Variable Parameter Estimates

| Variable     | Parameter Estimate | Standard Error | T for Hyp: Parameter=0 | Prob>|T| |
|--------------|--------------------|----------------|------------------------|------|
| Intercept    | 0.2059             | 0.8431         | 0.44                   | 0.0160 |
| Global       | 0.0149             | 0.0664         | 0.05                   | 0.8223 |
| Integration  | -0.0300            | 0.0279         | 1.15                   | 0.2849 |
| Product      | -0.0370            | 0.0392         | -0.94                  | 0.3473 |

N = 124

The second hypothesis pertains to the efforts of multinational organizations to respond to the local
demands of customers, governments, and suppliers. Multinational organizations are expected to have better performance if they pursue responsive strategies and have area division structures.

Table 16 (below) depicts the findings of the second hypothesis test. The interaction term in the data analysis was the fit between the locally responsive strategy latent variable and area divisions independent variable. There was no statistically significant finding that the fit between locally responsive strategy and area divisions structure predicted returns on assets (see Table 16 below).

Table 16. Hypothesis 2 Test

<table>
<thead>
<tr>
<th>Source</th>
<th>Sum of Squares</th>
<th>Mean Square</th>
<th>F Value</th>
<th>Prob&gt;F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>0.16063</td>
<td>0.16063</td>
<td>0.543</td>
<td>0.4625</td>
</tr>
<tr>
<td>Error</td>
<td>36.08005</td>
<td>0.29574</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

R-square 0.0044

H2: Locally responsive strategic and area divisions structural fit is a predictor of returns on assets of U.S.-based, single-business multinational organizations.

Independent Variable: ROA

Analysis of Variance
Table 16 Continued

| Variable   | Parameter Estimate | Standard Error | T for Hyp: Parameter=0 | Prob>|T| |
|------------|--------------------|----------------|-------------------------|-----|
| Intercept  | 0.0927             | 0.0818         | 1.13                    | 0.2599 |
| Locally    | 0.0129             | 0.0583         | 0.08                    | 0.7777 |
| Responsive | 0.0197             | 0.0291         | 0.46                    | 0.4996 |
| Area       | 0.0317             | 0.0430         | 0.74                    | 0.4625 |

N = 124

The third hypothesis dealt with the capability of multinational organizations to respond to complex environments. It was presumed that managers would use integrative and responsive strategies (referred to as a transnational strategy) and matrix structures to handle environmental complexity.

The transnational latent variable included variables that established both the integration latent variable and the responsive latent variable. The transnational strategy is defined as multinational firms that are simultaneously pursuing an integration and a responsive strategy. Some firms are expected to pursue
global responsive strategies, while others will use integration strategies. These firms may not attempt to combine both into a transnational strategy. The possibility of confusing firms with integration or responsive strategies with transnational firms made it impossible to test hypothesis three using all the data sets. A decision rule was needed to separate the transnational strategy firms from the organizations not pursuing a transnational strategy.

A firm was classified as transnational strategy when both the mean of the first five responsive strategy questions on the survey was greater than 15 and the mean of the six integration strategy questions was greater than 18. These firms were classified as having a transnational/matrix configuration when the respondent indicated a matrix structure by selecting three or greater on question four in the structure section of the survey. The decision rule yielded 29 firms with a transnational strategy and a matrix structure. Correlation analysis indicated support for the third hypothesis. Table 17 (next page) represents the test results from of the third hypothesis.
Table 17. Hypothesis 3 Test

H3: Transnational strategic and global matrix structural fit is correlated with returns on assets (ROA) of U.S.-based, single-business multinational organizations.

Correlation Analysis

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Sum</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROA</td>
<td>29</td>
<td>0.2846</td>
<td>1.1011</td>
<td>8.2549</td>
</tr>
<tr>
<td>Matrix Structure</td>
<td>29</td>
<td>4.0345</td>
<td>1.5465</td>
<td>117.0000</td>
</tr>
</tbody>
</table>

| Variable                  | Coefficient | Prob > |R| |
|---------------------------|-------------|--------|---|
| Matrix Structure*         | 0.36821     | 0.0494**|

N = 29

* Firms with both a transnational strategy and a matrix organization structure correlated with ROA.

** Significant at the .05 level.

Summary

The data analysis resulted in statistically significant support for one of the three hypotheses. The first and second hypotheses were rejected because variables that made up strategic and structural fit were not significant predictors of returns on assets of the
data collected. The third hypothesis stated that the transnational strategy variables and the matrix structure variables would be significantly correlated with returns on assets. The results of the correlation analysis revealed a Pearson product moment correlation coefficient of .3682 and a critical value of .0494 and the third hypothesis was supported. The next chapter presents the conclusions and implications of the research.
CHAPTER V

EVALUATION AND CONCLUSIONS

The purpose of this research was to explore the relationship between international strategy and structure and to explore how that alignment influences performance. The study was designed to investigate the research question "Is international integration strategic and departmental structural fit a significant predictor of performance in U.S.-based, single-business organizations?" This chapter begins with a review of the research design and some implications of the findings. Next, the findings, hypotheses, conceptual framework, research methods, and the survey instrument are evaluated. An analysis of the problems and some possible corrections are then addressed. Finally, the possible contributions of the project are discussed and some suggestions for future research are offered.
Review of the Study

The research domain of the study is international integration strategy. International integration strategy addresses a unique managerial challenge offered by environments where business is conducted across differing national borders.

The intended strategies of multinational organization managers include decisions regarding how responsive the firm will be to local markets and how integrated operations might take advantage of worldwide production leverage and home country skills (Ricks, Toyne, and Martinez 1990).

Multinational strategic managers are challenged to establish organization structures that will fit with their integration strategies and competitive environments. An important structuring decision concerns how authority and responsibility will be arranged between the headquarters and the first major divisions of the organization. Area, product, and function are dimensions often used to make these structuring decisions (Mintzberg 1979).
The theory that underlies the research is strategic fit theory. An assumption of fit theory is that an alignment of strategy and structure with an organization's environment will result in better performance.

Data for this research were collected using a survey completed by 124 top-level managers at U.S.-based, single-business, multinational organizations. The firms in the sample were from diverse industries and included both service and product companies. The data were analyzed using release 6.06 of SAS/STAT software.

Table 18. Multiple Regression Analysis of the Model

<table>
<thead>
<tr>
<th>Source</th>
<th>Sum of Squares</th>
<th>Mean Square</th>
<th>F Value</th>
<th>Prob&gt;F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>23.59140</td>
<td>1.47446</td>
<td>3.266</td>
<td>0.0044</td>
</tr>
<tr>
<td>Error</td>
<td>10.83528</td>
<td>0.45147</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

R-square: 0.6853

n = 41
Factor analysis and multiple regression correlation were used to reduce the original variables into a smaller set of variables and to test how well the independent variables predicted the dependent variable. Multiple regression correlation (see Table 18 above) found that the strategy and structure variables could predict 68.53% of the variation in the performance dependent variable and was significant at the .01 level. The factor analysis resulted in the variables loading into the three factors (integration strategy, responsive strategy, and structure).

The three hypotheses were the result of a review of the international integration strategy literature and the international structure literature. The first hypothesis proposed that global integration strategies combined with product divisions structures would be a significant predictor of the returns on assets of multinational organizations (Engelhoff 1988; Lauren 1994). The second hypothesis asserted that locally responsive strategies found with area divisions structures would be a significant predictor of multinational organizational performance (Bartlett and
Ghoshal 1988; Amba-Rao 1993). The third hypothesis proposed that higher-performing multinational organizations with transnational strategies and complex matrix structures would be correlated with performance (Prahalad and Doz 1987, Ghoshal and Nohria 1993). Table 19 summarizes the hypotheses and the results of the statistical tests.

Table 19. Hypotheses and Findings

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Prob&gt;F</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1: Global integration strategic and product divisions structural fit is a significant predictor of returns on assets.</td>
<td>.3473</td>
<td>Not Supported</td>
</tr>
<tr>
<td>H2: Locally responsive strategic and area divisions structural fit is a predictor of returns on assets.</td>
<td>.4626</td>
<td>Not Supported</td>
</tr>
<tr>
<td>H3: Transnational strategic and global matrix structural fit is significantly correlated with returns on assets.</td>
<td>.0494</td>
<td>Supported</td>
</tr>
</tbody>
</table>

The three hypotheses were tested using multiple regression analysis and correlation analysis. The first two hypotheses were not supported by the statistical analysis. The third hypothesis was supported. A
significant correlation was found between the returns on assets and the transnational strategic and matrix structural configuration.

Assessment of the Results

The results of this study may be of interest to both practicing managers in multinational firms and academicians. Most practicing managers and academicians recognize the inference that international business requires complex structures to implement complicated strategies.

Assessment of the Hypotheses

Multinational managers may find it interesting that there was no support found for the singular use of integration strategy and product divisions structure (Hypothesis 1). The integration/products division configuration is advanced by some international business authors as offering multinational organizations advantages in managing rapid product life cycles. In the current environment of shorter product life cycles, the product division structure should allow for faster introduction of products, more opportunities for global
sourcing, and faster product design improvements (Kefalas 1990).

There are two explanations for the lack of support for integration strategy and products division structures as a predictor of performance in U.S. multinational firms. One is that most multinational companies lack experience or knowledge in managing for worldwide leverage (Lascu 1994). The second explanation is the vulnerability of a purely global-integration strategy to fluctuating exchange rates and political volatility (Vittorio 1996). A global-integration strategy does not allow companies to react fast enough to changes in the local markets.

The factor analysis resulted in two variables with the highest loadings on the global-integration dimension ('product and quality' and 'pricing'). 'Product and quality' had a factor loading of .60. Not surprisingly, the 'product and quality' variable implies that integration strategies are meaningful to firms with products that have universal appeal. Firms with products that do not require many adaptations to local tastes and cultures are able to realize the benefits
from worldwide sourcing, production, and marketing. The 'pricing' variable had a factor loading of .66. The 'pricing' variable indicates that in situations where worldwide prices do not vary greatly from nation to nation integration strategies may be valuable. Specialized labor skills or raw materials with inelastic demand determine the product prices rather than local demand. Therefore, strategies tailored to local markets offer less benefits to performance.

Support for the responsive strategy and area divisions structure as a predictor of performance was also not found in the statistical analysis (Hypothesis 2). This is interesting because no support was found for Ohmae's (1990) intriguing "insiderization" product strategy (as a distinct strategy). The insiderization product strategy entails close involvement in local-market distribution channels and marketing by the multinational firm. Since the responsive-strategy variables and area divisions structures did not predict the performance variable, the data analysis implies that U.S.-based firms are not experiencing notable success with insider strategies.
A possible explanation for the lack of support for the local responsiveness and area-divisions structure configuration as a predictor of multinational performance may be partially explained by an interview with C. K. Prahalad in Business Week. Prahalad contends that U.S. firms have benefited from downsizing and reengineering, but have failed to capitalize on international growth opportunities. Moreover, firms need to become quicker by (1) being more responsive to customers, (2) identifying new growth opportunities, and (3) valuing the contributions of employees through creative compensation programs (Verespej 1995).

The variables that had the largest factor loading on the responsive dimension of the factor analysis were 'executive group' and 'market.' The 'executive group' variable had a factor loading of .76. The 'executive group' variable indicates the firm has cultural, educational, and professional diversity. This variable implies that a firm currently pursuing a locally-responsive strategy may have more host country managers in the executive group. The 'market' variable had the next-largest factor loading on the responsive dimension
with a .73 value. The 'market' variable indicates that customer needs are difficult to identify and that trends in the market are unclear.

Support was found for the third hypothesis at the .05 significance level. U.S.-based multinational firms in the sample with transnational strategies and matrix structures were correlated with the returns on assets measure of performance. Support for the third hypothesis indicates that U.S. firms using combinations of integration and responsive strategies and matrix structures are correlated with higher performance. It appears that higher-performing U.S. firms are pursuing complex strategies that involve both elements of integration and responsive strategies. The transnational strategy is likely to be a complicated and ambiguous strategic approach to world markets and production. Fit theory would lead to an expectation of the more complex matrix organization structure aligned with a transnational strategy. The most important contribution of this study was the indication that firms are experiencing benefits from the combination of integration and responsive strategies and that the
benefits appear to outweigh the costs of strategic ambiguity and organizational complexity.

The next sub-section offers an assessment of the research model used in the study. The section following the assessment of the research model discusses problems in the study and possible corrections.

Assessment of the Research Model

The prediction in this study was that a model of the three latent variables (INTEGRATION STRATEGY, RESPONSIVE STRATEGY, AND ORGANIZATION STRUCTURE), which were operationally defined by the 15 independent variables, would be significant predictors of economic performance in multinational firms. The results showed that the model did not provide a completely accurate representation of the complexity of international operations.

Correlations for the 15 variables were very low. This is an indication that the research model did not account for enough of the factors that influence a multinational firm's performance. Moreover, the methods used to measure strategy and organization structure
constructs may need to be more comprehensive to achieve more explanatory power. The next sub-section is a discussion of statistical power.

Assessment of Statistical Power

The null hypotheses for the study were that there would be no differences between the means of the variables being tested. The alternative hypotheses stated that there would be statistically significant differences between the means of the variables being tested. There are four possible outcomes of a statistical test. The categories of outcomes and the decisions are shown in Table 20 (below). When the null hypothesis is rejected (as occurred in hypothesis

<table>
<thead>
<tr>
<th>Outcome Category:</th>
<th>Decision:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reject $H_0$ when $H_0$ is true.</td>
<td>Type-I error</td>
</tr>
<tr>
<td>Accept $H_0$ when $H_0$ is false.</td>
<td>Type-II error</td>
</tr>
<tr>
<td>Reject $H_0$ when $H_0$ is false.</td>
<td>Correct</td>
</tr>
<tr>
<td>Accept $H_0$ when $H_0$ is true.</td>
<td>Correct</td>
</tr>
</tbody>
</table>
three), the alternative hypothesis is accepted (supported). The question can be asked:

If the null hypothesis is true, how often are we likely to reject it?

An alpha error (or Type-I error) occurs if the null hypothesis is rejected when the null hypothesis is actually true (Kraemer and Thiemann 1987). An alpha level of .05 was selected for this investigation. A .05 alpha level means that there is a five percent chance or one chance in twenty of a Type-I error. Statistical analyses usually control for Type-I errors by selecting alpha levels. The null hypothesis is then rejected if the p-value calculated from the data is less than the selected alpha.

Setting alpha for an investigation does not answer the question:

If the null hypothesis is false, how often are we likely to accept it?

The error in accepting a false null hypothesis is called the beta error. Beta errors are Type-II errors. A test procedure with a lower beta has less chances of a Type-
The power of a statistical test is $1 - \beta$ (Kraemer and Thiemann 1987).

The size of the change in the $p$-value that can be detected by a statistical test is the effect size (Hintze 1996). Selecting an appropriate effect size for a test is subjective and is most often based on the results of previous research. Cohen (1988) advanced an effect size convention for chi-square statistical tests. The settings include a small value of 0.1, a medium value at 0.3, and a large value at 0.5.

A power analysis was conducted during the planning of the study to determine the $n$ that would provide a power of .80 in a regression analysis (resulting in $n = 60$). The planning phase power analysis is reported in the Methods chapter (see page 109).

A post hoc multiple regression power analysis was also calculated using PASS 6.0 software. The regression analysis had .9985 statistical power and an effect size of .41363 (see Table 21). The regression analysis has notable statistical power. The next section examines some study problems and suggests some possible corrections.
Table 21. Multiple Regression Power Analysis

<table>
<thead>
<tr>
<th>n</th>
<th>Variables</th>
<th>Alpha</th>
<th>Beta</th>
<th>Power</th>
<th>Effect Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>124</td>
<td>15</td>
<td>.05</td>
<td>.0015</td>
<td>.9985</td>
<td>.41363</td>
</tr>
</tbody>
</table>

Calculations were made using PASS 6.0 software.

Study Problems and Possible Corrections

An examination of the research approach reveals a number of areas that could be modified or changed in future studies. The questionnaire can be strengthened by improving the clarity of the questions asked. The questionnaire was designed to measure the respondents' strategies and structures. The questions were edited for easier reading and to increase clarity.

Question four could be changed by separating it into two questions; one asking about the manufacturing costs and the other inquiring about the availability of raw materials. Some respondents may have easy access to raw materials, but may have other manufacturing costs that are difficult to predict.
Question five may be narrowed down to only ask about the executives cultural backgrounds. The goal of the question was to determine the degree to which executives have shared cultural or national backgrounds. An additional question about education and experiences could be added to increase the accuracy of the construct.

Question nine could be changed to read, 'Various subsidiaries or divisions' rather than only referring to subsidiaries. Also, the wording 'the same multinational customers worldwide' could be modified in future studies to read 'multinational customers worldwide.' 'The same' seems to indicate only one customer. Current wording on the questionnaire implies that firms are only selling to one large customer worldwide.

The global integration question (question 10) titled 'technology' could also be changed to improve the clarity. The dimension of interest was research and development rather than the larger issue of technology. The question could be titled 'research and development' to reduce confusion.
Future studies may look into different explanations of multinational organization structure. Using different constructs for organizational structure may result in more positive research results. International textbooks often use the product, area, and functional dimensions to describe the structure of multinational organizations (Kefalas 1990; Fatehi 1996; Thompson and Strickland 1996). A contribution of this study may be to encourage textbook writers to look into different explanations of multinational organization structure.

A possible alternative to the departmental structure measure was offered by a recent study using the Prahalad and Doz (1987) model of integration and responsiveness (Birkinshaw and Morrison 1995). Structure was measured using the constructs of heterarchy (high autonomy), hierarchy (low autonomy), and horizontal organization. Birkinshaw and Morrison (1995) did not identify an ideal profile, and fit theory was not confirmed. Their study did find support for frequent centralized strategic decision-making in multinational corporations.
Finally, future researchers may consider the inherent bias found in most survey research designs. Social desirability bias is a common problem of studies using a survey instrument. This problem is difficult to correct because ascertaining a firm's multinational strategy or organizational structure requires specific knowledge that is only known to people inside the organization. A possible approach to use in future studies is to survey multiple respondents in each company (Birkinshaw and Morrison 1995). Another approach is to design the study to use as much archival data as possible.

Ideas for Future Research

Several research ideas emerged as a result of this investigation. First, the literature review and the factor analysis extensively indicated that market demands pressure multinational strategies to be more responsive, while production factors push organizations to have more integration strategies. Future investigations could ask the question: “What mechanisms are used by multinational managers to unite the opposing pressures for integration and responsive strategies?”
Some recent studies in the field of corporate finance have proposed connecting corporate finance and strategic management theories in efforts to reinforce and coordinate global strategy (Lauren 1994, Thackray 1995).

Second, investigating technology, especially communication technology, could prove to be a productive research area. Assuming that subsequent research corroborates the finding that multinational firms are developing and using both global-integration strategies and locally-responsive strategies, another research question might read: “Is communication technology accommodating the enactment of transnational strategies and matrix structures in multinational organizations?” The use of new communication technology may be allowing multinational organizations to effectively coordinate complicated strategies and complex organization structures.

Third, combining advanced manufacturing technology with information technology offers interesting future research questions. Advanced manufacturing technology aligned with information technology is posited to offer strategic flexibility and faster responsiveness to
customer demands (Goldhar and Lei 1995). Using computer technology (referred to as mass customization) to custom design customer orders can result in a highly flexible, low cost production system (Goldhar and Lei 1995).

Fourth, research on innovative organization structures is also intriguing. Miles and Snow (1995) offer the network form of organization, called the spherical firm, as an organization structure that can adjust to change quickly and offer customers a market-driven organization. An investigation of the use of network structures in multinational organizations would be of great benefit to the international integration strategy body of knowledge.

Finally, innovative ways of conceptualizing the structures of multinational organizations may offer the most interesting future research ideas. Fukuyama (1995) has proposed trust as the factor that holds organizations together and links them most effectively with customers and suppliers. This idea is similar to the Japanese concept of keiretsu. Examining levels of trust between organization members and management and
the business environment could be another interesting method for measuring the structure of an organization.

**Implications and Conclusions**

The practical benefits and contributions of this study cover two areas. First, the research supports the view that some multinational firms are successfully using complex matrix structures to implement their transnational strategies. Second, multinational firms with distinct integration strategies or responsive strategies do not seem to be performing better than firms with other strategies and structures.

Some of this research has practical applications to international business and business unit managers. Managers may want to consider using broader transnational strategies to address their international markets and operations. Benefits may be expected from increasing responsiveness to local markets and customers, while simultaneously seeking opportunities to acquire resources, financing, labor, component parts, and services from a larger network of worldwide associates.
The pursuit of a better understanding of multinational strategy and structure continues to be of great interest and somewhat elusive for researchers interested in globalization. A survey of the American Management Association discovered that 78% of the respondents cited globalization as the most important business issue. Moreover, it is estimated that seven billion words have already been written on globalization (Global distinction 1996). It would seem that while so much work has been done to investigate and explain the globalization of business, it remains a research area of great concern.

This dissertation has contributed a small piece of the ongoing inquiry into international-integration strategy research. This endeavor will hopefully point the way to some future ideas for research in the area of globalization. The discovery of the means that successful multinational firms are using to implement their strategies and structures should continue to spur researchers on to new research proposals.
APPENDIX A

QUESTIONNAIRE
This survey is designed to help the business community and academics understand the relationship between strategies and structures within businesses that compete internationally. Please answer all of the questions.

**LOCAL RESPONSIVENESS**

Businesses in the same industry often use different methods to compete. The methods chosen usually reflect particular strengths of the business, specific demands of particular target markets, and the selected strategy of the firm. Below are a series of dichotomous statements describing explicit business environments and competitive methods. Please compare these statements with your business environment and strategy, and circle the number (1 through 5) that best describes your situation.

<table>
<thead>
<tr>
<th>Market Homogeneous. Customer segments are clearly identified. The customers' decision processes and perceptions of product value are clear. Market trends are clear.</th>
<th>Market Heterogeneous. Customers and customer needs are not identified. Customer motivations tend to be complex. The perceived value of the product is unclear. Market trends are not easily foreseen.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Competitive Situations Competition is easily identified. There are few competitors, and their strategies can be identified and interpreted.</th>
<th>Competitive Situations Competition is diffuse, with a large number of competitors. Competitors' strategies are unclear. There are no typical characteristics of firms in the industry.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Technology Technology is relatively stable and products are relatively mature. Improvements in production technology and cost minimization are seen as important.</th>
<th>Technology Technology is evolving. There are a variety of unknowns in process/product specifications and cost structure. Rates of change in products and production processes are both rapid and unpredictable.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Economics of Manufacture Size of plant and capacity utilization are the key determinants of manufacturing (or service creation) costs. Location advantages exist. Availability of raw materials is an important consideration.</th>
<th>Economics of Manufacture The key determinant in manufacturing (or service creation) cost is unclear. Costs are not affected by size or location of plant. Raw materials are easily available.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
</tr>
</tbody>
</table>
**Executive Group**

Executives share substantial cultural, educational, and professional experience.

---

**Executive Group**

Executives do not have shared cultural, educational, or professional experiences.

---

**GLOBAL INTEGRATION**

Please circle the number that best describes your business environment and strategy.

**Capacity**

Capacity and process decisions are made on a project-by-project basis with a view to serving specific geographic markets.

---

Capacity and manufacturing technology decisions are made to provide multi-plant linkages and multi-plant sourcing potential.

---

**Product and Quality**

Product and quality specifications are developed to serve specific geographical markets.

---

Product and quality specifications are coordinated to serve multiple geographically defined markets.

---

**Pricing**

The needs of the local market determine pricing, market segmentation, capacity allocations, and other market-related decisions.

---

World-wide business interests determine pricing, market segmentation, capacity allocation, and other market-related decisions.

---

**Target Markets**

Various subsidiaries do not serve world-wide customers.

---

Subsidiaries sell most of their output to the same multi-national customers worldwide.

---

**Technology**

Development effort is carried out in multiple locations, each location specializing in a specific technology and/or a product line.

---

Development effort is carried out in a single central location, and the results are passed on to all the locations needing the technology.
Local subsidiaries are basically independent of each other in terms of product or service production.

There are substantial movements of services and semi-finished/finished products between subsidiaries. Problems in one plant (e.g., quality or strike) can affect other plants and markets adversely.

**STRUCTURE**

Many different structural forms are used by businesses, each has its own strengths. We are especially interested in how you manage your international operations and in the reporting chain of command for managers located in the U.S. and in other countries outside the U.S.

1) In a Global Products Division Structure each product line is headed by its own general manager, and each division is responsible for its own production and sales.
2) An International Division organization structure is organized along either functional, product, or geographic lines. An international division allows specialized people to build markets in specific foreign locations.

3) A Global Geographic Structure includes divisions that cover geographic areas. Each regional manager is responsible for the operations and performance within a given region.
4) A Global Matrix Structure is based on two or three organizing dimensions - products, functions, and geographic regions. Decisions and communications flow horizontally and vertically across those dimensions. Middle managers have dual chains of command reporting responsibilities.

5) Is there anything else you would like to tell us about the trends in your industry or the structure of your organization? Please use the space below and the back of the page for that purpose.

Your contribution is very much appreciated. If you would like a summary of results, please print your name and address on the back of the return envelope. We will see that you receive a summary.
APPENDIX B

EXPERT PANEL QUESTIONNAIRE
Dear Mr. Heckle:

Attached is a three page expert panel comment sheet and a four page survey titled "International Business Strategy and Structure Survey." The intended respondent to the survey are managers in international businesses who are involved in developing and implementing the strategic direction of their company.

Please critique the survey. If anything in the survey is unclear, please mark it by circling or a question mark or any other way you wish. You may write comments on the comment sheet or on the survey itself.

Thank you for taking time from your busy schedule to serve on this dissertation survey expert panel. Your experience and knowledge is an important contribution to the study's survey development.

When you are finished reviewing the survey or if you have any questions, please call me at 643-8704 at HPU or 643-1390.

Sincerely,

Rod Blackwell
Expert Panel Comment Sheet

Please use this comment sheet if it helps you. Any comments you make directly on the survey are especially helpful.

Name: Please put your name, title, and your area of academic specialization in the space below.

Survey Instructions: Simple to understand instructions are very important for mail-out surveys. Are the survey instructions easy to follow? Please comment.

Readability: Please circle any questions on the survey that are difficult to read or lack clarity. It would also be helpful if you could put a word in the circle that would explain your criticism. For Example:

JARGON There is too much specialized business academic jargon.

PERTINENT This question is not pertinent to my business.

WORDING The wording of this question is too complicated.

VAGUE The meaning of the question is vague.

UNDERSTANDING The question is difficult to understand.
General Comments: Could you provide any general comments about the readability of the survey?

Rating Scales: Consider the first two pages of the survey instrument. Are the rating scales provided adequate for you to answer the question?

Do you think respondents will be comfortable choosing between the dichotomous descriptions and selecting a number on the rating scale?

Please look at the organization structures offered on the last page. Are the structures adequate for managers to describe the basic design of most organizations? Do you have any suggestions for a better way to capture organization structure?
Response Rate:
Do you believe managers will consider answering this mail survey? Do you have any suggestions for possibly improving the response rate?

Does the survey ask any questions that you believe some managers would be unwilling to answer because of personal ethics, proprietary informational reasons, or any other reasons? Please comment.

Any Other Comments:


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