CHAPTER 4
FIT AS MODERATION AND MATCHING: A TEST OF STRATEGY AND STRUCTURE CONGRUENCE IN RELATIONSHIP TO PERFORMANCE

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ABSTRACT

Many researchers and executives have viewed fit as a key to organizational survival and high performance (Summer et al., 1990). However, the type of fit and how it can be best achieved may often be in question (Venkatraman, 1989). The current study empirically examines both external and internal fit as predictors of firm performance where: (1) external fit is the alignment of, or congruence between, the organization’s strategy and/or structure and the task environment, and (2) internal fit is the multidimensional matching of strategy with structure. The argument presented here is that both internal and external fit can, and do, occur simultaneously. Further, the presence of one type of fit may compensate for deficiencies in the other. Using fit in terms of both matching and moderation, hypotheses are tested to determine the nature of both internal and external fit of strategy and structure. Testing of the hypotheses is conducted using data from the medical group industry.
Findings support the influence of individual strategy and structure variables on medical group performance. However, fit found between strategy and structure, be it as matching or moderation, shows little influence on performance. Implications for medical groups and the broader health care industry are discussed.

INTRODUCTION

The concept of alignment or fit has been an underlying issue in strategic management and organization theories for some time (e.g., Amburgey & Dacin, 1994; Drazin & Van de Ven, 1985; Miles & Snow, 1978, 1994; Thompson, 1967; Venkataraman, 1989). Fit has been conceptualized as moderation, mediation, matching, covariation, profile deviation, and gestalts, but problems have arisen in the strategic management literature due to discrepancies between the fit concept and the corresponding hypotheses and methods (Venkataraman, 1989). Typically, the term fit refers to the ability to maintain strong connections between organizational strategy, structure and process (Miles & Snow, 1994). However, in the strategic management literature, the term itself has been used to refer to the fit of strategy to resources and capabilities, the fit of strategy with structure, the fit of strategy or structure to environment, and/or the fit of the firm to corporate strategy or structure (e.g., Venkataraman & Prescott, 1990). Although many researchers and executives view fit as a key to organizational survival (Summer et al., 1990), the type of fit and how it can best be achieved may often be in question (Venkataraman, 1989).

Miles and Snow (1994) dichotomized fit into external fit and internal fit. External fit is the congruence between the firm (strategy and/or structure) and its task environment, while internal fit is the multidimensional interaction of organization structure, management systems, and managerial ideology in a thematic pattern. These two broad classifications of fit draw upon separate and distinct strategic perspectives. Although some work has crossed over these fit boundaries (e.g., Black & Boul, 1994), the testing of external or internal fit has typically come separately. However, it seems that both external and internal fit can occur simultaneously and that the presence of one may make up for deficiencies in the other. Thus, the primary purpose of this article is to determine if considering these different forms of fit simultaneously would alter perceptions of the importance of fit, or the lack thereof.

To accomplish this purpose, this article tests multiple forms of strategy and structure fit within the health care context to determine the level of impact these different forms of fit have on medical group performance. As such, the following questions are to be addressed: (1) to what extent are the relationships between strategy and structure variables and firm performance present in the health care industry and, more specifically, important to medical groups? And, (2) what, if any, is the influence of fit on medical group performance? These questions are addressed by first examining the independent influences that key strategy (i.e., Level of Differentiation and Target Scope) and structure variables (i.e., Expansiveness and Interorganizational Linkages) have on medical group performance. Given the health care industry's uncertain environment, determining and understanding what characteristics are important to the success of medical groups is a critical issue. Then, the moderating influence of structure variables on the strategy-performance relationship is examined, followed by an analysis of the influence of a match between strategy and structure variables on medical group performance. Here, financial performance is the outcome of interest. Return on Sales (ROS), return on equity (ROE), return on assets (ROA), and a profitability measure are all considered in order to provide more appropriate conclusions. In this way it can be determined if, in medical groups, direct contingencies tend to influence financial performance more or less than the fit between strategies and structures.

The primary contribution this study makes to existing health care literature is the use of multiple measures of fit to determine how medical groups might best align strategies and structures to optimize performance. To date, the medical group industry has received very little attention, particularly regarding the relationship between firm-level issues and financial outcomes. The results of this study demonstrate the extensive influence the external environment has on dictating the strategies and structures that yield higher levels of financial returns in medical groups. It seems that fit between strategy and structure within the firm is largely inconsequential to the medical group's relative performance. These findings support the idea that managerial discretion (Hambrick & Finkelstein, 1987) is extremely limited and that the environment has restricted levels of functional equivalence (Gresov & Drazin, 1997). Thus, choices about organization design are constrained in such a way that conditions for equifinality are not met and there is a severely limited way of organizing (Veliyath & Srinivasan, 1995). The implications of these findings are further explored in the discussion section.
THEORY AND HYPOTHESES DEVELOPMENT

Fit is discussed and tested in this article in two ways: (1) as the external fit of strategy and structure to the task environment given as moderation, and (2) as the match between strategy and structure internal to the medical group. External fit follows a contingency outlook of markets and industries. The strategy literature generally discusses fit between a firm's strategy and the environment in which it operates (e.g., Lawless & Finch, 1989; Lukas, Tan, & Hult, 2001), while organizational theory literature considers organizational form and fit (e.g., Burns & Stalker, 1961). Strategy-environment fit and structure-environment fit have shown to have individual effects on performance, with the presence of both being optimal. Thus, from a contingency theory approach, it is argued that the impact of strategy on performance varies across different levels or types of structure in a given environment.

Internal fit, conversely, involves organizational structure, systems, people, and culture, which can be important determinants of organizational success given their appropriate recognition, use, and sustainability (Barney, 1991). These components of an organization should fit with the strategy if high competitive advantage is to be achieved. The basic premise is that structural components of an organization must fit with strategic components and the tighter the fit, the greater the synergy and subsequent performance. From this standpoint, fit is a relationship between two or more independent variables of strategy and/or structure.

Although the primary concern in this study is the nature of fit between strategy and structure, the first consideration must be given to the independent strategy and structure variables. This is achieved through the utilization of two principle dimensions for strategy and structure: (1) realized strategy, which follows Porter (1980, 1985) and Mintzberg (1979), and includes level of differentiation and competitive scope, and (2) structural complexity (Hill, 1999), which is operationalized as both physical complexity, labeled expansiveness, and network involvement through interorganizational relationships (IORS). Each dimension is discussed below leading to an overarching model. This model is then applied to specific strategy and structure characteristics of medical groups following previous strategic management studies in the health care context (Blair & Bussele, 1998; Ketchen, Thomas, & Snow, 1993).

Realized Strategy

Strategy, as a concept, is essentially defined as determining how an organization relates to its environment and how it pursues its objectives (Bourgeois III, 1980). Since the strategy itself is recognizable only by analyzing the actions already taken in regards to resource allocation and the emphasis placed on particular areas, the focus here is on the realized strategy (Mintzberg, 1979). Thus, the content of strategy – as the what that has already been decided – is key, be it decisions about advertising, product or service scope, or efficiency emphasis (Fahey & Christensen, 1986). Content is the output of strategy processes and primarily represents the intentions and actions that an organization has already taken. Porter’s (1980, 1985) generic strategies are key to this dimension and lead to the recognition of two components of realized strategy: (1) the level of differentiation and (2) the target scope of the firm.

Level of Differentiation

Competitive advantage is defined as the ability to outperform rivals by obtaining higher rates of profit (Grant, 1995). A firm can achieve competitive advantage in one of two ways – it can supply similar products or services at a lower cost than rivals or it can supply differentiated products or services for which customers are willing to pay a premium. The first advantage is referred to as a cost advantage, while the second is a differentiation advantage (Porter, 1985). Porter (1985) originally considered these two strategies mutually exclusive; those firms attempting to pursue both are considered “stuck in the middle” and typically should experience relatively sub-optimal returns. However, arguments have emerged that this is not an either-or situation but rather some reconciliation between differentiation and low cost must be found (Dess & Davis, 1984; Hambrick, 1983). In fact, differentiation and low cost can be complementary in many cases and often lead to high levels of performance (Hill, 1988).

It seems that rather than being an either-or situation, the differentiation and low cost dimensions may be considered a continuum. On one end, the organization focuses its time, effort and resources on differentiation, while on the other end, cost efficiencies are the focus. Because time, effort, and resources are limited, allocation of each to an organization’s central strategic business focus would be limited to that continuum. To simplify, this continuum is referred to here as level of differentiation, where low levels typically refer to more cost leadership emphasis and high levels are representative of organizations more devoted to maintaining (almost exclusively) a differentiation strategy. At multiple points in-between are those organizations attempting some elements of both, either successfully or not.
Target Scope
Apart from the differentiation-cost leadership decision, the other key strategic decision facing all firms is competitive scope (Porter, 1985). Competitive or target scope is essentially the extent to which an organization chooses to compete within a given industry. In Porter's (1985, p. 232) words, it is “what segments of an industry a firm should serve and how it should serve them.” Focus strategies make a choice to serve one selected segment of an industry, while broad-targeted organizations service the entire industry, or at least a larger portion. Serving several or only one segment does not create competitive advantage in and of itself unless the industry dictates that certain segments are more profitable than others; competitive advantage must typically be gained through the continuum of differentiation within a specific segment. The sustainability of a focus strategy will wear away if the differences that are initially present fail over time. Likewise, if the ability to maintain differences by a broad focused firm in those same segments disappears with time the same failure will ensue. These industry segments and the target breadth choice must be continually monitored in an attempt to ensure sustained competitive advantage. However, this task is much less arduous for focused strategies.

Organizational Structural Complexity
Since the structure of an organization has historically revolved around multiple issues, including bureaucracy, size, centralization, and technology, a term was chosen that tends to sum up the structural differences among organizations — it is complexity. The complexity of an organization encompasses labor division, hierarchical levels, processes, and communication patterns and has been acknowledged as having a significant influence on the understanding of structural conditions, internal processes, and external relationships of organizations (Aldrich, 1999; Hall, 1999). Complexity encompasses many subparts of an organization and therefore requires examination of several components simultaneously. However, despite the multidimensionality and difficulty with organizational complexity as a concept, it does convey a simple image as it pertains to coordination, cooperation and control. In other words, as the complexity of an organization increases, the ability to coordinate, influence cooperation, and/or maintain control of independent organizational components becomes increasingly difficult.

Expansiveness
Organizational complexity has been typically viewed in terms of expansiveness. Expansiveness is defined here as the size and scale of the organization in terms of employees, buildings, types of organizations, and geographic locations. It basically represents the level of tangible resources available to the focal organization or its personnel and physical capacity. This concept differs from the typical conceptualization of size in that it not only includes size according to the number of persons within the organization or the market share of the firm, but also other aspects like physical space, availability of discretionary resources, and input and output factors (Kimberly, 1976). Size, in many forms, has been a long-term element of study in organizations (e.g., Hofer, 1975; Kimberly, 1976) and has been largely used as a proxy for complexity, formalization, or centralization (Hall, 1999).

Advantages of having both large and small size have been shown. Large size allows for economies of scale, increased brand recognition, and market power (Hambrick, MacMillan, & Day, 1982), while small size is typically seen as being equated with greater flexible, increased speed, and a higher risk-taking propensity (Chen & Hambrick, 1995; Fiegenbaum & Karnani, 1991; Hitt, Hoskisson, & Harrison, 1991). The success of a firm therefore lies not in the size of the firm but in how and where the organization competes. In other words, different strategies are required for less expansive organizations to compete with more expansive organizations, given a particular industry (Woo & Cooper, 1981).

Interorganizational Linkages
Although structural complexity has historically been studied in terms of actual physical structures and processes, the modern age has ushered in a new era where virtual structures can be just as important and complex as physical structures. While the level of expansiveness is primarily concerned with the physical and quantifiable, IORs are more focused on the organizational structure that extends beyond the focal organizations.

Two primary factors impact whether or not an IOR arrangement is going to be a success or failure. First, the type of relationship must be considered; different forms of IORs exist and make a distinct difference on how goals are achieved. The second factor is the number of relationships the organization is involved in. It takes much more time and resources to manage multiple relationships than just one or two. Further, as the number increases, the likelihood that some of the focal organization's stakeholders will have conflicting interests also increases. This argument assumes that organizations make decisions based partially on which IORs to become
involved with and that relationships are developed at multiple levels differing in both the degree of relationship sophistication (i.e., relationship type) and the number of organizations involved (Oliver, 1991). This structural element is termed “level of linkages” and primarily refers to the number and/or tightness of IORs in which the focal organization is involved.

There are numerous types of integrative IORs that follow both tight and loose coupling including formal contracts, alliances, joint ventures, acquisitions, and mergers. The degree to which organizations are involved with these many types of IORs demonstrates the overall “virtual” structure of the organization. Multiple examples of strategic action being taken through IORs can be seen throughout the business world (see Barringer & Harrison, 2000, for a comprehensive overview).

**External Fit and Hypotheses**

The above paragraphs exhibited two primary dimensions along which organizations can be placed—realized strategy and structural complexity. Each of these represents key issues in strategic decision-making, which must be properly aligned with the firm's external environment to maximize chances for success. In this section, hypotheses are developed anticipating the relationship each construct will independently have on medical group performance, given the health care environment. These are extremely important because the relationship between independent strategy and structure dimensions must be addressed in order to understand results obtained from analyzing the fit relationships. These contingency hypotheses are given under the assumption of a highly uncertain and turbulent health care environment and represent their own form of contingency fit. The assumption of uncertainty is based on an extensive amount of research establishing the long-term uncertainty and high rate of change in the health care industry (e.g., Goes & Park, 1997; Shortell, Gillies, Anderson, Erickson, & Mitchell, 1996). More specifically, the medical group industry is characterized by constant technological changes, strong influences from political realms, and a high interest level from the general public (e.g., Blair & Bueseler, 1998; Blair & Fottler, 1998). So, rather than having multiple representative industries (e.g., Miller, 1988), the focus here is on the industry uncertainty assumption described as dynamism and unpredictability (Bourgeois, 1980; Dess & Beard, 1984).

The first series of hypotheses draws from the previous discussion of strategy according to Porter's (1985) model and builds on extensive studies examining strategy's fit with a firm's environment as the key to high performance (e.g., Dess & Davis, 1984; Hambrick, 1983; Miller, 1988). Following these studies, the strategy's relationship to environment can contribute to the understanding of different environmental circumstances. For instance, a strategy largely focused on differentiation aspects of competition is typically more successful in dynamic and uncertain environments (Miller, 1988; Porter, 1980). In a related fashion, service industries often exhibit higher profitability in more narrowly focused industry segments (Davidow & Utter, 1989). It is the alignment aspect of strategy and environment that is often a key influential factor in determining performance and has proved to be quite influential to financial returns. Thus, traditional contingency theory suggests that environments influence strategy and that certain environments are more conducive to some strategies than others (Burns & Stalker, 1961; Dess & Beard, 1984; Miller & Friesen, 1984). Similarly, it is argued that the industry influences strategy success (Porter, 1980) but with some degree of latitude (Hrebiniak & Joyce, 1985). Each of these streams of the strategic management literature argues, “matching of strategy and environment can influence performance” (Miller, 1988, p. 282).

The second series of hypotheses in this section are primarily based on organizational theory research and build on extensive work examining the relationship between structure and the conditions of the environment (e.g., Burns & Stalker, 1961; Thompson, 1967). Differences in organizational complexity caused by pressures to secure resources and legitimacy may make some organizations function better in certain environments than others.

**Differentiation–Performance Hypothesis**

Level of differentiation, as discussed previously, is a continuum representing differentiation and low cost dimensions. On one end, the organization focuses its time, effort and resources on creating uniqueness and distinctiveness; on the other end, cost efficiencies are the focus. Key strategies of cost leadership include scale efficiencies, manufacturing or service simplicity, cost control of overhead, and R&D. Central to these elements are skills and resources that support them directly, including high engineering skills, tight cost controls, highly structured organizations, focused job responsibilities, and quantitative orientations. Key strategies of differentiation are centered on the uniqueness of a product or service. Elements of creativity, strong reputation, and solid advertising and marketing capabilities support this uniqueness. Thus, differentiation extends beyond the physical characteristics of the product or service to include identity, style, and values; even simple...
services or plain products can achieve a level of differentiation based on these perceptual or conceptual differences.

Differentiation is costly. However, the premiums obtained from a successful differentiation strategy often tend to offset the costs, thus leading to larger returns and increased profitability given the investment (Porter, 1985). In an uncertain environment, where change is common, differentiation typically can withstand longer periods of high profitability because it protects itself from competitors through that differentiation. Typically, cost leadership or efficiency-oriented organizations are better in industries based on standardized products or services. Further, since in increasingly turbulent environments strategy is less predetermined, those organizations focusing more on creativity, identity, and uniqueness are less likely to be programmatic or static in their strategic thinking and actions. Thus, considering medical groups and the nature of the health care industry, the first hypothesis states:

Hypothesis 1. Higher levels of differentiation will be positively related to medical group financial performance.

Target Scope–Performance Hypothesis

The target scope choice is dependent on the differences that exist among the segments of an industry. The increases in bureaucracy, network relationship, and inflexibility costs that come with a broad target approach often make serving multiple segments very difficult. The focused firm can more easily achieve sustained differentiation in its segment(s) as compared to the broad-targeted firm that must compromise at many levels (Porter, 1985). Additionally, organizations that are following focus strategies are likely to be more profitable in relative terms of dollar value per production unit organizations, although a broadly focused firm will gain and sustain larger market shares. As a result, relative to assets, equity, or production unit, focused firms are likely to come out on top, although their total values may not be as large (as with very large organizations serving a large market share). This relationship is more likely in service firms as compared to manufacturing firms because services are typically performed at a regional or local level. Expansion of services into alternative segments may create difficulties in sustaining the flexibility and streamlined operations necessary for success in the original segment.

Mixed results have emerged from studies in this area (e.g., Powers & Hahn, 2004). Generally, however, strategic management researchers believe that focus strategies in service firms are likely to lead to superior performance (e.g., Davidow & Uttal, 1989). Focus facilitates service operations through concentration of firm efforts, investments and controls. Further, focus can streamline operations, thus improving productivity and quality. More specifically, focused firms directly benefit from understanding and intensively serving only one or a very few customer segments (Nayyar, 1992). Thus, the following hypothesis is given:

Hypothesis 2. Broader target scope strategies will be inversely related to medical group financial performance.

Expansiveness–Performance Hypothesis

Higher levels of market share (i.e., larger firms) have shown to be related to greater levels of profitability (Chen & Hambrick, 1995). Often, explanations for such a relationship revolve around the idea that smaller firms often have legitimacy problems creating the need to more explicitly utilize resources to demonstrate value to consumers and worthiness to stakeholders. However, uncertain environments can create difficulties for firms that are inflexible or unresponsive. Expansiveness, often expressed as size, can often promote such inflexibility through developing complacency, inertia, insularity, and resistance to adaptation (Hall, 1999). Such views would suggest that low-share (i.e., smaller) organizations may be more successful in uncertain environments given their use of creative segmentation, targeted R&D, or focused pricing or quality (Hamermesh, Anderson, & Harris, 1978; Woo & Cooper, 1981). These arguments seem to suggest that in uncertain environments, less expansive organizations operating with greater flexibility and ability to change and alter pathways will likely enjoy greater returns. Thus,

Hypothesis 3. Greater expansiveness will be inversely related to medical group financial performance.

Linkages–Performance Hypothesis

Linkages with other organizations can, in many cases, lead to economies of scale, security of resources or power, or other key success factors that lead to competitive advantage (Oliver, 1991). These types of structures are often used in organizations when environmental uncertainty is present, with the intention of making the process of acquiring resources more predictable (Stearns, Hoffman, & Heide, 1987; Thompson, 1967). Past research has supported a positive relationship between this type of structure and firm performance (Stearns et al., 1987). However, limitations in administrative time and resources can often develop into overextension. Time and resources can often be lost at a greater level than that which was initially
obtained because of the extreme efforts spent on relationships. Extreme care must be taken when entering into any relationship; more relationships are not necessarily better and some relationships require more effort than others.

Apart from the limitations in time and resources, however, disadvantages of IORs in terms of the organizations themselves also exist. Practicing managers and researchers alike often overlook these disadvantages, which include loss of proprietary information, management complexities, increased financial and organizational risks, partner dependency risks, loss of decision autonomy, organizational culture clashes, loss of flexibility, and antitrust implications (Barringer & Harrison, 2000). Each creates difficulties that are often hard to rectify in a short period of time, especially in an environment that is not supportive of stagnant, inflexible organizations. The next hypothesis therefore reads:

**Hypothesis 4.** A greater extent of linkages will be inversely related to medical group financial performance.

**Moderation Fit Hypotheses**

While previous studies have extensively examined the influence of each of the above dimensions on firm performance independently, testing for fit has been less common. One key exception is the Habib and Victor (1991) article, which examined the fit of organizational strategy and structure on the performance of manufacturing and service firms. This study confirmed an inter-relationship between strategy and structure, supporting the idea that the structure of an organization is influential in the success or failure of strategic implementation (Grinyer & Yasai-Ardekani, 1980; Rumelt, 1974).

Moderation is present among strategy and structure when one predictor variable’s (i.e., strategy) impact on a criterion variable (i.e., performance) is dependent on a third variable (i.e., structure). This third variable is termed the moderator and the relationship that exists between the two independent variables (strategy as the predictor and structure as the moderator) will together determine the level of performance for an organization (Venkatraman, 1989). The moderation fit hypotheses are therefore representative of relationships between multiple constructs of strategy and structure. The relationship between these constructs has been studied extensively in past research (e.g., Mintzberg, 1990). While the relationship between these two variables is reciprocal (Amburagey & Daicin, 1994), the influence of strategy on structure is much stronger than the opposite. Considering this reciprocal relationship, the underlying argument is that there is an interaction effect among the strategy and structure constructs, which impacts performance of organizations operating within an uncertain environment. Following the previous hypotheses, the moderation fit hypotheses read,

**Hypothesis 5.** Expansiveness moderates the relationship between Target Scope (Fit 1a) and the level of medical group financial performance such that the greater the expansiveness, the stronger the negative relationship between Target Scope and performance.

**Hypothesis 6.** Level of Linkage moderates the relationship between Differentiation (Fit 2a) and the level of medical group financial performance such that the greater the level of linkages the weaker the positive relationship between Differentiation and performance.

**Hypothesis 7.** Level of Linkage moderates the relationship between Target Scope (Fit 3a) and the level of medical group financial performance such that the greater the level of linkages, the stronger the negative relationship between Target Scope and performance.

**Hypothesis 8.** Expansiveness moderates the relationship between Differentiation (Fit 4a) and the level of medical group financial performance such that the greater the expansiveness, the weaker the positive relationship between Differentiation and performance.

**Internal Fit and Hypotheses**

Also using the arguments developed in the previous sections, some strategy characteristics are more likely to be associated with some structure characteristics than others. For instance, Chen and Hambrick (1995) demonstrate how small firms differ from large firms in organizational competitive behavior. In their study of the airline industry, smaller firms tended to move faster and with more secrecy in response to competition. This supports the contention that (1) organizational size and competitive behavior are closely linked, and (2) different strategies are necessary for small and large firms, given a select context, in order to be successful. Thus, these two dimensions, when placed together, should demonstrate some degree of predictability. Firms with lower levels of expansiveness and fewer IORs are likely to follow more focused and differentiated strategies. Alternatively, more expansive firms with a greater number of linkages will likely attempt to achieve economies of scale, thus in line with a cost leadership strategy and a broad target focus.

Given these basic arguments, Fig. 1 is given as a summary of the expected internal fits between the dimensions of strategy and structure. This figure
shows the two components or constructs that make up the structural complexity dimension along the vertical axis. The realized strategy constructs are found along the horizontal axis thus creating four separate two-by-two models. These four models represent each combination of strategy and structure. Note that matching fit is not actually an interaction between each of these constructs (as is the moderation) but rather the difference, or space, between the two.

Following previous arguments and Fig. 1, performance is expected to differ according to how closely matched the two independent components are with one another—in any of the four situations. Fit 1b is expected to be congruent with high to low levels of expansiveness and target scope. So, Fit 1b would be high in an extremely large, multidivisional organization that follows a broad scope strategy. It would also be high in a much less expansive organization that follows a more focused strategy. This relationship is largely intuitive given that organizations following broad scope strategies tend to serve more customers and therefore need more support for the more extensive needs.

Fit 2b differs in that the expectation of fit is on the off-diagonal. Therefore as differentiation increases, higher fit will actually occur as the level of linkages decreases. The rationale for this is that differentiation is an effort to establish uniqueness rather than economies of scale. Therefore, since many linkages are built on the premise of improving efficiency or developing synergy in the supply chain, having more linkages will be counterproductive to the differentiation mission. Fit 3b is seen on the main diagonal where high fit occurs when matching levels of linkages and scope occur. High linkage levels are expected to match with broad target scope. Broad scope requires more extensive support in order to meet the requirements of a more diverse consumer group. Having more relationships with external organizations would likely better provide the organization with a broader base to more effectively support a more extensive strategy. Of course high fit would also exist in firms that have a very narrow focus and have very few, loose relationships. Fit 4b, as with Fit 2b, is high if expansiveness is high while differentiation is low, and vice versa. The rationale follows previous arguments regarding the nature of differentiation, and the proper structure to support that type of strategy (Miles & Snow, 1994; Porter, 1985). The themes that occur in reality seem to suggest that differentiation-based organizations are often more entrepreneurial, more creative and more innovative. Further, more organic and flexible forms largely support these types of organizations. Greater expansiveness is, of course, more likely to produce higher bureaucracy, greater formalization and a less creative culture. The matching fit hypotheses are therefore representative of internal distance relationships and read:

Hypothesis 9. The greater the matching fit between Target Scope and Expansiveness (Fit 1b), the higher the level of medical group financial performance.

Hypothesis 10. The greater the matching fit between Level of Differentiation and Level of Linkage (Fit 2b), the higher the level of medical group financial performance.

Hypothesis 11. The greater the matching fit between Target Scope and Level of Linkage (Fit 3b), the higher the level of medical group financial performance.

Hypothesis 12. The greater the matching fit between Level of Differentiation and Expansiveness (Fit 4b), the higher the level of medical group financial performance.

### Research Methodology

**Sample and Data**

This particular cross-sectional data set was selected primarily because it had the necessary variables and power to properly test the various fit hypotheses.
But because of multiple changes in survey questions and respondents over the years, these data did not support a large-sample, longitudinal study. However, given the difficulty of changing strategy and structure elements (Miller, 1996), a cross-sectional look at a large number of organizations should lead to a powerful and informative study. Additionally, a single industry allows for direct control of industry-related performance effects (Dess, Ireland, & Hitt, 1990). Recent research in related or similar areas reveals that richer understanding of industry products and resources can be achieved by limiting a study to a single industry (Peteraf & Shanley, 1997; Mehra & Floyd, 1998), and as Ferguson, Deephouse, and Ferguson (2000) suggest, testing a single sector in an industry may further extend this control.

The final sample consisted of 1,126 medical groups located throughout the U.S. These survey data were collected with a questionnaire delivered to a single key person within the organization, usually the top manager or CEO. Survey questionnaires and definitions were mailed to a total of 4,546 Medical Group Management Association (MGMA) member organizations. There were 1,357 questionnaires returned and for reviewing for completeness and eligibility, 1,126 questionnaires were used at a net response rate of 24.8%.

The assumption of uncertainty used throughout this article is based on an extensive amount of research establishing the long-term uncertainty and high rate of change in the health care industry particularly in the mid-1990s (e.g., Alexander, Zuckerman, & Pointer, 1995; Goes & Park, 1997; Shortell et al., 1996). The medical group industry have shown to be consistently characterized by rapid technological changes, strong influences from political realms, and a high interest level from the general public (Carter, 1990) -- all contributing to an overall state of uncertainty (Blair & Buesseler, 1998: Blair & Payne, 2000). However, at the same time these various forces do not allow for extensive innovation in processes or much variability in how organizations are structured.

**Measurement of Variables**

Variables were selected according to previous conceptual arguments to include three groups: (1) realized strategy, (2) structural complexity, and (3) performance. The individual variables for each group were largely taken from Ketchen et al. (1993), where at least one specific variable was taken to represent each of the strategic categories provided in that study. As in Ketchen et al. (1993), these variables were selected because of their applicability to the health care industry and the availability of the data. But because medical groups tend to be regionally differentiated and located within a fragmented industry, additional contextual controls are utilized in these analyses. Industry and contextual variables were obtained from the 1997 US Census Economic Data and the 1997 Health Care Financing Association Medicare Managed Care Data. Additional details on the strategy and structure variables used in the study can be found in the appendix.

**Realized Strategy Variables**

Of the eight categories designated by Ketchen et al. (1993), six were used to develop the realized strategy dimension. Both of the sub-categories listed under finance in Ketchen et al. (1993) were omitted in subsequent analysis because: (1) financial variables are to be used in the measurement of performance and these were deemed to too closely resemble the same type of variables, and (2) the financial variables did not theoretically fit with the two dimensions used in the realized strategy construct.

The remaining six variables are categorized into the two separate strategy dimensions labeled: (1) level of differentiation, and (2) target market scope. Under each dimension, three of the six variables were chosen as representative of that dimension primarily following the theoretical arguments of Porter (1985). The three variables used for level of differentiation include: (1) advertising intensity, from the marketing/ pricing category; (2) continuing medical education intensity, from the research and development category; and (3) procedural efficiency, from the production and operations/capacity category. The three variables used for target breadth include: (1) practice type, from the marketing/ scope of activity category; (2) fee-for-service ratio, from the marketing/distribution category; and (3) non-medical revenue ratio, from the production and operations/capabilities category.

**Structural Complexity Variables**

Several variables were derived from the “organization and management” construct in an effort to give equal weighting to structural complexity, as well as address IORs. For expansiveness, the variables include (1) the size of the organization captured through number of full-time equivalent (FTE) physician providers, (2) the physical size of the medical group in terms of square footage of all facilities, and (3) geographical dispersion, or the total number of operating clinics. For level of linkages, 15 different questions are used and scaled into three broad variables. These three variables include (1) management contracting relationships, (2) horizontal integration with...
other medical groups, and (3) vertical integration with other health care entities, such as hospitals.

**Performance Variables**

Ketchen et al. (1993) listed five primary performance constructs including: (1) sales, (2) equity and investment, (3) assets, (4) margin and profit, and (5) market share. They also include a construct labeled “overall,” which includes variables intended to measure the overarching performance of an organization. The first four constructs provided the financial performance variables used in this study. Market share was not included because a good measure of market share for each medical group was not available in these data.

Return on sales, return on equity, return on assets, and average profitability are each measured using specific questions from the questionnaire, but with one common element—the net revenue of the medical group prior to disbursement to providers. Utilizing this variable in performance measurements more accurately predicts actual financial performance than net income because physician organizations often are very “cash-lean,” choosing to disperse any profits to the owners or partners who are typically the working physicians. This disbursement creates a problem when very profitable and successful groups distribute all or almost all profits to the physician partners or owners prior to tallying the final book values. Net income, as opposed to net revenue prior to distribution, is composed of the total medical revenue after operating costs minus total provider costs plus net non-medical income. For 1,126 respondents, a mean of $8,524 and standard deviation of $82,677 was the result. This indicates that many organizations are operating with a net loss and that most groups tend to show very little profit or net income in their accounting reports. Small net gains and even some losses seem to be the norm for medical groups, even across many years. In 2001, the average medical group lost $16,840 per physician (Modern Healthcare, 2002). And, according to a recent survey by the American Medical Group Association of 34,500 physicians, medical groups lost an average of $1,365 and $784 per physician in the northern and eastern regions of the U.S., respectively, while in the southern and western regions, only a $40 and $479 profit were reported, respectively (Roszak, 2005).

**Context of Study and Control Variables**

Although, it is likely that restricting the study to only one type of organization, medical groups, will control for much of the variance among the organizations because of environmental influences (Dess et al., 1990), additional controls might be necessary to control regional effects. In other words, medical groups being largely regional in nature—focusing only on the readily available, physical market—may have particular issues at a regional level, which impact overall performance. As noted above, there seems to be a variance in performance associated with region (Roszak, 2005). With this in mind, four separate control variables were developed as an extra measure of control. These controls looked primarily at the regional concentration of competitors, buyers, suppliers, and the general munificence of the region to dissolve any regional uncertainty variations.

The 1997 US Census Economic Data and the 1997 Health Care Financing Association Medicare Managed Care Data contributed to the development of these variables. The Economic Data gives the actual number of physician clinics, hospitals, and nursing facilities in a given county. The concentration, or dilution level, for each organization type results from taking the overall population of the county and dividing it by the number of organizations located within that county. The fourth environmental control variable measures the percentage of managed care in the region (i.e., county). Managed care plans have long been a significant factor in health care delivery and represent different methods of payment as well as ways of competing in a given region. To control for areas that vary in managed care impact, the percentage of managed care is used—which is also arranged by county.

**Data Preparation**

Prior to the analyses, a series of modifications was performed to improve these data’s analyzability and predictability. Considerations were given to (1) the normality of the data and the presence and influence of outliers, and (2) survey non-response and missing data. A Tukey’s transformation was utilized following the estimation formula \( r(1-1/3)/(n+1/3) \), where \( n \) is the number of observations and \( r \) the rank from 1 to \( n \). Cases with the same values for a variable are assigned the mean of the ranks for tied values. Standardized values were set such that the mean is zero and the standard deviation is one. Extreme observations or outliers that were beyond three standard deviations are considered to be highly influential and were eliminated from the analyses. This cut-off is also achieved one other end—the limitation of the respondents to organizations of 3 to 329 FTE physicians, which is standard method of measuring organizational size in medical groups. Item non-response was handled utilizing a method termed multiple imputation (Gilley & Leone, 1991). Multiple imputation refers to a procedure for replacing missing values where known values are ordered in
multiple ways so that complete data sets can be created from imputation
based on several related ordered sets. This type of imputing has advantages
over both listwise deletion, which can create its own biases, and substitution
with the mean because mean replacement assumes that item non-response is
random, which is often not the case (Durand, Guffey, & Planchon, 1983).
Further, mean substitutions tend to decrease the variability and item corre-
lations in such a way that it may partially remove some of the potential
findings or relationships in the data (Gille & Leone, 1991). Post-hoc analysis
did not find any bias in terms of type or size of the medical group for
those with imputed variables and normal variables.

Fit and Total Performance Construct Creation

To properly examine the issues of strategy-structure internal and external fit,
additional constructs are needed. These constructs are created based on the
above variables and are built on the two central strategy and structure
dimensions of realized strategy and structural complexity.

Strategy and Structure Constructs

The first additional constructs are the four strategy and structure con-
structs of: (1) level of differentiation, (2) target scope, (3) expansiveness, and
(4) level of linkages (Fig. 2). These four were then used to calculate the

Fit as Moderation and Matching

internal fit constructs. Table 1 gives the Pearson correlation coefficients
based on standardized values and their respective significant levels. This
table represents the primary variables upon which the scales and fit mea-
ures are based, including those variables for performance and environmental
control.

Initial examination of the key variables in Table 1 reveals many of them
being correlated. However, since no pairwise correlations were above the
0.6 level, multicollinearity did not appear to be problematic. Additionally,
variance inflation factor tests revealed no evidence of multicollinearity.
When the strategy and structure variables are subjected to principal com-
ponents analyses, the four dimensions that were expected emerge. These
analyses used an extraction method with Varimax rotation. Additionally,
the Bartlett Test is significant at 0.00, indicating it is unlikely the popu-
lation correlation matrix is a single identity. These analyses indicate that
although some correlations do exist between the strategy and structure vari-
ables, independent components or dimensions that are broader in scope
than the individual variables also exist. Thus, the utilization of scaled
constructs is supported and may reveal more about the medical groups and
their strategy and structure relationships than the individual variables
themselves.

Performance Construct

Principal components analysis of the four performance variables of ROS,
ROE, ROA and average profitability reveals that a single component exists.
As with the other principal components analyses, an extraction method with
Varimax rotation was used. A single component, labeled as Total Perform-
ce in the remaining discussions, was created by taking the mean of the
four individual performance variables.

Fit Constructs

The matching fit variables (Fit 1b, Fit 2b, Fit 3b, and Fit 4b) are calculated
by taking the absolute value of the difference between each of the realized
strategy and structural complexity constructs. Greater difference be-
 tween the actual scores of these values indicates less of a matching fit. However,
the values were reverse-coded if necessary so that as the value increases, the
level of fit also increases. Note that these constructs are not interaction
terms, indicating the hypothesized directions are based on the directions of
the two individual constructs themselves. These are independent measures
that represent the distance or matching relationship between the organiza-
tion's strategy and structure. The moderation fit constructs were developed

Fig. 2. Strategy and Structure Fit Model.
### Table 1. Correlations of Primary Variables Arranged by Contract

<table>
<thead>
<tr>
<th>Variables</th>
<th>1</th>
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<td>1. Pricing: Advertising</td>
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<td>2. R&amp;D: Meetings</td>
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<td>3. Capacity: Procedures</td>
<td>0.151***</td>
<td>0.145***</td>
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<td>4. Scope of security:</td>
<td>-0.121***</td>
<td>-0.126***</td>
<td>-0.258***</td>
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<td>5. Distribution: FFS</td>
<td>-0.106***</td>
<td>-0.035*</td>
<td>-0.109***</td>
<td>0.314***</td>
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<td>Non-capacity</td>
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<td>-0.069</td>
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<td>7. Size: # FTE</td>
<td>-0.094</td>
<td>-0.111***</td>
<td>-0.144***</td>
<td>0.572***</td>
<td>0.292***</td>
<td>0.161***</td>
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<td>8. Physical size:</td>
<td>-0.031</td>
<td>-0.139***</td>
<td>-0.574***</td>
<td>0.556***</td>
<td>0.221***</td>
<td>0.155***</td>
<td>0.688***</td>
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<tr>
<td>9. Square footage</td>
<td>0.034</td>
<td>-0.043</td>
<td>-0.198***</td>
<td>0.268***</td>
<td>0.322***</td>
<td>0.090***</td>
<td>0.566***</td>
<td>0.535***</td>
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<td>10. # clients</td>
<td>-0.025</td>
<td>-0.029</td>
<td>0.087</td>
<td>0.085</td>
<td>0.012</td>
<td>0.016</td>
<td>0.038</td>
<td>0.126**</td>
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<tr>
<td>11. Horizontal relationships</td>
<td>-0.011</td>
<td>0.046</td>
<td>0.029</td>
<td>0.026</td>
<td>0.087</td>
<td>0.029</td>
<td>-0.008</td>
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<td>12. Vertical relationships</td>
<td>-0.057</td>
<td>0.029</td>
<td>0.075</td>
<td>0.029</td>
<td>-0.008</td>
<td>0.041</td>
<td>0.025</td>
<td>-0.056***</td>
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<tr>
<td>13. Return on sales</td>
<td>-0.055°</td>
<td>0.109***</td>
<td>0.133***</td>
<td>-0.182***</td>
<td>-0.017</td>
<td>-0.126***</td>
<td>-0.094</td>
<td>-0.253***</td>
<td>-0.184***</td>
<td>-0.076*</td>
<td>-0.037</td>
<td>0.060*</td>
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<tr>
<td>14. Return on equity</td>
<td>0.035</td>
<td>0.019</td>
<td>0.120***</td>
<td>-0.140***</td>
<td>-0.278**</td>
<td>-0.49</td>
<td>-0.808</td>
<td>-0.097</td>
<td>0.054</td>
<td>-0.130**</td>
<td>-0.020</td>
<td>0.074*</td>
<td>0.225***</td>
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<td>15. Return on assets</td>
<td>0.300*</td>
<td>0.107***</td>
<td>0.106***</td>
<td>-0.407***</td>
<td>-0.546***</td>
<td>-0.236***</td>
<td>-0.366***</td>
<td>-0.258***</td>
<td>0.180</td>
<td>0.021</td>
<td>0.044</td>
<td>0.060*</td>
<td>0.004</td>
<td>-0.021</td>
<td>0.086*</td>
<td>0.070*</td>
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<td>16. Profitability</td>
<td>0.148***</td>
<td>0.097***</td>
<td>0.125***</td>
<td>-0.400***</td>
<td>-0.278***</td>
<td>-0.441***</td>
<td>-0.296***</td>
<td>-0.156***</td>
<td>0.140*</td>
<td>0.055</td>
<td>0.137**</td>
<td>-0.016</td>
<td>-0.096**</td>
<td>0.027</td>
<td>0.086*</td>
<td>0.004</td>
<td>-0.016</td>
<td>-0.030</td>
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<td>Environmental control variables</td>
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<tr>
<td>17. Clinical: concentration</td>
<td>-0.006</td>
<td>-0.026</td>
<td>0.042</td>
<td>-0.193***</td>
<td>-0.653</td>
<td>-0.032</td>
<td>-0.065***</td>
<td>-0.124***</td>
<td>0.010</td>
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<td>0.065</td>
<td>0.036</td>
<td>0.046</td>
<td>0.103***</td>
<td>0.338***</td>
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<td>18. Hospital: concentration</td>
<td>-0.085</td>
<td>-0.047</td>
<td>-0.053</td>
<td>-0.075</td>
<td>-0.039</td>
<td>-0.026</td>
<td>0.002</td>
<td>-0.016</td>
<td>0.094</td>
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<td>0.008</td>
<td>0.009</td>
<td>0.054</td>
<td>0.025</td>
<td>0.225***</td>
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<td>19. SNF &amp; nursing: facility concentration</td>
<td>-0.053</td>
<td>0.032</td>
<td>0.005</td>
<td>0.004</td>
<td>0.002</td>
<td>0.011</td>
<td>-0.011</td>
<td>0.028</td>
<td>0.024</td>
<td>-0.29</td>
<td>0.083*</td>
<td>0.017</td>
<td>0.004</td>
<td>-0.007</td>
<td>0.071*</td>
<td>-0.052</td>
<td>-0.537***</td>
<td>0.132***</td>
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<tr>
<td>20. Managed care penetration</td>
<td>0.008</td>
<td>0.042</td>
<td>0.161***</td>
<td>-0.052</td>
<td>0.232***</td>
<td>0.025</td>
<td>0.059</td>
<td>-0.029</td>
<td>0.035</td>
<td>0.155</td>
<td>0.137**</td>
<td>-0.016</td>
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<td>-0.018</td>
<td>0.002</td>
<td>0.014</td>
<td>0.154***</td>
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</table>

*p ≤ 0.10, **p ≤ 0.05, ***p ≤ 0.01,

*p ≤ 0.001,

Values are Pearson correlation coefficients based on standardized values.

*N = 1105.
Hypothesis one, two, and three postulate that the level of differentiation (in terms of product and service offerings and customer service), the scope of the organization, and the level of innovation in products and services, respectively, impact the dependent variable, performance. These hypotheses are formulated in a way to support the findings that higher levels of differentiation, broader scope of organization, and innovation are associated with higher performance. The significance of these findings is also supported by the previous research in the field of strategy and performance. The significant findings in this stream of research confirm that differentiation, scope, and innovation are positively related to performance, as stated in the hypotheses.

Table 2: Regression Analyses for Return on Sales^a.

<table>
<thead>
<tr>
<th>Strategy: Differentiation</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
<th>Model 5</th>
<th>Model 6</th>
<th>Model 7</th>
<th>Model 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategy: Target scope</td>
<td>0.045</td>
<td>0.049</td>
<td>0.053</td>
<td>0.037</td>
<td>0.037</td>
<td>0.040</td>
<td>0.033</td>
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<tr>
<td>Structure: Expansiveness</td>
<td>0.064*</td>
<td>0.069*</td>
<td>0.067</td>
<td>0.066</td>
<td>0.066</td>
<td>0.064</td>
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<tr>
<td>Structure: Linkages</td>
<td>-0.087</td>
<td>-0.099</td>
<td>0.018</td>
<td>0.021</td>
<td>0.013</td>
<td>0.017</td>
<td>0.027</td>
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<tr>
<td>Fit 1a: Expansive Scope</td>
<td>0.000</td>
<td>-0.001</td>
<td>-0.036</td>
<td>-0.037</td>
<td>-0.036</td>
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<tr>
<td>Fit 1b: Expansive × Scope</td>
<td>0.067*</td>
<td>0.070*</td>
<td>0.068*</td>
<td>0.063*</td>
<td>0.062*</td>
<td>0.067*</td>
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<tr>
<td>Fit 1c: Linkage × Scope</td>
<td>-0.036</td>
<td>-0.037</td>
<td>-0.046</td>
<td>-0.048</td>
<td>-0.046</td>
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<tr>
<td>Fit 1d: Expansive × Differentiation</td>
<td>0.041</td>
<td>0.072*</td>
<td>0.041*</td>
<td>0.072*</td>
<td>0.041*</td>
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<tr>
<td>Environment: Clinics</td>
<td>0.054</td>
<td>0.045</td>
<td>0.047</td>
<td>0.047</td>
<td>0.047</td>
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</tr>
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<td>0.021</td>
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<td>0.024</td>
<td></td>
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<tr>
<td>Environment: Managed care</td>
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<td>-0.013</td>
<td>-0.013</td>
<td>-0.013</td>
<td></td>
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</tr>
<tr>
<td>F</td>
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<td>8.019***</td>
<td>9.046***</td>
<td>6.289***</td>
<td>2.522***</td>
<td>8.782***</td>
<td>6.035***</td>
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<td>R^2</td>
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<td>0.053</td>
<td>0.062</td>
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<td>Adjusted R^2</td>
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</table>

*p ≤ 0.10.
* *p ≤ 0.05.
* * *p ≤ 0.01.
* * * *p ≤ 0.001.
^aStandardized beta coefficient, N = 1105.

by multiplying each combination of the strategy and structure constructs together. Thus, interaction variables were created.
### Table 3. Regression Analyses for Return on Equitya.

<table>
<thead>
<tr>
<th>Model</th>
<th>Strategy: Differentiation</th>
<th>Strategy: Target scope</th>
<th>Structure: Expansiveness</th>
<th>Structure: Linkages</th>
<th>Fit 1a: Expansive x Scope</th>
<th>Fit 2a: Linkage x Differentiation</th>
<th>Fit 3a: Linkage x Scope</th>
<th>Fit 4a: Expansive x Differentiation</th>
<th>Fit 1b: Expansive – Scope</th>
<th>Fit 2b: Linkage – Differentiation</th>
<th>Fit 3b: Linkage – Scope</th>
<th>Fit 4b: Expansive – Differentiation</th>
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<tbody>
<tr>
<td></td>
<td>0.096**</td>
<td>-0.133***</td>
<td>0.049</td>
<td>-0.031</td>
<td>-0.011</td>
<td>0.008</td>
<td>-0.040</td>
<td>-0.031</td>
<td>0.012</td>
<td>0.006</td>
<td>0.006</td>
<td>0.003</td>
</tr>
<tr>
<td>Model 2</td>
<td>0.096**</td>
<td>-0.136***</td>
<td>0.045</td>
<td>-0.031</td>
<td>-0.013</td>
<td>0.008</td>
<td>-0.042</td>
<td>-0.027</td>
<td>0.010</td>
<td>0.005</td>
<td>0.006</td>
<td>0.003</td>
</tr>
<tr>
<td>Model 3</td>
<td>0.091**</td>
<td>-0.132***</td>
<td>0.048</td>
<td>-0.020</td>
<td>0.027</td>
<td>0.008</td>
<td>0.043</td>
<td>-0.028</td>
<td>-0.002</td>
<td>0.006</td>
<td>0.006</td>
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</tr>
<tr>
<td>Model 4</td>
<td>0.091**</td>
<td>-0.135***</td>
<td>0.045</td>
<td>-0.020</td>
<td>0.027</td>
<td>0.008</td>
<td>0.043</td>
<td>-0.028</td>
<td>-0.002</td>
<td>0.006</td>
<td>0.006</td>
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<tr>
<td>Model 5</td>
<td>0.096**</td>
<td>-0.131***</td>
<td>0.049</td>
<td>-0.020</td>
<td>0.027</td>
<td>0.008</td>
<td>0.043</td>
<td>-0.028</td>
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<td>0.006</td>
<td>0.006</td>
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<tr>
<td>Model 6</td>
<td>0.093**</td>
<td>-0.134***</td>
<td>0.045</td>
<td>-0.020</td>
<td>0.027</td>
<td>0.008</td>
<td>0.043</td>
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<td>-0.002</td>
<td>0.006</td>
<td>0.006</td>
<td>0.003</td>
</tr>
<tr>
<td>Model 7</td>
<td>0.091**</td>
<td>-0.118**</td>
<td>0.042</td>
<td>-0.020</td>
<td>0.027</td>
<td>0.008</td>
<td>0.043</td>
<td>-0.028</td>
<td>-0.002</td>
<td>0.006</td>
<td>0.006</td>
<td>0.003</td>
</tr>
<tr>
<td>Model 8</td>
<td>0.091**</td>
<td>-0.115**</td>
<td>0.042</td>
<td>-0.020</td>
<td>0.027</td>
<td>0.008</td>
<td>0.043</td>
<td>-0.028</td>
<td>-0.002</td>
<td>0.006</td>
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</table>

\[<p>^aStandardized beta coefficient. N = 1105.</p>\]

### Table 4. Regression Analyses for Return on Assetsa.

<table>
<thead>
<tr>
<th>Model</th>
<th>Strategy: Differentiation</th>
<th>Strategy: Target scope</th>
<th>Structure: Expansiveness</th>
<th>Structure: Linkages</th>
<th>Fit 1a: Expansive x Scope</th>
<th>Fit 2a: Linkage x Differentiation</th>
<th>Fit 3a: Linkage x Scope</th>
<th>Fit 4a: Expansive x Differentiation</th>
<th>Fit 1b: Expansive – Scope</th>
<th>Fit 2b: Linkage – Differentiation</th>
<th>Fit 3b: Linkage – Scope</th>
<th>Fit 4b: Expansive – Differentiation</th>
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</thead>
<tbody>
<tr>
<td>Model 1</td>
<td>0.087**</td>
<td>-0.279***</td>
<td>-0.189***</td>
<td>0.009</td>
<td>-0.011</td>
<td>-0.004</td>
<td>-0.065*</td>
<td>-0.033</td>
<td>0.112***</td>
<td>0.018</td>
<td>0.132***</td>
<td>0.048</td>
</tr>
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<td>Model 2</td>
<td>0.085**</td>
<td>-0.275***</td>
<td>-0.190***</td>
<td>0.002</td>
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<td>-0.010</td>
<td>-0.070*</td>
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<td>0.091***</td>
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<td>0.013</td>
<td>0.012</td>
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<tr>
<td>Model 3</td>
<td>0.084**</td>
<td>-0.277***</td>
<td>-0.190***</td>
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<td>0.005</td>
<td>0.011</td>
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<td>Model 4</td>
<td>0.087**</td>
<td>-0.268***</td>
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<td>0.033</td>
<td>0.039</td>
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<td>-0.062</td>
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<td>0.010</td>
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<td>0.011</td>
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<td>Model 5</td>
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<td>-0.262***</td>
<td>-0.185***</td>
<td>0.003</td>
<td>0.029</td>
<td>0.027</td>
<td>-0.185*</td>
<td>-0.087*</td>
<td>0.039*</td>
<td>0.032</td>
<td>0.005</td>
<td>0.017</td>
</tr>
<tr>
<td>Model 6</td>
<td>0.082**</td>
<td>-0.232***</td>
<td>-0.153***</td>
<td>0.002</td>
<td>0.033</td>
<td>0.039*</td>
<td>-0.159*</td>
<td>-0.062*</td>
<td>0.042*</td>
<td>0.033</td>
<td>0.005</td>
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</tr>
<tr>
<td>Model 7</td>
<td>0.077**</td>
<td>-0.233***</td>
<td>-0.155***</td>
<td>0.002</td>
<td>0.033</td>
<td>0.039*</td>
<td>-0.159*</td>
<td>-0.062*</td>
<td>0.042*</td>
<td>0.033</td>
<td>0.005</td>
<td>0.017</td>
</tr>
<tr>
<td>Model 8</td>
<td>0.077**</td>
<td>-0.233***</td>
<td>-0.155***</td>
<td>0.002</td>
<td>0.033</td>
<td>0.039*</td>
<td>-0.159*</td>
<td>-0.062*</td>
<td>0.042*</td>
<td>0.033</td>
<td>0.005</td>
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\[<p>^aStandardized beta coefficient. N = 1105.</p>\]
## Table 5. Regression Analyses for Profitability

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## Table 6. Regression Analyses for Total Performance

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<td>0.115</td>
<td>0.060</td>
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<tr>
<td>3</td>
<td>-0.004</td>
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<td>0.117</td>
<td>0.062</td>
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</tr>
<tr>
<td>4</td>
<td>0.000</td>
<td>0.002</td>
<td>0.016</td>
<td>0.002</td>
<td>0.119</td>
<td>0.063</td>
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<tr>
<td>5</td>
<td>0.001</td>
<td>-0.001</td>
<td>-0.031</td>
<td>-0.001</td>
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<tr>
<td>6</td>
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<td>0.123</td>
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<tr>
<td>7</td>
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<td>-0.004</td>
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<td>0.069</td>
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<tr>
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<td>0.071</td>
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*Standardized beta coefficient. N = 1105.
buying needs. Hypothesis two predicts that in the given health care environment, a broader target scope will be inversely related to medical group financial performance. The analyses also give support for this strategy construct, except in relation to ROS. Basically, findings reveal that the greater the scope of the medical group, the worse the financial performance. These findings are also consistent with prior research on competitive scope. For instance, Shrader and Simon (1997) found that the relationship between broad/focus strategy and firm's performance was dependent upon the type of firm. Independent ventures (or start-ups) experienced higher performance with the use of broad strategies. However, corporate ventures benefited more from a focused strategy.

Hypothesis three predicts that expansiveness (the size and scale of the medical group's physical structure) will be inversely related to performance. Expansiveness is not statistically significant in relation to ROE, although it is otherwise strongly supported, suggesting that as a medical group increases its structure's size, physical and geographical scope, the worse off the comparative financial performance. This lends support to the notion that flexibility and adaptability may play a key role in developing strong financial results. This finding is also inconsistent with many past studies in other industries, which placed focus merely on firm size. Such studies have supported a positive relationship between size and profitability (e.g., Datta & Guthrie, 1994). Specifically in medical groups, there is an argument that less expansive organizations are better able to facilitate teamwork, coordination and standardization, and thus improving quality of care and financial returns (Solberg, Hroscikoski, Sperl-Hillen, Harper, & Crabtree, 2006).

The weakest support of the four primary variables is found with level of linkages, which focuses on the medical group's number and type of IORs. Only one of the five performance indicators, profitability, showed strong statistical significance in support of hypothesis four. Profitability is measured as an average return per physician, so perhaps this negative relationship demonstrates the notion that external relations distract a significant number of physicians away from their primary function (i.e., treating patients) to doing more administrative tasks. So, while having many linkages may not detract from the organization's overall financial performance because they secure more resources or negotiates better buying capabilities, the influence on physician productivity is likely important. Past research has found the environmental situation of an organization to be important in the number and type of IOR pursued by a firm (Stearns et al., 1987; Thompson, 1967). This suggests that other variables, including environmental uncertainty, are vital in understanding the relationship between IORs and performance.

Examining Fit

The measures of fit exhibited a large amount of variability in relation to the different dependent measures. In Table 2, notice that in relation to ROS, only one moderation (Fit 2a, Hypothesis 6) and one matching fit variable (Fit 1b, Hypothesis 9) showed statistical significance. Table 3, testing against ROE, also showed only limited amounts of statistical significance across the different measures. However, the analyses do reveal an interesting relationship between ROE and the fit constructs developed from level of linkages and target scope (Fit 3a and Fit 3b, Hypothesis 7 and Hypothesis 11, respectively). Since both of these measures of fit are statistically significant, there is seemingly an important relationship between target scope and IORs that needs to be more fully explored. Apparently, matching narrow scope with few linkages and broad scope with more, loose linkages is optimal for high ROE in medical groups. Further, greater linkages seem to moderate the impact of target scope such that the negative relationship between scope and performance is intensified by greater levels of linkages. Tables 4 and 5 also reveal similar findings regarding Fit 3a and performance (Hypothesis 7). But more interesting in Tables 4 and 5 is the significant findings for three of the four matching fit variables. It seems that properly matching strategy and structure is an important indicator of ROA and profitability.

In general, the most comprehensive and telling findings can be viewed in Table 6, which uses the "Total Performance" measurement. There are several indications of matching fit and moderation fit; these statistically significant findings seem to draw from the findings for each of the individual performance variables used in Tables 2–5. Looking at Model 8 of Table 6, note that Fit 2a, Fit 3a, Fit 1b, Fit 2b, and Fit 3b show marginal statistical significance. These findings lend support to Hypotheses 6, 7, 9, 10, and 11. However, these relationships do not explain a vast amount of variance when compared to the four primary independent variables. In fact, from Model 1 to Model 8 in Table 6, with the addition of both types of fit and environment control measures, there is only about a 3% increase in explained variance.

The partial, and sometimes inconclusive, support for the influence of fit on medical group financial performance suggests that a more complex explanation exists for how these variables are related. While the lack of support for the overall influence of fit on performance was unexpected, some past literature has reported similar results (e.g., Grinyer & Yasai-Ardekani, 1980; Habib & Victor, 1991). For instance, although Habib and Victor's (1991) study found strong independent relationships between strategy and structure variables and profitability, their findings failed to provide strong
support for the effect of fit between strategy and structure on firm performance. In a related study, Burton, Lauridsen, and Obel (2002, 2003) examined the influence of situational and contingency misfit on firm performance. Their findings suggested that firms with misfit had higher performance losses when compared to firms with no misfits. However, performance losses did not increase when the number of misfits in an organization increased. While these authors deemed the number of misfits to be irrelevant based on their findings, the current study suggests the degree, not the number, of misfit could explain variance in performance outcomes of firms with a lack of fit. As such, one area of future study would be an examination of how the degree, rather than the presence, of misfit impacts firm performance.

Another possible explanation for the inconclusive evidence of a fit-performance in this study could be Hambrick and Finkelstein's (1987) logic of managerial discretion. A lack of managerial discretion would greatly reduce the influence of the fit between strategy and structure as decision-making and performance become contingent on externalities. Thus, contingency relationships associated with strategy and structure become more likely the key determinants of financial performance. While managerial discretion could easily alter the influence of fit on performance, other research suggests the lack of findings could be the result of the sample's context used in the analysis. Gresov and Drazin (1997) suggested that single industry studies could be restricted in their ability to choose alternative strategies and structures, particularly in cases of multiple and conflicting functional demands. In other words, the functional paradox that exists in the health care context is that organizations operating in alternative contexts, but are not overly distinguishing in this study of medical groups.

These general findings suggest some basic implications that may be applied more specifically to practicing managers operating in the uncertain health care environment. Generally, these findings suggest that higher levels of financial performance and survival are likely best achieved by mimicking other successful medical groups. Monitoring and following best organizational practices are one method of achieving legitimacy for a medical group; legitimacy, then, leads to increased levels of financial returns because of the external environment's control of the markets and payment scales. However, such data concerning best practices have not been broadly developed or utilized to support medical group strategy and structure decisions. Until such information is more broadly assessable and applied, executives and physician-executives should scout out existing, successful medical groups and copy their strategies and structures; some, such as Solberg et al. (2006), have already begun the process of studying highly successful groups and identifying the activities leading to their success. Mimicking highly successful medical groups is likely to lead to the most successful outcomes, while trying unproved strategies and structures, particularly in efforts to be more comprehensive, efficient, and gain economies of scale, are likely to be wasted performance of the organization. The fit relationships seem to be less important than the primary variables supporting a contingency relationship with the health care environment. Thus, regardless of the alignment or fit of strategy and structure, the primary basis for understanding financial outcomes at the individual medical group level comes from the individual variables themselves in a contingency fashion. Therefore, the broad implication is that any fit found between strategy and structure may not be the primary significant factor that influences performance of medical groups.

In general, organizational researchers and practicing managers can make use of this study by analyzing several key factors that influenced the findings. These basic issues are summarized in the following statements: (1) the health care industry and market play the major role in determining successful medical groups from unsuccessful ones, (2) choice of strategy and structure is more limited than often expected because of the dominant influence of regulations and payment systems, (3) high differentiation and focused strategies are likely to be more successful strategies in the health care environment, (4) small and flexible organizations are likely to be more successful in the health care environment, (5) matching and moderation fit remain elusive concepts that may have an influence on organizational performance when compared to organizations in other industries and operating in alternative contexts, but are not overly distinguishing in this study of medical groups.

CONCLUSIONS

Strategy-structure fit has been touted as a possible reason for performance differences among firms, but has been met with much empirical difficulty given its multidimensional and operationally elusive nature. This study operationalized fit as both an interaction and a match between multiple dimensions of strategy and structure in medical groups; findings suggest that both types of fit have only limited impact on predicting the overall
effort. As Donald W. Fisher, the American Medical Group Association’s president suggested to Hospital and Health Networks (Roszak, 2005, p. 92), the current transaction-based reimbursement system is “indifferent” to the improvements medical groups make in technology, operations, and innovative care processes. Therefore, such investments are not supported by the current system and tend to only detract from the bottom line.

ACKNOWLEDGMENTS

The author is grateful to all the people at the Center for Research in Ambulatory Health Care Administration, the research and development arm of the Medical Group Management Association, Englewood, Colorado, for their assistance with these data.

REFERENCES

APPENDIX

This appendix gives details about the specific variables in this study. These variables are each representative of the primary categories developed by
Ketchen et al. (1993) in a study of hospitals, which include: production and operations, research and development (R&D), finance, marketing, organization and management, and industry structure. Within three of these categories, Ketchen et al. (1993) developed sub-categories: production and operations includes (a) capacity and (b) capabilities; finance includes (a) financial structure and (b) capital investment; and marketing encompasses (a) pricing, (b) scope of activity, and (c) distribution. The strategy variables are taken from marketing – pricing and scope of activity, production and operations – capacity and capabilities, R&D, and distribution. The structure variables are all taken from the organization and management category to include expansiveness and linkages with outside organizations.

**Strategy Variables**

**Pricing Category: Advertising Intensity**

Advertising intensity is measured as the ratio of promotion and marketing expenses to total operating costs. Advertising has been used in previous studies such as Oster (1982) and Namiki (1988). Although medical groups typically do not utilize common media-based forms of advertising, other forms of promotion are often employed (e.g., sponsorships).

**R&D: Continuing Medical Education Intensity**

Research and development typically refers to efforts to create new products or services (e.g., Hergert, 1987). Since no direct counterpart is available in medical groups, learning through medical conferences and meetings is utilized as a source of knowledge for providers (i.e., physicians). Continuing medical education intensity was measured as the ratio of dollars spent on meetings and travel to total provider expenses. Greater levels of education are indicative of the intent to improve quality and specialization.

**Production and Operations Capacity: Procedural Efficiency**

From an efficiency standpoint, capacity refers to the volume of goods or services a firm can produce or deliver. Since physician organizations are highly intensive service-based organizations, the volume of production comes from the actual number of procedures done per provider. The average number of procedures per FTE physician is used to determine how efficient the organization is as a whole. More patient time spent with the physician is often equated to higher quality of care. The inverse of the variable is used to align with the above two variables. Similar variables have been used by Hatten, Schendel, and Cooper (1978) and Tremblay (1985).

**Scope of Activities: Practice Type**

Scope of activities is the firm's range of products, services, or markets. Responses of single-specialty or multi-specialty organization types are used to demonstrate the diversity of services rendered to customers. Single-specialty medical groups (e.g., cardiology, dermatology, radiology) deliver a more focused set of services than multi-specialty. Of the original 1,126 firms in these data, 769 (68%) are single specialty firms. Previous research has used similar variables including number of brands or products (Hatten & Schendel, 1977), breadth of products (Dess & Davis, 1984), and quality of products and services (Hawes & Crittenden, 1984).

**Distribution: Fee-for-Service Ratio**

Distribution refers to the method through which products or services are made available to the customer. In medical groups, care is delivered according to payment schemes delivered through third party payers. Sophisticated systems of reimbursement often involve capitation agreements and fee-for-service (FFS) systems. The greater the ratio of non-FFS revenues to total net revenue indicates more types of payment systems are being used.

**Production and Operations Capabilities: Non-medical Revenue Ratio**

This variable, measured as the ratio of non-medical sales to medical services sales, refers to the operational ability of the firm to meet customer's needs on a broader scale. Capabilities, therefore, reference the relative ability of the medical group to provide more than just medical services, but also other goods and services. For example, an orthopedic surgery group may also sell durable medical equipment to their patients: this would extend the target scope of the group beyond just delivering medical-based services to the consumer.

**Structure Variables**

**Organizational Size: Number of FTE Physicians**

Size ranges from 3 FTE physicians to 3,261 in the original sample. A mean of 23.6 indicates that a large proportion of the organizations are smaller in size.
Physical Size: Square Footage of Buildings
This variable is used as a measure of physical size available to the employees to conduct business.

Geographical Dispersion: Number of Clinics
Geographical dispersion refers to the level of dispersion of activities or personnel and the separation of power. This is a form of organizational complexity typically measured by the number of locations in which an organization has offices or production locations (Hall, 1999). Here, the number of clinics (separate operating sites) that are part of a single organization is used. The number of clinics ranges from 1 to 76 with a mean of 4.5 in the original sample.

Management Contracting
This variable measures if the medical group utilizes external management services from either a practice management company or a hospital. The large majority of medical groups (85%) did not contract with outside management services, with 12% utilizing one type of contract and 2% utilizing management services from both hospitals and practice management companies.

Horizontal Relationships: Other Medical Practices
Five binomial questions regarding relationships with other medical practices were summed to a single measure of horizontal linkages. The questions included inquiries about relationships to independent practice associations (IPAs), group practice without walls, recent mergers, medical foundations, and subsidiary status. About 43% of the practices had no horizontal relationships, while 44% reported one type, typically that of participating in an IPA.

Vertical Relationships: Hospitals
Four binomial questions were summed to determine the extent of the medical group’s ties to a hospital or hospitals. These questions inquired about full or partial hospital ownership, physician staffing or employment by a hospital, and participation in a physician–hospital organization (PHO). Most medical groups had no formal ties to hospitals (52%); however, approximately 30% reported being a participant in a PHO.