

Strategy-Performance Relationships In Service Firms: A Test For Equifinality*

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About seventy-five years ago, the biologist Ludwig von Bertalanfy began a study to investigate the movement of organisms within a biological system. He formulated certain concepts concerning the organism as an open system and also defined the principle of equifinality by stating that "the same final state can be reached from different initial conditions and in different ways" (von Bertalanfy, 1960: 84).

In the process of using the open systems model to legitimize organizational studies, Katz and Kahn (1966) discussed the properties of open systems and included the notion of equifinality. The systems par-

adigm peaked in 1972 and eventually went out of fashion by 1976 (Ashmos and Huber, 1987). However, in the strategic management and strategic marketing literature, many statements have been made that within a certain strategic typology, no one strategy is neither inferior nor superior to that of another strategy (Kald *et al.*, 2000; Deshpande and Farley, 1998). In fact, Miles and Snow (1978) and Porter (1980) argue that the strategies described in their respective typologies are neither inferior nor superior. Certain researchers have posited that the notion of equifinality may offer insights into this superiority-inferiority argument (Gre-

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sov and Drazin, 1997; Jennings and Seaman, 1994; Matsuno and Mentzer, 2000). Interestingly, within the strategic management and marketing literature, the notion of equifinality has been studied and has taken on two theoretical perspectives. One such perspective (the strategy approach) is that an organization can achieve an outcome by a variety of strategic actions or strategies (Miles *et al.*, 1978). The other perspective (the strategy-structure fit perspective) is that a feasible set of equally effective, internally consistent patterns of strategy and structure exist (Van de Ven and Drazin, 1985). In essence, proponents from both schools make the same argument—a desired outcome can be reached by the use of different approaches. The “strategy approach” school argues that different strategies can yield the same outcome. This is the rationale used by Miles and Snow (1978) and by Porter (1980) in stating that the strategies described in their respective typologies are neither inferior nor superior. However, advocates of the “strategy-structure fit” school add an extra dimension to their argument in that the firm’s strategy must be aligned with its structure and that a variety of strategy-structure matches can be used to acquire the same outcome. While most of the research on equifinality within strategic management and marketing has been theoretical in nature, two empirical studies of equifinality have been conducted (Doty *et al.*, 1993; Jennings and Seaman, 1994). Both of these studies have supported the notion of equifinality in that a variety of strategic approaches can achieve the same outcome.

The purpose of this study is to extend research on equifinality by examining the strategy-performance re-

lationship across a variety of service firms. First, the literature on contingency theory and business strategy is reviewed to present a theoretical framework and to develop hypotheses. Next, the methodology used in the study is presented, and then the findings are reported and discussed.

THEORETICAL FRAMEWORK AND HYPOTHESES

Contingency Theory

Two sets of pervasive arguments exist among contingency theorists with respect to how fit affects performance. One such argument suggests that a one-best strategy-structure arrangement exists to fit a given industry environment (Dill, 1958; Hage and Aiken, 1970; Lawrence and Lorsch, 1969; Lorsch and Morse, 1974). The other argument is that organizational effectiveness results from fitting certain organizational characteristics to contingencies that reflect the situation of the organization (Burns and Stalker, 1961; Galbraith, 1973; Hage and Aiken, 1969; Pugh *et al.*, 1969). These contingencies include the environment (Burns and Stalker, 1961), organizational size (Child, 1975), and strategy (Chandler, 1962). Proponents of the contingency school of organizational behavior (Donaldson, 2001; Penning, 1975; Pfeffer, 1997; Schoonhoven, 1981; Scott, 1992) argue that a variety of strategic approaches can be equally effective. Donaldson (2001) argues that those scholars who assert there is one best way to organize belong in the universalistic theory of organization thought rather than to the contingency theory school.

Business Strategy

Miles and Snow (1978) identified four business strategy types that were labeled as defender, prospector, analyzer, and reactor. Defenders usually direct their products or services to a clearly defined segment of the total market and they offer their target market a full range of products or services and strive to build satisfied customers. Growth is achieved cautiously and incrementally through market penetration. Having chosen stable products and markets, the defender organization protects its domain by offering higher quality, superior service, and competitive prices. Prospectors have a broad product/market domain that is in a continuous state of development. Growth is achieved through product development and market development. Multiple technologies are developed for its different products and its technological processes are flexible in order to constantly produce new products. Analyzers are a combination of the prospector and defender types of organizations. The analyzer's domain consists of products and markets, some of which are stable while others are changing. It has a dual technological core to meet the demands of its stable and changing domains. It is an avid follower of change and imitates the best products and markets of the prospector through extensive market surveillance. Growth occurs through market penetration as well as through market development and product development. Reactors respond inappropriately to environment change and uncertainty because they do not have mechanisms to respond consistently to their environment. Within the Miles and Snow (1978) typology, a

conflicting assertion exists. For example, an entire chapter of the 1978 book is devoted to a description of the reactor strategy as a fourth "ideal" type. However, the authors describe the reactor as a "residual" type of behavior in that organizations are forced into this response mode when they are unable to pursue either a defender, prospector, or analyzer strategy (Miles and Snow, 1978: 93). Also, the authors state that an organization may be classified as a reactor when "management fails to align strategy, structure, and context in a consistent fashion" (Miles and Snow, 1978: 12).

Organizations having a reactor strategy have been addressed as both a residual and as a unique type of strategy. While Hambrick (1983) and Zajac and Shortell (1989) simply assumed that the reactor is a residual category, other researchers have identified organizations with a strategy that closely resembled the status of a reactor. As an example, Smith *et al.* (1989) used a cluster analytic technique to identify a group of organizations that closely resembled the reactor. Segev (1989) concluded that prospectors, defenders, analyzers, and reactors are four ideal types of strategy that are unique. Doty *et al.* (1993) argue that the reactor should be treated as a unique ideal type of strategy. Thus, in our study, the reactor is treated as a strategy that is both unique and ideal.

Since the Miles and Snow (1978) typology deals with the intended rate of product/market change within a business, it provides a useful format for studying the successful implementation of different strategies. It is the only typology that characterizes an organization as a complete system, with a focus on the organization's strategic

orientation (Croteau *et al.*, 1999; Evans and Green, 2000; Karimi *et al.*, 1996; Snow and Hrebiniak, 1980). Miles and Snow (1978) posited that defenders, analyzers, and prospectors are likely to perform equally well but that these three strategy types will outperform reactors. Since reactors exhibit an inconsistent pattern of response, often leading to inappropriate reactions to change and uncertainty, they perform poorly (Croteau and Bergeron, 2001; Miles and Snow, 1978; Smith, *et al.*, 1989; McKee *et al.*, 1989; Conant *et al.*, 1990; Zahra and Pearce, 1990). Snow and Hrebiniak (1980) found that defender, prospector, and analyzer organizations consistently outperformed reactor organizations in the plastics, semiconductor, and automotive industries. These findings support Donaldson's (2001) contingency theory argument that there is no best single strategy for a given industry environment.

In the Health Maintenance Organization (HMO) industry, Conant *et al.* (1990) and Parry and Parry (1998) found no significant differences in Miles and Snow's (1978) strategic types regarding distinctive competencies, knowledge of customers, knowledge of competitors, quality of service, quality of offering, effectiveness of public relations, image, and location. In general, Conant *et al.* (1990) and Parry and Parry (1998) found a significant difference in the Miles and Snow's (1978) strategic types in that firms with a reactor strategy reported performing other marketing functions less well than did firms with an analyzer, defender, and prospector strategy. Conant *et al.* (1990) state that while the relationship between Miles and Snow's strategic types and performance has been examined in diverse industry settings, there is a

need for further research across industries, across different industry environments and over time. This study addresses the first issue, research on performance-strategy relationships across industries. Also, this research focuses on the notion of equifinality by exploring the strategy-performance relationship across industries. For example, Miles and Snow's (1978) typology reflects a complex view of organizational and environmental processes, as well as the attributes of product, market, technology, organizational structure and management characteristics (Smith *et al.*, 1989). As described earlier, Miles and Snow have used all of these preceding aspects to develop four distinct strategic types. Further, Miles and Snow argue that their four strategic types are neither inferior nor superior. The concept of equifinality, which states that a particular outcome can be reached by using different business strategies, may illuminate Miles and Snow's argument pertaining to the inferiority or superiority of their strategic types, and can provide support for the arguments of other researchers pertaining to the superiority-inferiority of strategic types (Doty *et al.*, 1993; Gresov and Drazin, 1997; Jennings and Seaman, 1994; Matsuno and Mentzer, 2000). Thus, we hypothesize that:

H1: Organizations with a defender, prospector, or analyzer strategy will have equal levels of performance as measured by earnings growth rate, sales growth rate, return on investment, and return on sales.

H2: Organizations with a defender, prospector, or analyzer strategy will have a higher level of performance than that of organizations with a reactor strategy as measured by earnings growth rate, sales growth rate, return on investment, and return on sale.

RESEARCH METHODS

A random sample of 1,000 U.S. service firms were surveyed in this study. The sample included firms from six service industries, banking, brokerage, hospital, hotel, insurance, and transportation. The sample was randomly selected from the *Dun and Bradstreet Million-Dollar Directory* and the *American Hospital Association Directory*. A questionnaire was developed and pre-tested with a sample of 15 executives from the service industries that were to be researched. This pre-test sample size is within the 15-25 pre-test sample size recommended by Hunt *et al.* (1982). Based on the pre-test, appropriate changes were made to the questionnaire. The questionnaire was then mailed to a top executive or the president of each of the firms in the sample. Huber and Power (1985) have defended our approach of using only one informant per organization. For example, using only one informant can reduce costs

both in terms of time and money. Furthermore, Chief Executive Officers and other senior managers have important information regarding organizational situations (Huber and Power, 1985). A modified version of Dillman's (1978) "total design method" was used in order to enhance response rate and response quality and a three-wave mailing was employed. A total of 410 usable questionnaires were returned for a response rate of 41 percent. The pre-test responses were not included in the study results. Table 1 describes the distribution by industry type of the respondents.

Measuring Strategy

Snow and Hrebiniak's (1980) procedure describing the strategy types of the Miles and Snow (1978) typology was used to measure strategy. As described in Appendix 1, study participants were asked to check the type best describing the strategic behavior

TABLE 1
DISTRIBUTION OF RESPONDENTS

Industry	Initial Sample Size	Number of Responses	Response Rate (%)
Banking	165	69	42
Brokerage	157	53	34
Hospital	164	86	52
Hotel/Lodging	200	67	34
Insurance	157	74	47
Transportation	157	61	39
Total	1,000	410	41

of their firm. This paragraph approach has been commonly used and validated extensively (James and Hatten, 1995; Rajagopalan, 1996) and is considered more convenient than the lengthy multi-item strategy typologies questions used by Hambrick (1981). Also, several studies have validated the ability of managers to self-diagnose their firm's strategic orientation using the Miles and Snow strategy typology (Conant *et al.*, 1990; Shortell and Zajac, 1990; Slater and Narver, 1993). Further, Kiesler and Sproull (1982) argue that practicing managers have the cognitive ability to identify the type of strategy that is employed by their firm and that researchers should utilize this knowledge. Several researchers support Kiesler and Sproull's (1982) argument by stating that the most appropriate and relevant way in which researchers can assess key issues pertaining to types of strategies employed by firms and the selection of competitive positions is to ask the involved managers (Day and Nedunjadi, 1994; Geletkanycz and Black, 2001; Morgan and Piercy, 1998).

Measuring Performance

Respondents were asked to evaluate their firm's performance relative to a major competitor using four performance measures—earnings growth rate, sales growth rate, return on investment, and return on sales—with a self-report five-point Likert scale as described in Appendix 2. Management assessments are generally consistent with objective performance measures internal to the organization (Conant *et al.*, 1990; Dess and Robinson, 1984; Huber and Power, 1985; Jennings and Young, 1990).

Size and Performance

Certain researchers (Lindsay and Rue, 1980; Robinson, 1982; Jennings and Lumpkin, 1992) have argued that small-size firms may exhibit different characteristics from those of large-size firms and should be considered as a separate class in data analysis. As organizations increase in size, they emphasize predictability and formalized roles, thereby causing organizational behavior to become rigid, predictable, and inflexible (Downs, 1967; Quinn and Cameron, 1983; Scott, 1995). Since differences in size can influence a firm's performance, as well as other organizational variables, researchers tend to utilize a covariance analysis (ANCOVA) to control for organizational size (Box *et al.*, 1992). The F-ratio for differences in performance means of prospector, defender, analyzer, and reactor was 223.65 ($p < 0.0001$). This test result suggests that performance mean differences were not simply an artifact of organizational size.

RESULTS

An overall performance measure was computed using the means of the four individual performance measures—earnings growth rate, sales growth rate, return on investment, and return on sales. An ANOVA was employed to test the performance differences of the four strategy types—defender, prospector, analyzer, and reactor. As depicted in Table 2, the ANOVA indicated that the overall performance mean value for firms with a reactor strategy (2.65) was significantly lower than that of the overall performance mean values of firms with defender (3.57), prospector (3.65), or analyzer (3.56) strategies

($F = 15.99$, $p = 0.0000$). Also, pairwise comparisons were conducted between the performance mean value of each strategy type using Scheffe's multiple range test at the 0.05 significance level. This finding indicated that a significant difference exists between firms with a reactor strategy and each of the other three strategy types. No significant differences were found between the performance of firms with a defender, prospector, or analyzer strategy indicating support for both Hypotheses 1 and 2.

DISCUSSION AND IMPLICATIONS

The major purpose of this study was to extend research on equifinality by examining the strategy-performance relationship across a variety of organizations. Our study indicates that organizations with a defender, prospector, or analyzer strategy have equal performance. This finding tends to support the notion of equifinality that allows a feasible set of equally effective patterns of strategy.

TABLE 2

RELATIONSHIP BETWEEN STRATEGY TYPE AND PERFORMANCE

Measure of Performance	Mean Values by Strategy Type				ANOVA F Statistic	Significantly Different Pairs of Group Means
	Defender (D)	Prospector (P)	Analyzer (A)	Reactor (R)		
Overall Performance	3.57 (0.82)	3.65 (0.38)	3.56 (0.75)	2.65 (0.96)	15.99*	R<D; R<P; R<A
Earnings Growth Rate	3.59 (0.99)	3.67 (0.97)	3.57 (1.00)	2.75 (1.20)	8.75*	R<D; R<P; R<A
Sales Growth Rate	3.55 (1.01)	3.78 (0.91)	3.52 (0.86)	2.65 (1.19)	13.67*	R<D; R<P; R<A
Return On Investment	3.62 (1.00)	3.58 (1.05)	3.58 (0.94)	2.70 (1.10)	9.69*	R<D; R<P; R<A
Return On Sales	3.47 (0.97)	3.55 (0.95)	3.52 (0.87)	2.55 (0.98)	13.19*	R<D R<P R<A
N	87	89	181	43		

Numbers in parenthesis are standard deviations.
Scheffe's procedure was used for post tests.

* $p < .01$

This study also provides support for the long-standing notion that Miles and Snow's strategic types exist in a cross-section of service firms and that the performance of an organization with a reactor strategy tends to be lower than those organizations with either a defender, prospector, or analyzer strategy. The limitations of this study should be recognized before generalizing its results. This study examined firms in six service industries. Therefore, the findings may not be applicable to all service industries. To increase the generalizability of these findings to all service industries, future research could be undertaken across additional service industries.

The findings of this study have certain implications pertaining to contingency theory. For example, Varadarajan *et al.* (2001) argue that while it is important to study firms according to the conventional strategic types, another line of research would be to address the issue of whether there is one best strategy-structure arrangement that exists to fit a given industry environment or does organizational effectiveness result from fitting certain organizational characteristics to contingencies that reflect the situation of the organization. These contingencies include the environment, organizational size, and strategy. Proponents of the contingency school of organizational behavior argue that organizational effectiveness is a function of the correctness and tightness of "fit" between the structure and strategy of an organization and of its environment. The notion of equifinality may be an important aspect that provides understanding to the preceding debate. For example, Jennings and Seaman (1994) reported that savings and loans having the best prospector strat-

egy-organic structure fit and savings and loans with the best defender strategy-mechanistic structure fit have equal performance. Further, Gresov and Drazin (1997) report that the concept of equifinality has been demonstrated empirically to relate to organizational design.

An important area for future research involves conducting longitudinal analysis of the evolution of strategies, structures, and environments to establish just how the strategy-structure match becomes optimum. Researchers should continue to test the relationship among strategy-structure configurations with respect to the notion of equifinality. The authors of this study argue that the investigation of equifinality is an area of missed opportunity in organization science research. Such studies require the development of constructs to represent structural and strategic factors.

The findings of this study also have important implications for practicing managers. For example, a choice of the defender, prospector, or analyzer strategy is unlikely to adversely affect performance as these strategy types respond to change in a consistent manner. Reactor organizations are better off with a defender, prospector, or analyzer strategy than their current one.

The debate surrounding the type of strategy that a firm should pursue with respect to its competitors is well developed within the strategic management literature (Crant, 2000; Deephouse, 1999). However, both academic researchers and business practitioners continue to search for the rationale that will explain why certain strategies are successful. The position that von Bertalanfy (1930) takes is that "the same final state can

be reached from different initial conditions and in different ways” (von Bertalanfy: 1960: 84). The reader should note that von Bertalanfy does not argue that all of the different approaches **will** reach the same final state. Thus, the how and why certain firms can reach a final state, such as performance or effectiveness, is an interesting question for future re-

search. An important question is whether there is a one best way or can multiple approaches yield the desired outcome. The notion of equifinality suggests that a variety of approaches can yield success while conventional wisdom seems to recommend the one best way. Hopefully, this study will provide fertile ground for further research on the notion of equifinality.

APPENDIX 1

DEFINING STRATEGY*

Listed below are four primary strategies utilized by firms. Each of these strategies is neither better nor worse than another. **CIRCLE THE ONE** that best describes your firm's strategy:

1. This type of firm attempts to locate and maintain a secure niche in a relatively stable product or service area. The firm tends to offer a more limited range of products or services than its competitors, and it tries to protect its domain by offering higher quality, superior service, lower prices and so forth. Often this type of firm is not at the forefront of developments in the industry—it tends to ignore industry changes that have no direct influence on current areas of operation and concentrates instead on doing the best job possible in a limited area.
2. This type of firm typically operates within a broad product-market domain that undergoes periodic redefinition. The firm values being “first in” in new product and market areas even if not all of these efforts prove to be highly profitable. The firm responds rapidly to early signals concerning areas of opportunity, and these responses often lead to a new round of competitive actions. However, this type of firm may not maintain market strength in all of the areas it enters.
3. This type of firm attempts to maintain a stable, limited line of products/services, while at the same time moving out quickly to follow a carefully selected set of the more promising new developments in the industry. The firm is seldom “first in” with new products/services. However, by carefully monitoring the actions of major competitors in areas compatible with its stable product-market base, the firm can frequently be “second in” with more cost-efficient product/services.
4. This type of firm does not appear to have a consistent product-market orientation. The firm is usually not as aggressive in maintaining established products and markets as some of its competitors, nor is it willing to take as many risks as other competitors. Rather, the firm responds in those areas where it is forced to, by environmental pressures.

* See “APPENDIX: Measure of Strategy Type,” of C.C. Snow and L.G. Hrebiniak (1980:336).

APPENDIX 2

DEFINING PERFORMANCE

Please evaluate your firm, **relative to your major competitor**, on the following performance measures. For each item, please circle the number that best represents your opinion.

	Much Higher than Competitors	4	About the Same	3	2	Much lower than Competitors
1. Earnings growth rate	5	4	3	2	1	
2. Sales growth rate	5	4	3	2	1	
3. Return on investment	5	4	3	2	1	
4. Return on sales	5	4	3	2	1	

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tives in which the system can be analyzed and solutions proposed. The focus in this study is on a single dyad within the distribution channel—the physician and insurance provider. Two complementary research methods are used at one representative physician practice to test the applicability of the channel framework in this setting. Interviews with healthcare administrators demonstrate the correspondence between fundamental variables inherent in the traditional channel partnership and the physician-insurer provider relationship. Using patient level billing records, data were then collected to determine the extent to which environmental characteristics present in traditional channel relationships are present in the physician-insurance provider dyad. The findings support the applicability of the channel framework to the healthcare funding system.

Strategy-Performance Relationships in Service Firms: A Test for Equifinality	208
<i>Daniel F. Jennings, Daniel Rajaratnam and F. Barry Lawrence</i>	

In this study, we have examined the issue of equifinality by analyzing strategy-performance relationships in firms from six different service industries. Our results indicate there is no significant difference in the performance of organizations with either a prospector, defender, or analyzer strategy. Organizations with a reactor strategy, however, had a lower level of performance than did those organizations with a prospector, defender, or analyzer strategy. Implications for future research and practice are discussed.

Productivity Increases Due to the Use of Teams in Service Garages	221
<i>Lawrence D. Fredendall and Charles R. Emery</i>	

This study examined whether self-directed work teams increased productivity in automobile service garages. It also examined whether the type of leadership and the type of compensation system moderated the effect of teams on productivity. It was found that service garages, which used self-directed teams, increased their productivity, compared to service garages that did not use teams. However, productivity