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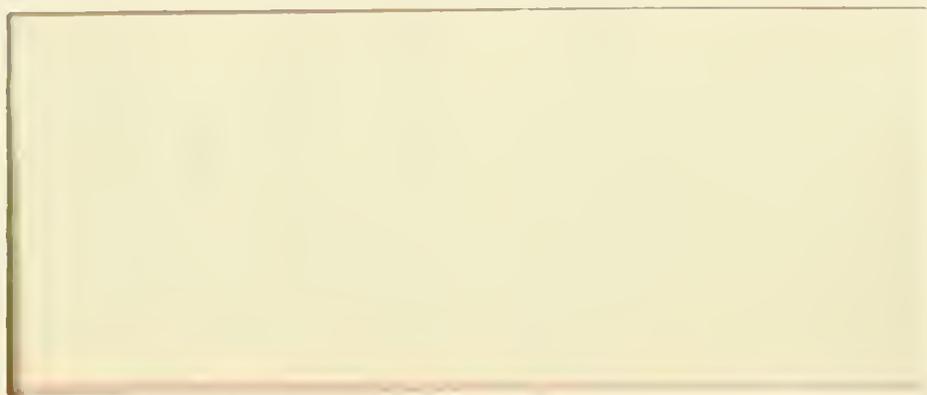
On the Measurement of Business Performance in
Strategy Research: A Comparison of Approaches

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Vasudevan Ramanujam

December 1985

WP #1737-85

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Abstract

A two-dimensional classificatory scheme highlighting ten different approaches to the measurement of business performance in strategy research is developed. The first dimension concerns the use of financial versus broader operational criteria, while the second focuses on two alternate data sources, i.e., primary versus secondary. The scheme permits the classification of an exhaustive coverage of measurement approaches and is useful for discussing their relative merits and demerits. Implications for operationalizing business performance in future strategy research are discussed.

The notion of performance is a recurrent theme in most branches of management, including strategic management and is of interest to both academic scholars and practicing managers. While prescriptions for improving and managing organizational performance are widely available (see for instance Nash, 1983), the academic community has been preoccupied with discussions and debates around issues of terminology, levels of analysis (i.e., individual, work-unit, or organization as a whole), and conceptual bases for assessment of performance (see Ford & Schellenberg, 1982).

Although the importance of the performance concept (and its broader notion of organizational effectiveness) is widely recognized (see especially Campbell, 1977; Connolly, Conlon & Deutsch, 1980; Goodman & Pennings, 1977; Hannan, Freeman & Meyer, 1976; Kirchoff, 1977; Steers, 1975; 1977; Yuchtman & Seashore, 1967), the treatment of performance in research settings is perhaps one of the thorniest of issues confronting the academic researcher today. With the volume of literature on this topic continually increasing, there appears to be little hope of reaching any agreement on basic terminology, and definitions. Some have expressed considerable frustration with this concept. In a recent review, Kanter and Brinkerhoff articulated this pessimism as follows: "Some leading scholars have expressed impatience with the very concept of "organizational effectiveness," urging researchers to turn their attention to more fruitful fields" (1981; p. 321).

The Importance of Business Performance in Strategic Management

For the strategy researcher, the option to move away from defining (and measuring) performance or effectiveness is not a viable one. This

is because performance improvement is at the heart of strategic management. More formally, the importance of business performance in strategic management can be argued along three dimensions -- viz, theoretical, empirical, and managerial (Cameron & Whetten, 1983a). Theoretically, the concept of business performance lies at the center of strategic management. Most strategic management theories either implicitly or explicitly underscore performance implications, since performance is the time test of any strategy (Schendel & Hofer, 1979). Empirically, most strategy research studies employ the construct of business performance to examine a variety of strategy content and process issues (see Ginsberg & Venkatraman, 1985 for an analytical review of the extent to which the empirical studies reflect the performance dimension). The managerial importance of business performance is all too evident in the many prescriptions offered for performance improvement (e.g., Nash, 1983). The increasing volume of research on corporate turnarounds (e.g., Hofer, 1980; Ramanujam, 1984) and organizational transitions attests to the interest in the strategy field in issues of organizational performance, adaptation and survival.

Circumscribing the Concept of Business Performance

The important role of business performance in strategic management warrants close attention to the topic of conceptualization and measurement of business performance. However, in view of the breadth and complexity of the topic, we circumscribe the scope of the discussion (a) by adopting the perspective of the field of strategic management field, and (b) focusing on measurement issues.

The Underlying Perspective of Strategic Management. The adoption of a disciplinary focus is deliberate since a multi-disciplinary perspective is unlikely to move the discussion on measurement beyond highlighting the fundamental differences in terminology and assumptions existing among the various disciplines. We concur with Hofer (1983) that "...it seems clear that different fields of study will and should use different measures of organization performance because of the differences in their research questions." (For a comprehensive discussion on the "determinants" of organizational performance from a multi-disciplinary perspective, readers are directed to Lenz, 1981).

Adopting a Measurement Focus. Similarly, our focus on measurement issues is a conscious one and is in line with Steers' work on measurement of organizational effectiveness. Steers argued that "a meaningful way to understand the abstract idea of effectiveness is to consider how researchers have operationalized and measured the construct in their work (1975; p. 546)." Although any treatment of measurement issues independent of conceptual and definitional issues is likely to be incomplete, there exists a belief among some researchers that a critical evaluation of the measurement approaches leads to an improved understanding of the underlying constructs (Cameron & Whetten, 1983b; Steers, 1975). As Cameron & Whetten noted, "Constructs such as intelligence, motivation, or leadership --whose construct space, by definition, also is not bounded-- have been better understood as limited aspects of their total meaning having been measured... In assessing organization effectiveness, a similar attack seems appropriate, that is, to concentrate on measuring limited domains of the construct (1983b; p. 267)."

Thus, this paper aims to classify the different approaches to the measurement of business performance in strategy research and highlight

the benefits and limitations of each approach. It is intended to complement recent discussions on the operationalization of key strategic management concepts such as organizational strategy (Ginsberg, 1984; Snow & Hambrick, 1980), business-level strategies (Hambrick, 1980), diversification patterns (Pitts & Hopkins, 1982) and organizational slack (Bourgeois, 1981).

Measurement of Business Performance: A Classificatory Scheme

An important issue to be addressed in the process of developing a classificatory scheme for highlighting measurement approaches is to delineate the domain of the performance concept. More specifically, the question is whether the treatment of business performance should be differentiated from the overall discussion on organizational effectiveness. In a recent comprehensive discussion on organizational effectiveness, Cameron and Whetten noted that

"...As a construct, organizational effectiveness is similar to an unwrapped terrain, where the responsibility lies with the investigator to chart it. (1983a; pp. 19-20; emphasis added)."

Our view in this paper is that "business performance," which reflects the perspective of strategic management, is a subset of the overall concept of organizational effectiveness. Figure 1 provides a schematic for circumscribing the domain of business performance in terms of the scope of coverage in the concept's domain.

The narrowest conception of business performance centers on the use of simple outcome-based financial indicators that are assumed to reflect

INSERT FIGURE 1 ABOUT HERE

the fulfillment of the economic goals of the firm. We refer to this concept as financial performance, which has been the dominant model in empirical strategy research (Hofer, 1983). Typical of this approach would be to examine such indicators as sales growth, profitability (reflected by ratios such as return on investment, return on sale, and return on equity), earnings per share, etc. In addition, reflecting the popular and current view that "market" or "value-based" measurements are more appropriate than accounting-based measures (Hax & Majluf, 1984), some strategy studies have employed such measures like market-to-book or stock-market returns and its variants (e.g., Kuala, 1980; Montgomery, Thomas & Kamath, 1984). Extending such a tradition, one can possibly employ measures such as Tobin's Q -- the ratio of the market value of a firm to the replacement cost of its assets (Lindberg & Ross, 1981). Nevertheless, this approach remains very much financial in its orientation and assumes the dominance and legitimacy of financial goals in a firm's system of goals.

A broader conceptualization of business performance would include emphasis on indicators of operational performance (i.e., non-financial) in addition to indicators of financial performance. Under this framework, it would be logical to treat such measures as market-share, new product introduction, product quality, marketing effectiveness, manufacturing value-added, and other measures of technological efficiency within the domain of business performance. Similarly, market share position, widely believed to be a determinant of profitability (Buzzell, Gale & Sultan, 1975) would be a meaningful indicator of performance within this perspective. The inclusion of operational performance indicators takes us beyond the "black box" approach that seems to characterize the exclusive use of financial indicators and focuses on those key operational success factors that might lead to financial performance.

If we now superimpose multiple and conflicting nature of organizational goals (Cameron & Whetten, 1983 a,b) and the influence of multiple constituencies or "stakeholders", we move towards reflecting the writings on organizational effectiveness. Perhaps due to the breadth of this discourse, this literature is plagued with debates on appropriate models of measurement (Cameron & Whetten, 1983a, Steers, 1975). Although we welcome a broader conceptualization, it appears that most strategy studies have restricted their focus to the first two "circles" in Figure 1.

While business performance can be measured using the financial indicators, operational indicators, or both, a further issue in its operationalization is the sources of data. The sources of performance data have either been primary (e.g., data collected directly for organizations) or secondary (e.g., data from publically available records). Using the conceptualization of business performance (financial versus operational indicators) and data sources (primary versus secondary) as two basic, but different concerns in the overall process of measuring business performance, a four-celled classificatory scheme (shown in Figure 2) is developed.

Figure 2 presents four "within cell" approaches (numbered 1 through 4) and six "across cell" approaches -- covering two adjacent cells (labeled A through F). These together represent ten basic alternate approaches available for measuring business performance. Measurement approaches encompassing more than two cells can be depicted as combinations of these basic approaches and are not treated separately. The ten basic approaches are briefly discussed below under two general headings -- "within-cell" and "across-cell" approaches.

INSERT FIGURE 2 ABOUT HERE

Within-Cell Approches

As Figure 2 indicates, four of the ten approaches are restricted to operationalizations within a particular cell. For example, in Cell 1, the operationalizing scheme for business performance entails the use of financial performance data obtained from secondary sources (e.g., Beard & Dess, 1981; Rumelt, 1974), while in Cell 2, the focus is on eliciting financial data directly from target organizations (e.g., ROI in PIMS - based studies). In Cells 3 and 4, the focus is on operational indicators collected from secondary sources (e.g., market share data in Schendel & Patton, 1978) and primary sources (e.g., data on market share positions in PIMS-based studies) respectively. It is readily apparent that these four approaches have a narrow perspective on the notion of business performance. Consequently it is encouraging to note that only a few attempts at operationalizing business performance in strategy research have been restricted to "within cell" approaches.

Across-Cell Approaches

The other six approaches, labeled (A) through (F) represent significant improvements in the quality of operationalizations. They either (a) reflect a broader conceptualization of the construct space of business performance; or (b) address methodological concerns of convergence of operationalizations across distinct methods. These are discussed below.

Broader Conceptualization of the Construct Space. In Figure 2 the approaches denoted by (B) and (D) reflect theoretical considerations of employing a broader construct space. An illustration of the measurement approach (B) can be seen in Schendel and Patton's (1978) development of a simultaneous-equation model of corporate strategy. There, the authors focused on multiple performance criteria such as return on equity (ROE), market share, and efficiency. Financial measures (i.e., ROE) and

operational measures (i.e., market share and efficiency) were assembled from the COMPUSTAT data base, a widely-used secondary data source for strategy research (see Glueck & Willis, 1979). These were supplemented by other secondary data on the brewing industry.

The measurement approach denoted as (D) is similar to (B), with a focus on both financial and operational indicators, but the difference is that data are obtained from primary sources. The studies by Bourgeois (1980) and Gupta and Govindarajan (1984), which collected perceptual primary data on both financial and operational indicators of performance exemplify this approach. Woo and Willard's (1983) use of the PIMS data base to explicate the underlying dimensions of performance is another good illustration of this approach.

Convergence of Methods. The approaches denoted as (A) and (C) reflect the need to assess method convergence across different data sources or methods. Such an assessment is in line with Campbell and Fiske's (1959) development of the Multi-Trait, Multi-Method (MTMM) framework. When the data obtained from primary and secondary sources are generally in agreement, there is strong support for the operationalization of constructs, especially since there is a belief that managers may be biased when reporting their performance levels. An illustration of the use of the approach (A) can be seen in a study by Venkatraman and Ramanujam (1985). Data on three performance indicators --sales growth, profit growth, and ROI-- were collected from two different data sources --primary assessments by executives, and published secondary data. Analysis of the data indicated that the two approaches are significantly correlated, thus providing support for the convergent validity of the measures.

The measurement approach labeled (C) is analogous to (A) except that the focus is on operational indicators rather than financial indicators. Again, the aim is to assess the degree of method-convergence. However, our review indicates that this approach has not yet been widely adopted. Presumably, this is because of the difficulties in obtaining secondary data on operational indicators like market share that are largely free of aggregation biases and definitional problems.

Other Approaches. The measurement approach termed (E) calls for collecting data on financial indicators from secondary sources and on operational indicators from primary sources. Such an approach is appropriate when a broader conceptualization of business performance is needed for addressing specific research questions, but data on financial performance may not be forthcoming from primary sources due to reasons of confidentiality and sensitivity. On the other hand, measurement approach (F), the converse of (E), calls for financial data from primary sources and operational data from secondary sources. Although conceptually a feasible approach, it is unlikely to be employed for the simple reason that if financial data are forthcoming from primary sources, it is also likely that operational data could be obtained from the same source. Indeed, obtaining data on operational indicators from other sources would raise issues such as compatibility, and the possible confounding of levels of analysis (such as firm-level and SBU-level).

Implications for Operationalizing Business Performance

The development of both descriptive and normative theories of strategy (focused on both content and process issues) must continue to be firmly rooted in explaining differences in performance results (Schendel & Hofer, 1979). Thus business performance is an important concept in

strategic management. In striving towards understanding the complex issues involved in operationalizing this concept, this paper has developed a classificatory scheme that highlights major approaches for measuring business performance. Irrespective of whether business performance is conceptualized broadly or narrowly, at the corporate-level or at the business-level, in absolute or relative terms, the available measurement approaches can be described using the two distinguishing characteristics, viz., (i) whether the concept's domain includes indicators relating to financial, operational, or both, and (ii) whether the data are obtained from primary, secondary, or both sources.

A classificatory scheme such as the one presented in Figure 2 is useful, in two ways. One, it serves as basis to compare and contrast different measurement approaches. Towards this end, the key benefits and limitations of the ten measurement approaches developed in the previous section are summarized in Table 1. In addition, the table contains key methodological issues and illustrative studies adopting these approaches.

INSERT TABLE 1 ABOUT HERE

Two, it aids the development of a set of recommendations for strategy researchers to consider in the process of operationalizing business performance. Three major implications can be derived from the classificatory scheme depicted in Figure 2, and the benefits and limitations summarized in Table 1. First, operationalizing business performance using the "within-cell" approaches should be avoided to the extent possible. However, in cases where only the "within cell" approaches are feasible, serious attention to the methodological issues listed in Table 1 would enhance the quality of operationalization. For example, if the

study focuses on firm-level strategies (as opposed to SBU-level), the use of secondary sources to operationalize financial performance may be appropriate.

The second implication relates to enlarging the construct space of business performance, and the third implication calls for attention to convergence across multiple methods of data collection. These implications raise a set of issues and questions -- which are discussed below.

Enlarging the Construct Space: The Issue of Dimensionality

The adoption of measurement approach (B) or (D) reflects a need to conceptualize the domain of business performance in terms broader than economic performance. When such a measurement approach is adopted, it is necessary to be particularly sensitive to the issue of dimensionality of business performance. This is because a uni-dimensional composite of a multi-dimensional concept such as business performance tends to mask the underlying relationships among the different subdimensions. Strategy researchers' attention has been repeatedly drawn to the conflicting nature of performance dimensions such as long-term growth and short-term profitability, and the associated problems of combining them into one composite dimension of performance. Schendel and Patton (1978) highlight the need to make differential resource allocations depending upon the desired performance outcome, viz., ROE, market share, or efficiency, while Kirchoff and Kirchoff (1980) provide an empirical illustration of the dilemma of pursuing differential (and sometimes, conflicting) strategies to achieve long-term and short-term performance results.

The dimensionality issue is more formally addressed in a recent study by Woo and Willard (1983). They employed a factor-analytic framework using performance data from the PIMS program. An analysis of

14 indicators, covering both financial and operational facets of business performance, yielded four primary dimensions -- (i) profitability/cash flow; (ii) relative market position; (iii) change in profitability and cash flow; and (iv) revenue growth. While Woo and Willard's (1983) study established the multi-dimensional nature of business performance when conceptualized using financial and operational indicators, Venkatraman and Ramanujam (1985) cautioned that even within the domain of financial performance, indicators such as sales growth, net income growth, and ROI should not be combined to form one composite dimension, as they seem to reflect distinct dimensions.

The implication of the above discussion is that researchers should collect data on indicators of business performance either using an a priori classification which recognizes the dimensionality issue, or they should explicitly test the dimensionality of their conceptualization of business performance. This is especially critical in view of the enlarged domain of business performance discussed here is adopted and both financial and operational aspects of business performance are included using measurement approaches (B) or (D).

Assessing Method Convergence: Choosing an Efficient Method

The adoption of measurement approach (A) or (C) by using different data sources implies a fundamental motivation to examine convergence between data from alternate sources. A key data-analytic issue, then, is: How does one evaluate the degree of convergence of operationalization? The most common approach is based on the magnitude and the level of statistical significance of the correlation between the two sets of data. Such an approach underlies Campbell and Fiske's (1959) criterion for convergent validity in the MTMM matrix that the correlation (i.e.,

validity) coefficients should be "sufficiently large" and statistically different from zero. However, an MTMM analysis does not address the relative efficiency of alternate methods. This is important since researchers examining convergence between measures to assess the quality of their operationalizations may elect to use one or the other, but not necessarily both, when subsequently examining theoretical relationships.

The relative efficiency or interchangeability of alternate measures can be assessed in at least two ways. One calls for checking whether the two measures are not only correlated but also proportional to each other, since a positive correlation between the two measures is a necessary but not a sufficient condition for the interchangeability of measures (Smyth, Boyes & Peseau, 1975). The other method calls for employing the two measures as alternate operationalizations with the same measurement model. By evaluating the measurement model with the restricted condition of equivalence of measures and comparing it with an unrestricted model, the appropriateness of the equivalence criterion can be ascertained (see Bagozzi, 1980 for a discussion).

If the interchangeability condition is not satisfied, the researcher is faced with the task of deciding between alternate operationalizations. While one could base the decision on one gut-feel and intuition about the data quality, a more systematic approach is to examine the level of measurement error in the different operationalizations. This can be analyzed using structural equation models (see Joreskog & Sorbum, 1979 for an overview of this approach and Bagozzi, 1980 for illustrations comparing levels of measurement error in different operationalizations). An illustration which is more germane to the present discussion can be seen in Venkatraman and Ramanujam (1985) -- where the structural equation approach was used to establish the relative superiority of data from one

source over corresponding data from the other source. A systematic evaluation of method efficiency was accomplished in that study for different dimensions of business economic performance.

Non-Convergence as a Source of Opportunity. While the above discussion is relevant when data across multiple methods do converge at some acceptable level of association, what is the researcher to infer if convergence between different operationalizations is not observed? Does that imply that the performance data at hand is "inferior", or are the differences attributable to aspects such as the definition of performance or the level of aggregation? As Jick noted, "When different measures yield dissimilar results, they demand that the researcher reconcile the differences somehow. In fact, divergence can often turn out to be an opportunity for enriching the explanation" (1979; p. 607).

Researchers can pursue at least two different courses at this stage. One is the methodological option of decomposing the variance in measurement into trait, method, and random error components (Joreskog & Sorbum, 1979), which is useful for testing if systematic biases due to method differences are contributing to the observed lack of convergence. The other option is a conceptual one, which attempts to ascertain see if definitional differences or aggregation problems could have contributed to the observed result. By pursuing both options simultaneously, significant improvements can be made in subsequent efforts at operationalizing business performance.

Summary

Although problems of a conceptual nature continue to underly much of the discussion on organizational performance, its use as a key construct in strategy research studies has continued unabated. Strategic

management researchers, in their quest for establishing performance implications of strategic conduct of businesses, continue to measure business performance using a wide array of operationalizing schemes. Motivated by the belief that systematic approaches to measurement approaches are likely to lead to superior operationalizations, this paper classified and highlighted the advantages and limitations of different measurement approaches. In addition, specific data-analytic issues and their implications for operationalizing business performance are highlighted.

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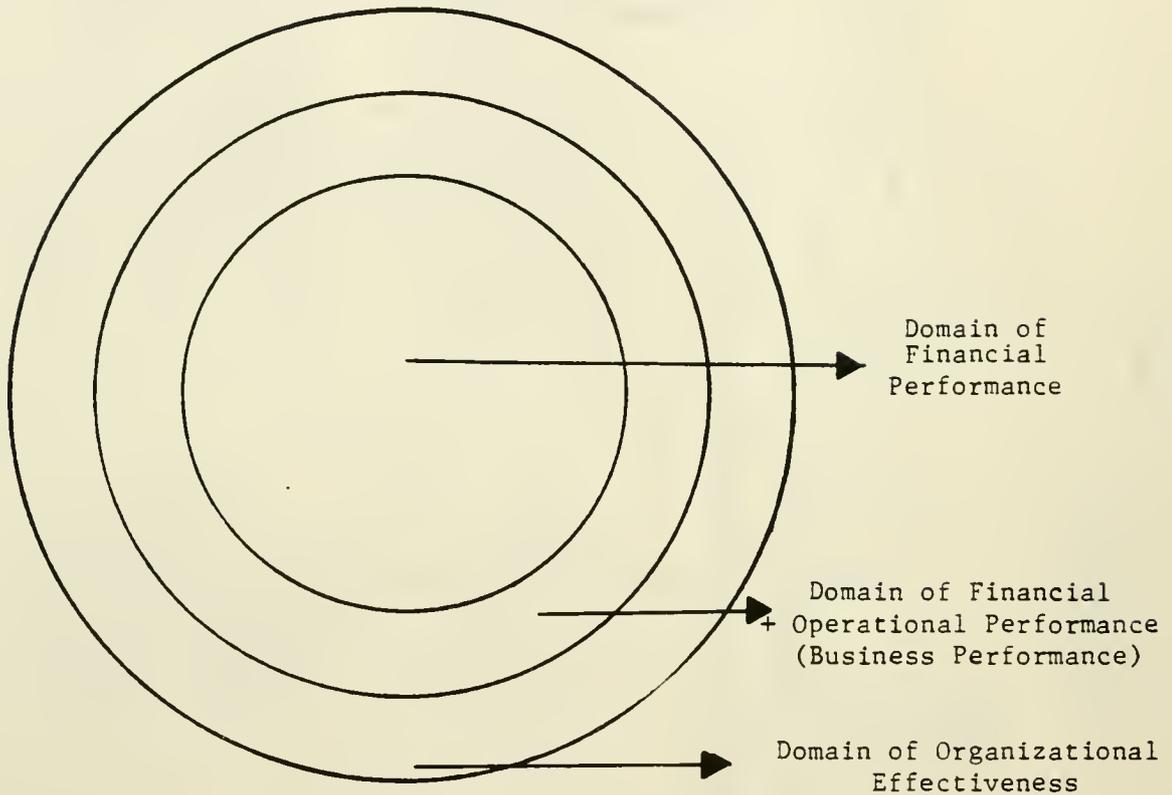
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Figure 1

Circumscribing the Domain of Business Performance

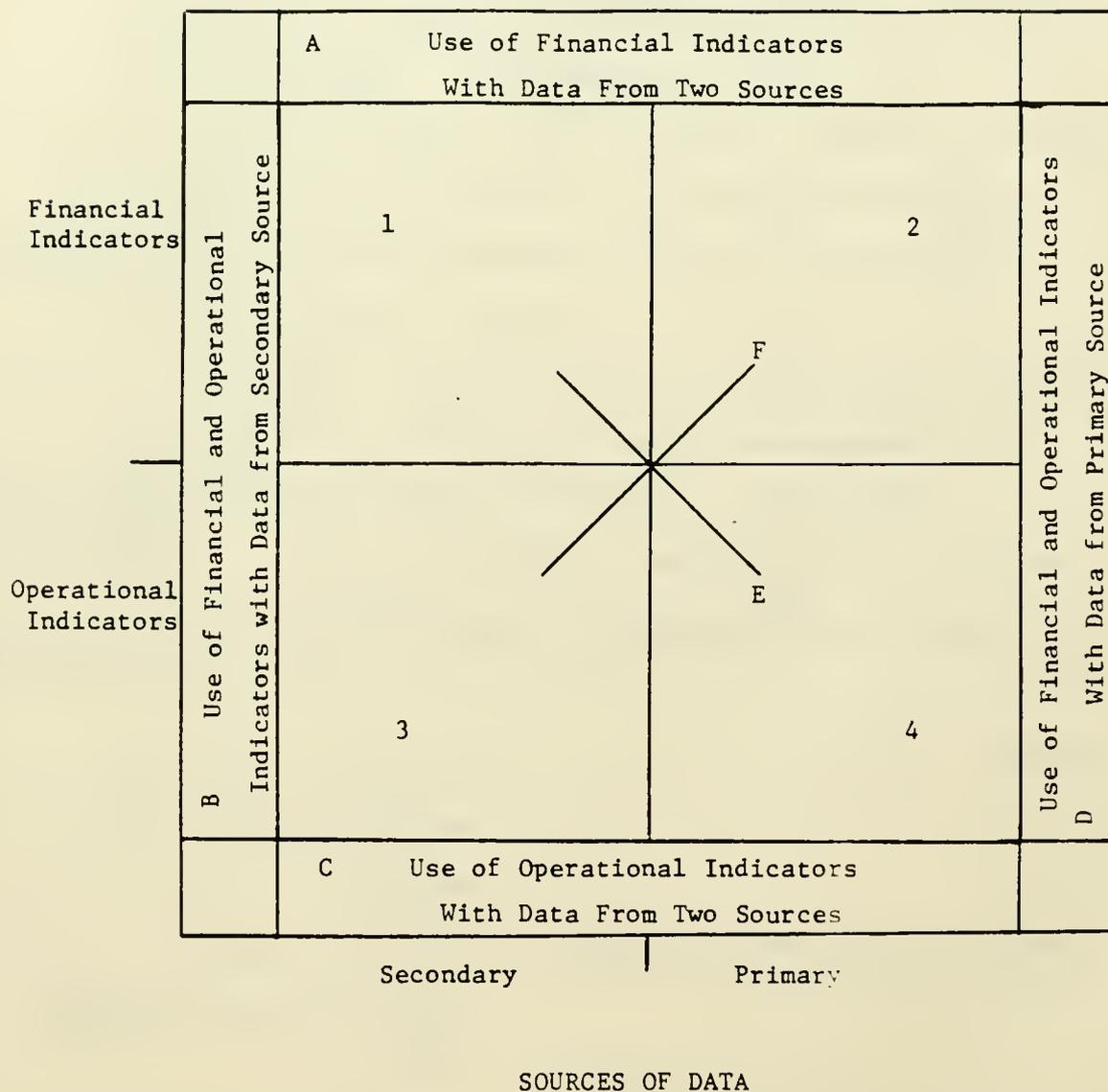


- Financial Performance -- The domain of performance construct in most strategy research.
- Financial + Operational Performance -- The enlarged domain reflected in recent strategy research.
- Organizational Effectiveness -- The broader domain reflected in most conceptual literature in strategic management and organization theory.

Figure 2
A Scheme for Classifying Alternate
Approaches for Measuring Business Performance

CONCEPTUALIZATION OF BUSINESS PERFORMANCE

IN TERMS OF ...



Note:

- E - Use of financial data from secondary sources and operational data from primary sources
- F - Use of operational data from secondary sources and financial data from primary sources

TABLE 1
BENEFITS AND LIMITATIONS OF ALTERNATIVE APPROACHES FOR MEASURING BUSINESS PERFORMANCE

CATEGORY	DESCRIPTION	BENEFITS	LIMITATIONS	KEY METHODOLOGICAL CONSIDERATIONS WHEN USING THIS APPROACH	ILLUSTRATIVE STUDIES REFERENCE
1	Financial data from secondary sources	<p>(a) Provides data on financial aspects, which may not be otherwise available;</p> <p>(b) Can be used especially in single/dominant business type sample, and in "within-industry" studies.</p> <p>(c) Possibility of employing stock-market indicators of performance.</p>	<p>(a) Differences in accounting policies may limit its use for comparison purposes (unless stock-market indicators are adopted)</p> <p>(b) Cannot be meaningfully used at SRU level due to 'aggregation' problems.</p>	<p>(a) Examine the feasibility of using stock-market indicators as well as the measure of return on value added (ROVA) in view of its 'invariance' across industrial contexts, as noted by Hofer (1983)</p> <p>(b) Use Industry-relative performance when multiple industries are included in the sample.</p> <p>(c) Assess differences in accounting policies when feasible.</p>	<p>Rumelt (1974)</p> <p>Montgomery and Singh (1984)</p> <p>Bettis & Hall (1983)</p>
2	Financial data from primary sources	<p>(a) Provides self-reported financial data with less problems of external interpretation and aggregation of data;</p> <p>(b) Can be used at both corporate and SRU level of analysis.</p>	<p>(a) Data is likely to be biased;¹</p> <p>(b) Complete data may not be available due to confidentiality reasons.</p>	<p>(a) Choose target respondents based on specific criteria (position, function, etc.)</p> <p>(b) Use multiple respondents to examine the extent of systematic bias as well as minimize measurement error.</p>	<p>Dess & Robinaon (1984)</p> <p>(PIMS-based studies' use of ROI measure)²</p>

"Within Cell" Approaches to Performance Measurement (Refer Figure 1)

1 Although in an isolated study (Venkatraman & Ramanujam, 1985⁴), positive and statistically significant association between perceptual (primary) and secondary data on three performance indices were observed, the possibility of bias cannot be completely ruled out, and should be specifically tested in each study.

2. All the PIMS-based strategy studies are not separately listed. For a review see Ramanujam and Venkatraman (1984)

TABLE 1 (continued)

CATEGORY	LABEL	DESCRIPTION	BENEFITS	LIMITATIONS	KEY METHODOLOGICAL CONSIDERATIONS WHEN USING THIS APPROACH	ILLUSTRATIVE STUDIES REFERENCE
(continued) Approaches	3	Operational data from secondary sources	(a) Provides performance data when financial data may either be not available or may be inappropriate.	(a) Problems of data availability on various indicators to develop the requisite measures; (b) Some operational data may be industry-specific and may not lend itself to multi industry studies. (c) Relationship to financial performance not known.	(a) Use industry as the reference point for developing measures. (b) Attempt to define concepts such as market-share, efficiency, etc. as consistently as possible across industries.	-market-share data in Schendel and Patton(1978)
	4	Operational data from primary sources	(a) Provides some basis to include considerations of performance in the research design; (b) Less likely to be influenced by reasons of confidentiality, sensitivity, etc.	(a) Data is likely to be biased; (b) Relationship to financial performance not known.	(a) Choose target respondents based on specific criteria (position, function, etc.) (b) Use multiple respondents to examine the extent of systematic bias as well as minimize measurement error.	-market-share data in PIMS-based studies
Approaches to Performance Measurement	A	Financial data from both primary and secondary sources	(a) Provides scope for assessing convergent validity to enhance the "quality" of measurement.	(a) Compatible data from two different data sources may not be readily available; (b) Cannot be meaningfully done when research studies are designed at the SBU level due to problems of obtaining secondary data; (c) Operational aspects of performance are not covered.	(a) Check for definitional consistency; (b) Identify reasons for non-convergence, if observed and reconceptualize the concept, if necessary. (c) Examine substitutability/interchange ability of one measure for the other. (d) Use industry referent measures in multi industry studies. (e) Evaluate the feasibility of using stock-market measures or ROVA	Venkatraman and Ramanujan (1985)

TABLE 1 (continued)

CATEGORY	LABEL	DESCRIPTION	BENEFITS	LIMITATIONS	KEY METHODOLOGICAL CONSIDERATIONS WHEN USING THIS APPROACH	ILLUSTRATIVE STUDIES REFERENCE
	B	Business performance viewed in terms of both financial and operational indicators, with data from secondary sources	<p>(a) Provides a more comprehensive operationalization of business performance;</p> <p>(b) enables one to examine the relationship between financial and operational aspects of performance.</p>	<p>(a) Inability to validate operationalizations across different data sources;</p> <p>(b) Cannot be meaningfully used at an SBU level of analysis.</p>	<p>(a) Define financial and operational indicators in industry-relative terms;</p> <p>(b) Assess differences in accounting policies;</p> <p>(c) Address the dimensionality issue both theoretically and empirically.</p>	Schendel and Patton(1978)
	C	Operational data from both primary and secondary sources	<p>(a) Provides scope for assessing convergent validity of operationalization using two different methods;</p>	<p>(a) Data availability may prove to be a key limitation;</p> <p>(b) Financial aspects of performance are not considered, and the relationships between financial and operational indicators are not known.</p>	<p>(a) Check for definitional consistency;</p> <p>(b) Identify reasons for non-convergence, if observed; and</p> <p>(c) Examine substitutability/interchangeability of operationalizations.</p>	
	D	Business performance viewed in terms of both financial and operational indicators, with data from primary sources	<p>(a) Provides a more comprehensive operationalization of business performance;</p> <p>(b) Enables one to examine the relationship between financial and operational aspects of performance also</p> <p>(c) Can also be adopted at the SBU level;</p>	<p>(a) Inability to validate operationalizations across different data sources;</p>	<p>(a) Choose target respondents based on specific criteria;</p> <p>(b) Define indicators in industry-relative terms;</p> <p>(c) Address the dimensionality issue both theoretically and empirically</p> <p>(d) Use multiple respondents to examine systematic bias due to position, level, etc., as well as minimize measurement error.</p>	<p>Burgeois(1980)</p> <p>Gupta and Govindarajon (1984)</p> <p>Woo and Willard (1984)</p>

TABLE 1 (continued)

CATEGORY	LABEL	DESCRIPTION	BENEFITS	LIMITATIONS	KEY METHODOLOGICAL CONSIDERATIONS	ILLUSTRATIVE STUDIES REFERENCE
Approaches to Performance Management (continued)	E	Financial data from secondary sources and operational data from primary sources.	(a) Provides a scheme to enlarge the conceptualization of business performance, when financial data may not be forthcoming due to reasons of confidentiality	(a) Limited use at an SBU-level of analysis;	(a) Address the dimensionality issue both theoretically and empirically	
	F	Operational data from secondary sources and financial data from primary sources.	Unlikely option since if financial data are available through primary sources, it is equally likely that operational data may also be available from the same sources.			

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