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RESEARCH NOTES AND COMMUNICATIONS

A MEASUREMENT MODEL OF STRATEGIC PLANNING

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While strategic planning is a key concept in management research, there has been little consistency in its conceptualization or measurement. Our review of prior studies also identifies reliability and validity, dimensionality, crude levels of measurement, and lack of parsimony as additional problems associated with prior use of this variable. Such problems substantially limit our ability to compare results across studies, or to make appropriate normative recommendations. We address these concerns by developing and validating a multiple indicator measure of strategic planning, using two independent samples. Implications for future research are then discussed. © 1998 John Wiley & Sons, Ltd.

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INTRODUCTION

A major criticism of the strategy domain is that researchers spend substantially more effort examining the interrelationships between variables vs. the conceptualization and measurement of individual constructs. Montgomery, Wernerfelt, and Balakrishnan (1989: 194), for example, identified 'loosely defined variables' as a major problem in empirical strategy research, and Venkatraman and Grant (1986) criticized strategy measures for their crude levels of analysis and weak assessment of validity. Similarly, Snow and Thomas (1994) concluded that inattention to construct measurement is a major impediment to the advancement of the strategy field. Thus, after 20 years, researchers are still debating how to operationalize key strategy constructs such as performance, organizational environment, or the 'relatedness' of diversification. While this bias is understandable given the application-orientation of the discipline, such practices limit the generalizability and comparability of individual studies. As such, efforts to clarify the conceptualization and measurement of key strategy constructs constitute a significant contribution to the literature.

This paper will focus on measurement issues associated with the construct 'strategic planning.' This construct is a central component of the strategy literature, and is applied in topics such as planning—performance relationships, competitive advantage, information acquisition and strategic

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decision-making, generic strategies, contingency modeling, and international studies. Our review identifies numerous inconsistencies and methodological limitations in the prior use of this construct. Our objective is to address these problems by developing and validating a measure of strategic planning. We test the dimensionality of seven planning indicators, using data from 123 executives in two samples: one sample represents nearly half of the hospitals in an eastern state, while the second sample is a highly diverse group of for-profit businesses, also from a single state. Strong support for a unidimensional 7-indicator model is found through multiple tests on both samples. Finally, recommendations for future research are discussed.

LITERATURE REVIEW

While the term 'strategic planning' is the cornerstone for an entire discipline, there is remarkably little consistency in its operationalization. One cause of this problem is the discipline's general preference towards examining interrelationships among variables over definition of the variables themselves. A second explanation is that many researchers choose to focus on more specific areas—e.g., to examine the differences among and consequences of different strategies, vs. the implications of overall strategic planning. Still, the strategic planning variable is an important component in a broad array of research topics. Given the centrality of this variable to strategy research, problems associated with the conceptualization and measurement of strategic planning have implications for the entire discipline. The potential for substantial measurement error makes it difficult to adequately compare and generalize results across studies, or to make appropriate normative guidelines. The following sections explore these concerns by addressing two interrelated issues: first, we identify limitations of studies which have used empirical measures of strategic planning; second, we review normative literature to develop multiple indicators of the planning process.

The strategic planning construct has been used by researchers for over two decades, and is generally one element of a larger analysis or model. Consequently, the development of a common conceptualization and measurement scheme has received only sporadic attention. Table 1 describes representative empirical studies which have used the strategic planning construct. The table was compiled from studies known to the authors, and from scanning the last 10 years of several academic journals. We identified five problems associated with prior use of this construct.[1] First, inconsistent measurement schemes have been used to describe and operationalize strategic planning. Planning has been characterized by numerous labels, and inconsistencies are found both within and across labeling schemes—i.e., studies using the same labels frequently use different indicators, and the same indicators are also used to represent multiple labels. Second, while planning is most frequently conceptualized as unidimensional, it has also been conceptualized with two, three, and even seven dimensions. More critically, the vast majority of prior studies make *a priori* assumptions regarding dimensionality which are never tested. Third, studies often collapse interval or ratio level indicators to nominal or ordinal categories. The consequences of this transformation from a finer to cruder level of analysis include the loss of information and statistical power, limiting the ability to effectively test hypotheses. Additionally, the use of index or categorical measures may not adequately reflect the breadth of the planning construct and the potential for substantial measurement error (e.g., Boyd, 1991; Pearce, Freeman, and Robinson, 1987). Fourth, most of the prior studies do not report tests of the reliability or validity of their measures. One consequence of low reliability is attenuation, which may cause researchers to underestimate the 'true' relationship between two theoretical variables (Boyd, 1991; Venkatraman and Grant, 1986). The last concern with prior studies is parsimony. Since the willingness of executives to participate in research is partially driven by survey length, a planning measure must balance precision vs. parsimony. Of studies in Table 1, the typical instrument consisted of 14 items, and four of these studies used between 19 and 45 indicators to operationalize planning.

In summary, prior approaches to measuring

[1] Such problems have been addressed in several papers, both at a general level (e.g., Venkatraman and Grant, 1986) and specifically in the context of planning (e.g., Pearce, Freeman, and Robinson, 1987). Consequently, these points are only briefly summarized here.

Table 1. Comparison of relevant studies

Author	Focus	Planning definition	Level	Dimensions	Indicators	Dimensionality tests	Reliability/ validity
Acklesberg and Arlow (1985)	Performance	Formality and analytical	Nominal/ interval	2	6	Factor	Alpha
Bracker *et al.* (1988)	Performance	Sophistication	Ordinal	1	8	None	Reliability
Bracker and Pearson (1986)		Sophistication	Ordinal	1	8	None	None
Capon *et al.* (1994)	Performance	Sophistication	Ordinal	1	500	None	None
Dyson and Foster (1982)	Participation	Effectiveness	Ordinal	1	11	None	None
Fredrickson and Mitchell (1984)	Decision processes	Comprehensiveness	Interval	1	43	None	None
Ginter *et al.* (1985)	Descriptive	Process	Interval	1	8	None	None
Grinyer *et al.* (1986)	Contingency	Factors	Interval or ratio	4	19	Factor	None
Javidan (1984)	Performance	Extensiveness	Ordinal	1	11	None	None
Kukalis (1991)	Performance	Completeness and Areas	Ordinal	2	19	None	Reliability
Leontiades and Tezel (1980)	Performance	Importance	Interval	1	1	None	Validity
Lindsay and Rue (1980)	Performance	Completeness	Ordinal	1	14	None	None
Miller (1987)	Contingency	Rationality	Interval	3	12	Factor	Alpha
Miller *et al.* (1988)	Contingency	Analysis	Interval	1	5	None	Alpha
Odom and Boxx (1988)	Performance	Sophistication	Ordinal	1	6	None	None
Pearce, Robbins and Robinson (1987)	Performance	Formality	Ordinal	1	6	None	Validity
Powell (1992a)	Competitive advantage/ contingency	Goal setting, scanning and analysis	Interval	3	11	None	Alpha
Powell (1992b)	Contingency	Comprehensiveness	Interval	1	11	None	Alpha
Priem *et al.* (1995)	Contingency	Rationality	Interval	3	12	None	Alpha
Ramanujam & Venkatraman (1987)	Effectiveness	Systems	Interval	6	34	None	Alpha
Ramanujam *et al.* (1986)	Performance	Design elements and organizational context	Interval	7	45	None	Alpha
Rhyne (1985)	Information use	Openness	Ordinal	1	8	Factor	Alpha
Robinson and Pearce (1983)		Formality	Ordinal	1	3	None	None
Shortell and Zajac (1990)	Generic strategies	Formality and innovativeness	Interval	2	6	Factor	None
Sinha (1990)	Decision-making	Formality	Interval	2	2	None	Validity
Veliyath and Shortell (1993)	Generic strategies	Characteristics	Interval	5	12	Factor	Alpha
Venkatraman and Ramanujam (1987)	Planning effectiveness	Capabilities	Interval	1	12	Confirmatory factor	Reliability and validity
Welch (1984)	Performance	Strategy	Nominal	1	5	None	None

planning have used inconsistent terminology, and have numerous methodological limitations. These limitations substantially limit our ability to assess and integrate prior empirical work. Desirable characteristics of a planning measure, then, would include tests for dimensionality, demonstration of reliability and validity, and have a parsimonious number of indicators. A final criteria—content validity—also requires that a proposed measure be grounded in theory. We address this criterion next.

As seen previously, numerous approaches—at both conceptual and operational levels—have been used to develop measures of strategic planning. However, such discordance is not unusual in the strategy domain. Organizational environment, for example, has been variously characterized as objects, elements, attributes, and perceptions. Consequently, the first step in developing a model of strategic planning is to specify the underlying framework from which to operationalize measures. Most approaches to measuring strategic planning are rooted in the 'grand strategy' vs. 'incremental' perspectives.[2] That is, researchers have usually developed indicators intended to reflect how closely a firm's planning activities reflect those developed by normative strategy literature. A typical example of the latter is a common four-step model of the planning process: specify objectives, generate strategies, evaluate strategies, and monitor results. Researchers in most studies select aspects of that process—e.g., mission statements, trend analysis, long- and short-term goals, and organizational control systems—to operationalize planning. While the choice of indicators has varied widely across studies, most studies generally define planning as the formality or importance associated with those indicators (Pearce, Freeman, and Robinson, 1987). However, a minority of studies have chosen to measure planning as skills and abilities vs. aspects or elements: Venkatraman and Ramanujam (1987), for example, operationalized planning with skills such as adaptability, innovativeness, and motivation. Thus, to be consistent with the bulk of prior research, we defined strategic planning as a normative process. To ensure the content, or face validity, of our proposed measure, we conducted an extensive review of literature on the strategic planning process. From our review, we identified the following items as key indicators of strategic planning: mission statements, trend analysis, competitor analysis, long-term and annual goals, action plans, and ongoing evaluation. This literature review is summarized in Table 2.

METHOD

Data were collected via mail surveys from 60 hospital executives in an eastern state. While a single-industry design has the inherent limitation regarding generalizability to other samples, this sample pool had several advantages. First, even prior to the prospect of health reform, the business environment for hospitals has become increasingly competitive, with greater emphasis on efficiency and adaptation (Cleverley and Harvey, 1992). Consequently, strategic planning has diffused widely in this industry over the last decade, and is an important component of hospital management. Second, this single-industry sample is useful for testing criterion-related validity, as we compare our results to other studies which have drawn on similar samples. Finally, evidence indicates that the hospital industry is an important and representative industry segment for studying strategy issues. Data from hospitals have been used to test an array of mainstream strategy topics, including strategy typologies, boundary spanning, executive succession, organizational adaptation, and corporate governance.

Hospital chief executives of an eastern state were identified using the *American Hospital Association Guide to the Health Care Field.* Prior to the survey mailing, each chief executive received a letter from the Dean of our College of Business, describing the research and urging the CEO to personally participate in the study. Participants were promised a summary analysis of planning practices among responding institutions. All surveys were followed up with a phone call, and nonrespondents received a follow-up survey mailing and a second phone call. Sixty executives, or 46 percent of the state hospital population, returned completed surveys. Three hospitals indicated that it was their policy not to respond to mail surveys. This response rate—substantially

[2] By definition, this approach limits the utility of our model to research rooted in normative vs. Mintzberg or Quinn incremental schools. However, much strategy research, and the views of many practitioners (Ginter, Rucks, and Duncan, 1985) are more closely aligned with the normative model.

Table 2. Literature summary for planning indicators

Item	Normative examples	Planning measurement examples
Mission statement	David (1989) Pearce (1982) Pearce and David (1987) *Wall Street Journal* (1994)	Ginter *et al*. (1985) Pearce, Robbins and Robinson (1987)
Trend analysis	Boyd and Fulk (1996) Fahey and Narayanan (1986) Jain (1984) Preble *et al*. (1988)	Bracker and Pearson (1986) Ginter *et al*. (1985) Kukalis (1991) Ramanujam *et al*. (1986)
Competitor analysis	Fahey and Narayanan (1986) Lenz and Engledow (1986) Prescott and Smith (1989)	Bracker and Pearson (1986) Kukalis (1991) Powell (1992a)
Long-term goals	Goold and Quinn (1990) Richards (1986)	Bracker and Pearson (1986) Kukalis (1991) Lindsay and Rue (1980) Odom and Boxx (1988) Powell (1992a)
Annual goals	Drucker (1974) Goold and Quinn (1990) Richards (1986)	Kukalis (1991) Odom and Boxx (1988) Pearce, Robbins and Robinson (1987) Powell (1992a)
Short-term action plans	Camillus (1986) Lorange (1979) Richards (1986)	Kukalis (1991) Lindsay and Rue (1980) Odom and Boxx (1988) Powell (1992a)
Ongoing evaluation	Bungay and Goold (1991) Goold and Quinn (1990) Lorange *et al*. (1986)	Bracker and Pearson (1986) Kukalis (1991) Ginter *et al*. (1985)

higher than the typical 10–12 percent response for mailed surveys to senior executives (Hambrick, Geletkanycz, and Fredrickson, 1993)—helps support the generalizability of our sample to the larger population. Thirty-five of our respondents indicated that they were the senior executive in their hospital, and all respondents were at the officer level. The 'typical' respondent had 5 years experience in their present position, and 9.4 years experience with their current employer. A comparison of our sample with nonrespondents revealed no significant differences in size, accreditation status, multihospital system affiliation, or rural/urban locations.

Measurement

Strategic planning

Respondents were asked to rate the degree of emphasis for each of the following indicators: mission statement, trend analysis, competitor analysis, long-term plans, annual goals, short-term action plans, and ongoing evaluation. Each item was measured on a 5-point scale. An example from the survey is:

> This section examines several common planning activities. Please indicate the emphasis placed on each activity within your organization:
> (a) a mission statement
> 1 2 3 4 5
> No emphasis — Moderate emphasis — Very Strong emphasis

Data were also collected for two additional variables for use in testing criterion-related validity: system affiliation and strategic orientation.

System affiliation

This variable is said to exist when two or more hospitals share a common management or ownership structure. Because of its strategic and tactical implications, system affiliation has become increasingly common, with nearly half of U.S. hospitals belonging to a multihospital system (MHS). Benefits such as scale economies and the consolidation of administrative functions have been proposed to explain the higher levels of profitability and different capital structures associated with MHS. System-affiliated hospitals have also been found to have greater board participation (Morlock and Alexander, 1986) and more boundary spanning (Fennell and Alexander, 1987) than independent hospitals. Similarly, we would expect a greater emphasis on strategic planning among system-affiliated hospitals. We coded this variable as a binary measure: '1' if the hospital is a member of an MHS, and '0' otherwise. Data on system affiliation were obtained from the *AHA Guide*.

Strategic orientation

Shortell and Zajac (1990) subsumed the Miles and Snow strategy types into a continuum of low vs. high orientation toward change: i.e., on a scale, prospectors are the high anchor, defenders are the low anchor, and analyzers are the midpoint. Three studies have linked strategic orientation to aspects of strategic planning. First, Shortell and Zajac (1990) found that planning needs—measured by planning formality, planning innovativeness, and market research—varied as a direct function of the change continuum. Similarly, Veliyath and Shortell (1993) reported that prospectors scored much higher on several strategy formulation and implementation items than did defenders. Finally, McDaniel and Kolari (1987) reported that market research was most important for prospectors, followed by analyzers, and then defenders. Thus, prior research would posit a positive relationship between the orientation toward change (as measured by the Miles and Snow continuum) and strategic planning. We operationalized strategic orientation using two indicators developed by Shortell and Zajac (1990): (1) their survey measure of orientation to change; and (2) an archival measure of the hospital's emphasis on high-tech services. The latter variable was defined as the number of high tech services as listed in the *AHA Guide*.

MEASURE EVALUATION

Summary statistics and intercorrelations for all variables are shown in Table 3. Overall, our respondents placed the most emphasis on annual goals, followed by long-term goals, the mission statement, and action plans. Competitor analysis received the least emphasis by these executives. The variability of the means, standard deviations, and intercorrelations among these variables suggests that neither compressed variance nor multicollinearity[3] is a substantial threat to the instrument. Similarly, distribution of responses on the strategic orientation measure indicates adequate variability: 62 percent of our sample were classified as analyzers, 31 percent as prospectors, and 7 percent as defenders. There were no reactors in the sample. The close similarity of this distribution to other studies (Shortell and Zajac, 1990) supports the representatives of our sample.

Test of dimensionality

We used LISREL to formally test the hypothesis that planning is a unidimensional construct. We began with a baseline null model which hypothesized that each of the seven planning variables were independent constructs. The X^2 statistic for this model was 135.76 (21 d.f.) and the X^2/d.f. ratio was 6.46, both indicating a poor fit to the data. Additional fit measures yielded a similar assessment of the inadequacy of the null model. In comparison, the single dimension factor model yielded a X^2 of 27.52 (14 d.f.), and a X^2/d.f. of 1.96. Also, the improvement in X^2 from the null is 108.18—at 7 d.f., this is a highly significant improvement in fit. The goodness-of-fit index (0.89) and root mean square residual (0.09) also indicate an adequate model. t-Values for individual factor loadings (shown in Table 3) were

[3] Additional analyses (e.g., examination of determinants and standard errors of parameter estimates, subsample analyses) also supported this conclusion.

Table 3. Descriptive statistics for variables

Sample 1: Hospital executives ($N = 60$)

	1	2	3	4	5	6	7	8	9	10
1	1.00									
2	0.23	1.00								
3	0.42	0.50	1.00							
4	0.49	0.19	0.17	1.00						
5	0.39	0.32	0.31	0.41	1.00					
6	0.34	0.35	0.37	0.35	0.66	1.00				
7	0.40	0.26	0.24	0.42	0.66	0.44	1.00			
8	0.38	0.24	0.51	–0.01	0.10	0.31	0.02	1.00		
9	0.22	0.22	0.30	0.13	0.12	0.18	0.14	0.38	1.00	
10	0.35	0.06	0.08	0.31	0.13	–0.03	0.41	–0.11	0.15	1.00
X	3.93	3.69	3.22	3.97	4.12	3.93	3.93	4.59	3.72	0.68
σ	1.00	0.90	1.15	0.85	0.85	0.81	0.81	1.54	5.07	0.47
λ	0.73	0.55	0.60	0.67	1.0	0.88	0.89	1.0	0.41	1.0
$t(\lambda)$	4.4	3.2	3.6	4.0	–	5.4	5.5	–	2.8	–

Sample 2: Cross-industry mix ($N = 63$)

	1	2	3	4	5	6	7
1	1.00						
2	0.20	1.00					
3	–0.07	0.30	1.00				
4	0.38	0.42	0.12	1.00			
5	0.32	0.30	0.11	0.39	1.00		
6	0.01	0.19	0.35	0.12	0.39	1.00	
7	0.14	0.11	0.24	0.22	0.23	0.37	1.00
X	3.68	3.77	3.95	3.90	4.46	4.05	3.82
σ	1.29	1.09	0.97	0.93	0.83	0.96	0.89
λ	0.64	0.84	0.49	0.96	1.00	0.68	0.62
$t(\lambda)$	2.49	3.07	2.00	3.30	–	2.68	2.42

Note: Correlations greater than 0.26 are significant at the $p = 0.05$ level. The following thresholds can be used to determine the significance levels of parameters:
$t \geq 2.0$, $p < 0.05$; $t \geq 2.7$; $p < 0.01$; $t \geq 3.5$, $p < 0.001$
Variable list:
1. Mission statement
2. Trend analysis
3. Competitor analysis
4. Long-term goals
5. Annual goals
6. Short-term action plans
7. Ongoing evaluation
8. Strategic orientation
9. Number of high-tech services
10. System affiliation

between 3.2 and 5.4—highly significant for a sample size of 60. However, the zeta term was 0.73. The significance of this term indicates the presence of unmeasured disturbances or the potential for other variables which could be included in the model.

Test of internal consistency

Because our respondent pool consisted of CEOs and other senior managers, it was not feasible to administer a second instrument to evaluate test–retest reliability. Additionally, Carmines and

Zellner (1979) indicate that Cronbach's alpha is a superior measure of internal consistency than test–retest or split-halves approaches. Using the intercorrelations reported in Table 3, we found an average interitem correlation among planning measures of 0.39, with a corresponding alpha of 0.82. The LISREL model described above reported a comparable reliability score of 0.74. These results are well within acceptable bounds, both in the context of organizational research, and the number of scale items.

Test of criterion validity

Criterion-related validity concerns the relationship of the survey instrument with other variables the instrument is expected to correlate with. Additionally, criterion-related validity can take two forms: *predictive validity*, where the instrument is related to a variable or event in the future; and *concurrent validity*, where the instrument is related to a contemporaneous variable or event. We evaluated concurrent validity by relating our model of strategic planning to two variables: prior empirical work would predict a positive linkage of planning emphasis with the firm's strategic orientation (Shortell and Zajac, 1990; Veliyath and Shortell, 1993) and system affiliation (Fennell and Alexander, 1987; Morlock and Alexander, 1986). The X^2 ratio for this model was 2.21, indicating a reasonable fit to the data. Goodness of fit was 0.78, and the root mean square residual was 0.12. The overall X^2/d.f. ratio for this model was also a substantial improvement over the null (i.e., system affiliation and orientation unrelated to planning). The zeta term for this model was 0.85, and indicates that significant portions of the variance in planning are unexplained. As predicted, both of the path coefficients are significant ($p = 0.05$) and in the expected direction: planning emphasis is positively linked to strategic orientation ($\gamma = 0.27,\ t = 2.15$) and system affiliation ($\gamma = 0.25,\ t = 2.3$). These findings provide strong support for the criterion-related validity of our planning measure.

Additional analyses demonstrate the value-added of our multiple indicator approach. Assuming that we chose to measure planning with a single indicator, what would be our conclusion regarding the effects of strategic orientation and system affiliation? We evaluated seven additional LISREL models, where each of the planning indicators was treated as the sole measure of planning. Not surprisingly, the seven single-indicator models provide very differing estimates of the strength and magnitudes of the effects for the two predictors. For example, the parameter estimates for strategic orientation range from 0.06 to 0.83. More importantly, in four of the seven models, the *t*-values would indicate that strategic orientation is not significantly related to planning! Similarly, three of the seven models would conclude that system affiliation is unrelated to planning. Also, a model based on a composite, or index planning tended to overestimate the effects of strategic orientation and system affiliation, relative to the multiple indicator model.

Test of generalizability

If our planning measure is in fact reliable and valid, we would also expect it to yield similar results in a very different sample. To test this proposition, we identified the 300 largest firms in a single state. These firms included a broad array of SIC industrial classes, and encompassed both public and privately held firms. Subsidiary or divisional locations were excluded. The mailing process was similar to the initial sample, except that we did not conduct a follow-up mailing. We received 63 responses, or a 21 percent response rate. The majority of the respondents indicated that their title was President or CEO, and all respondents were at the officer level. The average responding firm had annual revenues of $533 million, and ranged between $1.5 million and $1.48 billion. Respondents and nonrespondents did not differ significantly on firm size or ownership (i.e., public/private) type. Tests of dimensionality and internal consistency yielded nearly identical results as the original sample. The X^2 for the single factor solution was 26.23, goodness-of-fit was 0.89, and the root mean square residual was 0.09. Factor loadings and *t*-values (all significant) are consistent with the first sample, and are shown in Table 3. Also, the mean interitem correlation between planning variables was 0.42, and the corresponding Cronbach α was 0.84.

DISCUSSION

Research has two basic components: substantive research and construct validation research

(Schwab, 1980; Venkatraman and Grant, 1986). Most research is substantive in that it focuses on the investigation of relationships between theoretical constructs that are measured by independent and dependent variables. Construct validation research involves the relationship between measures that were designed to assess a specific concept or construct. According to Venkatraman and Grant (1986), the substantive stream has been overemphasized in strategic management at the expense of attention paid to the measurement of key constructs. Our study is an attempt to partially rectify this problem by assessing and improving upon the operationalization of strategic planning. Since the extent of planning is a central component of many strategic research streams, the ambiguity associated with the measurement of planning should be a source of concern for all strategy scholars.

Overall, our results provide strong support for the measurement properties of the strategic planning construct as represented by our model. In particular, the results indicate that strategic planning is a construct that can be reliably measured through seven indicators: mission statement, trend analysis, competitor analysis, long-term goals, annual goals, short-term action plans, and ongoing evaluation. This evidence is important because previous researchers rarely tested for dimensionality of the planning construct, nor did most studies report tests of the reliability of their measures. We conducted further analyses (not reported here) to determine whether the strategic planning construct might be a higher-order factor that would consist of one or more first-order factors which, in return, would be made up of several indicators. A higher-order factor model could not be identified, and the results of the unidimensional model suggest the best fit between the indicators and the construct. Thus, our results are consistent with the majority of studies in Table 1, which treat planning as having a single dimension. However, a few papers have treated planning as having multiple dimensions. So, one opportunity for future research is to reassess these scales—which also typically have more survey items—to compare the relative fit of single-, multiple-, and higher-order factor models.

Separately, there have been numerous orientations of prior planning measures. Our model is likely to have strong overlap with most of these—such as papers that have addressed the importance, comprehensiveness, completeness, or sophistication of planning systems. However, the quality of such planning, and the degree of middle manager involvement, are likely to be very different aspects of planning. So, additional effort in clarifying related aspects of strategic planning is warranted.

The careful development and use of multiple indicators addresses the shortcomings of single-indicator measures that were used in previous studies. While single-item scales are appropriate for simple constructs, or those with minimal potential for measurement error, (Conant, Mokwa and Varadarajan 1990: 368), such measures are of only limited value when applied to broader constructs (Nunnally, 1978). Single-item measures are more likely to contain measurement errors which can lead to attenuation or an underestimation of effects. Therefore, our multiple indicator approach is highly appropriate when measuring a broad latent construct such as strategic planning. The value of this method was demonstrated in our supplemental test of criterion validity: when planning is defined with a single indicator, we would mistakenly conclude that the criterion variables are unrelated to planning 50 percent of the time! Thus, the multiindicator approach can substantially reduce Type II error.

Consequently, our planning model should be applied to other areas of strategic management which are plagued with inconsistent results. As Pearce, Freeman, and Robinson (1987) and Boyd (1991) have shown in their detailed reviews, studies on the relationship between strategic planning and financial performance have been plagued with methodological inconsistencies. Consequently, the uneven and discordant findings on planning and performance could largely be an artifact of these methodological problems. Our strategic planning model has been tested for its reliability and concurrent validity. It is parsimonious, uses indicators which are well grounded in theory, and represents different aspects of the strategic planning process. Therefore, application of this multiple-indicator model may help researchers to better understand the role of this fundamental construct within the broader strategy domain.

While our study has addressed the limitations of several prior papers, there are still several issues requiring further analysis. As our statistical results demonstrate, the measures used in this

study are quite reliable. A closer look, however, reveals that two of the indicators—trend analysis and competitor analysis—have relatively low reliability estimates. This may question their predictive utility.

In addition to reliability, measures need to be valid to ensure accurate research results. Consequently, any conclusions based on unreliable or invalid measures of strategic planning hinder the advance of the field. While concurrent validity is a vital component of the general validity of a measure, it is important also to assess construct validity to assure that the instrument does, in fact, measure what it purports to measure. Of course, construct validity is difficult to measure (Schwab, 1980): an empirical investigation can make only indirect inferences about construct validity. So, while we can recommend to modify or to reject a measure, we cannot *accept* a measure Schwab, 1980). Application of structural modeling methods such as LISREL have been suggested to overcome some of the limitations of the traditional MTMM approach (Bagozzi, Yi, and Phillips, 1991). Since the LISREL–MTMM approach recommended by Bagozzi *et al*. would require additional data beyond that collected in our sample, future researchers might consider another study which provides a more powerful test of the construct validity of our planning measure.

Moving from methodological to theoretical issues, another opportunity for future research is to apply this scale to the grand/incremental strategy issue. To describe these as *competing* perspectives would be an understatement—Mintzberg (1990), for example, ascribes failures as diverse as the Vietnam War and the collapse of Bendix to the design school (grand strategy). Alternately, the incrementalist school has been dismissed as 'a Shirley McLaine world of New Age mysticism in which rationality is devalued' (Grant, 1995: 21). Typically, the advocates of these perspectives view them as 'either–or' choices. However, the bulk of empirical strategy research, and the views of most practitioners (Ginter *et al*., 1985) remain more closely aligned with the grand strategy school. So, are these actually competing viewpoints, or simply the two anchors of a single continuum? For example, firms in our sample which placed strong emphasis on all planning items might be considered representative of the design school. Similarly, a firm which places little emphasis on mission statements, external analysis, or long-term goals has the key attributes of an incrementalist. To the extent that our scale items covary equally well among these two extremes, then the 'either–or' debate is revealed as a false dichotomy. While there is limited data available, the data do tentatively support the idea of a single continuum: Wooldridge and Floyd (1990) found no difference in the involvement in strategic decision-making between firms classified as normative and incremental planners. Additionally, Fredrickson and Mitchell (1984) indicated that the main difference between these groups was in their use of planning tools: for example, they suggested that normative planners will scan proactively, but incremental planners only as needed. Consequently, application of our measurement model could help address a debate which has now been running for several decades.

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