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AN INVESTIGATION OF THE PLANNING-PERFORMANCE CONUNDRUM IN A DYNAMIC MACROENTREPRENEURIAL ENVIRONMENT

Michael D. Ensley
Rensselaer Polytechnic Institute
enslem@rpi.edu

James W. Carland
Western Carolina University
carland@wcu.edu

JoAnn C. Carland
Western Carolina University
carland@wcu.edu

ABSTRACT

While it is intuitively appealing from a theoretical perspective to confirm the relationship between strategic planning and performance as measured by growth and profitability, many unknowns tend to confound the perfect model. The literature is rich with studies attempting to explicate the dynamics of planning and performance, yet there is no closure because of the vagaries of sample and methodology. This paper investigates the planning-performance conundrum in a dynamic macroentrepreneurial environment.

The results of this study clearly show that for the present sample of macroentrepreneurs, strategic planning had a deleterious effect on performance. This suggests that entrepreneurship researchers may need to reexamine some basic axioms and precepts. For example, perhaps entrepreneurs do employ a rapidly evolving vision to negotiate through dynamic environments rather than operate under the constraints of strategic planning. Clearly, the firms in this sample were all highly successful ventures. Further, they all practiced strategic management. If strategic planning did not contribute to that success, what did? The search for an explanation continues.

INTRODUCTION

Since its advent in the 1960s, a rich literature concerning strategic planning has emerged. Miller and Cardinal (1994) identified two primary purposes of the process: to promote adaptive thinking and to support managerial integration and control. In fact, the treatment of the process in the literature easily leads to a conclusion that strategic planning is the best, if not the only, vehicle for enhancing organizational performance. To support this conclusion, one need only read work on adaptive thinking (i.e., Ansoff, 1991), and on planning for managerial integration and control (i.e., Vancil & Lorange, 1975; Armstrong, 1982; Grinyer,

Al-Bazzaz & Yasai-Ardekani, 1986), or review studies examining the strategic planning-firm performance link (i.e., Armstrong, 1982; Robinson & Pearce, 1983; Schrader, Taylor & Dalton, 1984; Boyd, 1991; Schwenk & Schrader, 1993; Miller & Cardinal, 1994).

Whether planning actually enhances performance has been, and is still, the subject of debate. Henry Mintzberg (1994) has avowed that planning has *"failed everywhere and everywhen"* it has been implemented, thereby implying in a rather alliterative fashion that planning has failed at all times and in all places. Historically, empirical research has not produced consistent findings with regard to a planning-performance linkage (c.f., Pearce, Freeman & Robinson, 1987; Mintzberg, 1991). Reviews of the literature have also produced mixed results with researchers decrying methodological artifacts (Hofer, 1976; Armstrong, 1982; Shrader, et al., 1984; Robinson & Pearce, 1984; Pearce, et al., 1987; Boyd, 1991; Schwenk & Shrader, 1993; Miller & Cardinal, 1994).

Miller and Cardinal (1994) contend that they have resolved the issue with their meta-analysis, and they cite methodological complications as the source of inconsistencies in the literature. They conclude: "Planning was found to be strongly and positively related to growth in studies in which industry effects were controlled, an informant source of performance data was used, planning was defined as not requiring written documentation and the quality of the assessment strategy was high" (Miller & Cardinal, 1994, p. 1660). Obviously, there is a dual concern with their findings: the potential bias of an informant data source; and, the dubious nature of unwritten plans. We all know that one tends to perceive growth as a positive. Therefore, an informant source might tend to report that the firm's growth was informally planned simply because of the appeal of an affirmative outcome. After all, if the growth was not planned, what drove it? Luck? A meta-analysis is a method for examining previous studies, but it is not a mandate to discontinue a search for relationships nor a conclusive deterrent to future research, especially given the incongruent results across studies and the inconsistencies introduced through the vagaries of sample and methodology. Clearly, the issue is far from resolved, and a rigorous, empirical study is required to demonstrate the planning-performance link.

The literature is clear on one fact: the task environment is a major factor in planning-performance findings. Miller and Cardinal (1994) controlled for industry effects, since not surprisingly, the effects of industry variations are well established. Earlier, Dess, Ireland and Hitt (1990) found that most researchers have not used adequate controls for potential industry effects. This may be a much more serious problem with modern research due to the emergence of hypercompetitive conditions which clearly demonstrate that the planning-performance link is substantially influenced by firm context (D'Aveni, 1994; Ireland & Hitt, 1999). The 21st century's economic landscape is replete with rapidly evolving technological development, changes in the institutional environment, more demanding consumers and competition which is more global in scope (D'Aveni, 1994), and it will be turbulent, complex, challenging, and filled with competitive opportunities and threats (Ireland & Hitt, 1999). These conditions cry out for an empirical study adequately addressing the environmental context.

It is also clear that the relationship between planning and performance appears weak in small firms (Boyd, 1991; Schwenk & Shrader, 1993), many of which simply do not plan at all (Robinson & Pearce, 1984). This is a particular problem in the literature as Schwenk and Schrader (1993) examined more than one hundred articles for evidence of the strategic planning-performance link in entrepreneurial firms and concluded that only fourteen studies possessed the necessary methodological rigor to be utilized in a meta-analysis.

In our view, a significant gap remains in the literature. If one controls for the task environment, uses an independent source of data, and works with small firms which plan and plan formally and rigorously, can it be demonstrated that planning positively influences performance? This manuscript describes what the authors consider to be a methodologically sound attempt to do just that.

PLANNING IN ENTREPRENEURIAL VENTURES

Entrepreneurial ventures are *not* miniaturized replicas of large firms. Entrepreneurial firms have special features and needs, advantages and disadvantages. For example, entrepreneurial firms tend to be more specialized, focused on one product or product group, and more flexible: able and willing to change direction and strategy quickly. They tend to be guided by one person, the entrepreneur, who devises and executes strategy, or led by a small team of entrepreneurs. Relative to large firms, they have limited resources including capital, people, materials and information.

Entrepreneurs have displayed a tendency not to plan (Robinson & Pearce, 1984), perhaps because a scarcity of resources can lead to a preoccupation with daily operational decisions. When they do plan, the effects of the planning activity can be mitigated by environmental turbulence and lack of managerial expertise, particularly early in the firm's development (Schwenk & Schrader, 1993). Entrepreneurial ventures also have the potential for meteoric success and failure, a special aspect of entrepreneurial potential that complicates planning. In the words of Richard D'Aveni (1994), Goliaths are brought down by Davids. Not only does this have far reaching implications for Goliaths, but for Davids as well, because Davids slay each other far more frequently than they hurl their stones at giants.

Entrepreneurship is fundamentally about the recognition and pursuit of opportunity to realize a vision. The entrepreneur, or the new venture top management team, is the creator of this vision, and the entrepreneurial venture is the vehicle for its pursuit. In at least one view, the essence of entrepreneurship is *the ability to see what is not there* coupled with *the drive to translate that vision into reality* (Carland, Carland & Stewart, 1996). In the Schumpeterian tradition, entrepreneurship is about creating a new order (Schumpeter, 1934). On the other hand, traditional strategic planning is about gaining competitive advantage (Porter, 1980). Planning takes place in a paradigm, a set of assumptions about the realities of the world and how success is achievable, which is known and understood by the planners, although the outcomes of decisions are rarely certain. Planners monitor the moves of close competitors and tend to make incremental adjustments (Romanelli & Tushman, 1994). Conversely, entrepreneurship is about establishing a new paradigm that is unknown or poorly understood by any of the planners, including the originating entrepreneur. In this new paradigm, the choice of strategic initiatives is clouded by information voids and difficulties in deciphering the information that is available. More importantly, the new economic realities created by entrepreneurs redefine dynamic competition in ways that often render existing resource transformation relationships, decision making criteria, and strategies obsolete.

The intersection of these factors makes the study of planning in entrepreneurial ventures extremely difficult. In fact, the almost complete lack of homogeneity among entrepreneurial firms and the differing perspectives of their interactions with their environments dictate a narrowing of focus.

MACROENTREPRENEURIAL VENTURES

The tendency for entrepreneurs to avoid planning (Robinson & Pearce, 1984) has serious repercussions for a study of this type. Further, the wide range of managerial expertise that

exists among entrepreneurs is another challenging issue, because limited expertise is cited as one of the factors which can affect the planning-performance link (Schwenk & Schrader, 1993). To deal with these issues, the authors undertook a focus that allowed for the examination of a more narrow, and thus a more measurable field.

Carland and Carland (1997) coined new terms and suggested that entrepreneurs occur in at least three different groupings which are vastly different in their approaches to business: *microentrepreneurs, entrepreneurs,* and *macroentrepreneurs*. Their work was founded on writings spanning several decades that recognize that not all entrepreneurs are alike. Over the years, many researchers have posited types of entrepreneurs (i.e., Smith, 1967; DeCarlo & Lyons, 1979; Mescon & Montanari, 1981; McClelland, 1987; Louis, Blumenthal, Gluck & Stoto, 1989; Gartner, Mitchell & Vesper, 1989), while others have proposed classifications of entrepreneurs (i.e., Webster, 1977; Dunkelberg & Cooper, 1982; Vesper, 1980, 1990), and Carland (1982) actually suggested that entrepreneurship might be a continuum.

The first category, *microentrepreneurs*, incorporates small firms that approach business from a traditional perspective, and whose owners have their primary interests outside the venture. These individuals cannot be expected to plan since their focus is upon the daily operations of the firm and because they have a narrow view of business realities. The second category, *entrepreneurs*, are engaged in the pursuit of wealth in their firms, and, therefore, may be involved in planning; however, these individuals are likely to change their focus and interest as they achieve some inner defined level of success. Only the final group in the typology, *macroentrepreneurs*, can be expected to pursue their objectives relentlessly and continuously. These individuals are striving to create new paradigms and economic orders; to revolutionize business (Carland & Carland, 1997).

Given the need for at least some level of business success to support their lofty ambitions, and recognizing the focus on growth and industry domination, these authors believe that *macroentrepreneurs*, as defined by Carland and Carland (1997), will have a higher level of managerial expertise and will conduct strategic planning in their ventures. Further, these individuals are driving environmental turbulence, as they are the architects of paradigm shifts and new economic orders. At the same time, *macroentrepreneurs* embody the classical entrepreneurial portrait that so many people paint in their minds: the business revolutionary who creates an industry or rises to dominate a market. From Carnegie, to Ford, to Turner, to Gates, these are the entrepreneurs whose stories become folklore. By limiting our study to *macroentrepreneurs*, we will ensure that we have selected the group which does plan and plans well, which does have significant managerial ability and expertise, and which does exist in an environment of turbulence and change.

THE ENVIRONMENT FOR ENTREPRENEURIAL VENTURES

Describing the environment in a sufficiently detailed manner as to permit its rigorous consideration in an empirical study is not simplistic, especially one as transient as that embracing entrepreneurial ventures. Referencing an earlier comprehensive review of the literature, Aldrich (1979) developed a scheme of six environmental dimensions, which Dess and Beard (1984) collapsed into three through a factor analysis. They are: 1) munificence, a measure of resource abundance and capacity to support growth; 2) dynamism, a measure of instability or volatility; and 3) complexity, the relative heterogeneity and concentration of environmental elements. Keats and Hitt (1988) utilized those three dimensions to describe a general systems model of the environment-organization interface leading to operating and market performance. Sharfman and Dean (1991) used essentially the same three dimensions as Keats and Hitt (1988), and Dess and Rasheed (1991) credited their work as encompassing a more theoretically correct set of environmental measures.

Dynamism in the Dess and Beard (1984) study, instability in the Keats and Hitt (1988) study, and volatility in a study by Dess and Rasheed (1991) are essentially the same concepts as environmental dynamism in the Sharfman and Dean (1991) approach. Other researchers have struggled with the dimensions of the environment, although most seem to be remarkably similar to the Dess and Beard (1984) conceptualization. For example, Eisenhardt (1989) introduced the idea of high velocity environments, and, together with Miller and Friesen (1984), talked about environmental hostility. These appear to be the same concept, although Eisenhardt (1989) fails to definitively describe a high velocity environment. She does argue that information technology is such an industry, as it is typified by growth-oriented firms that change fast, and that these firms are, in effect, high velocity firms. Duncan (1972) does not refer to hostility, but he does examine competitive issues in his assessment of the environment. In the authors' view, all of these concepts are analogous to the Dess and Beard (1984) idea of dynamism.

Based upon the literature and the special exigency of applying environmental measures to entrepreneurial firms, these authors conclude that the best operationalization of the Dess and Beard (1984) theory is Sharfman and Dean's (1991) conceptualization of dynamism, which reflects the rate of unpredictable change in the industry. The match is appropriate to the individuals under study as macroentrepreneurs pursue innovative behavior and produce new markets, services, products, and industries (Carland & Carland, 1997), thus driving the rate of change in an industry to new heights.

STRATEGIC PLANNING INTENSITY

In the traditional planning model of strategic management (Steiner, 1969; Andrews, 1980), after the determination of organizational mission, the formulation of effective strategy resides in identifying the threats and opportunities posed by the firm's operating environment, determining the firm's strengths and weaknesses, and then, using the information derived from this process, choosing a strategic alternative which produces alignment between the firm and its environment which in turn enhances firm performance. In theory, the key to the traditional planning model is the performance enhancing effect of fit between the environment and the strategy selected (c.f., Venkatraman, 1989; Venkatraman & Prescott, 1990). At its core, this model embodies the concept of rational thinking and analysis, or at least, a procedurally rational process (Dean & Sharfman, 1993).

Clearly, planning can run the gamut from a stylized, formality without real purpose, to a complete and detailed management activity map. Consequently, examining a planning-performance link, even when performance is objectively measured, is problematic. The rational perspective is that the more skilled are the management personnel involved in planning, the more valuable the process will be. As mentioned above, by limiting the study to *macroentrepreneurs* operating successful firms, we ensure that we have selected a group with strong managerial skill, but the question must still remain as to the intensity of strategic planning in a given firm. The authors address this issue by introducing a measure of strategic planning intensity, described more fully below.

THE PRESENT STUDY

Many authors have proposed linkages between environmental dimensions and organizational variables (i.e., Burns & Stalker, 1961; Thompson, 1967; Lawrence & Lorsch, 1969; Blau & Schoenherr, 1971; Hofer & Schendel, 1978; Pfeffer & Salanick, 1978; Andrews, 1980; Grinyer & Yasai-Ardekani, 1981). The preceding studies and those empirical studies specific to new ventures such as those by Sandberg (1986) and McDougall, Robinson, and DiNisi

(1992) found that strategy-industry fit had a direct effect on new venture performance. Further, Sharfman and Dean (1991) found that environmental dynamism had effects on the perceptions of managers and therefore on their planning activities. Dean and Sharfman (1993) found that task environment, competitive threat and perceived environmental uncertainty limit management's decision making abilities, and therefore, environmental variation altered the number of steps and level of formalization in the firm's strategic planning process. Fredrickson and Iaquinto (1989) concluded that strategic planning processes should fit the organizational task environment in which the firm operates. They argue that strategic planning processes must be created with the speed and information requirements of their environments.

Boulton, Lindsay, Franklin and Rue (1982) found that environmental characteristics can moderate planning activities and that planners in more hostile environments tend to use a more complete planning process. Armstrong (1982) suggested that the strategic planning-performance link would be stronger in more hostile or turbulent environments, and Boyd (1991) argued that the correlation between planning and performance would be stronger in organizations operating in hostile environments. Boulton et al. (1982) posited that environment should moderate the strategic planning-performance link in the same way as Boyd (1991).

In our view, the literature supports the development of the following hypotheses regarding the planning-performance link and the environment in entrepreneurial firms:

> *Hypothesis One: The more intensive the practice of strategic planning in an entrepreneurial venture, the greater the performance gains, given that the performance is measured objectively.*
>
> *Hypothesis Two: In more dynamic environments, entrepreneurial ventures will benefit more strongly from intensive planning than will ventures in less dynamic environments, given that the environment is measured objectively.*

The remainder of this manuscript will describe our approach to testing these hypotheses.

RESEARCH METHODOLOGY

Definitions

Macroentrepreneur

Like the mythical *heffalump* (Kilby, 1971), there is no accepted definition or description of *entrepreneur*, despite decades of research in the field (Carland, Hoy, Boulton & Carland, 1984; Bygrave, 1993). However, the entrepreneurial event involves much less controversy and is generally conceded to involve the creation of a business venture (Gartner, 1990). The *macroentrepreneur* described by Carland and Carland (1997) does create a business venture, and will therefore conform to the Gartner (1990) perspective. Beyond that aspect, *macroentrepreneurs* produce new markets, services, products and industries. The definition which the authors employ in this study requires an individual, or a team of individuals, who own and manage a closely-held business venture which has actually produced new markets, services, products or industries, and which systematically engages in strategic planning.

Planning

The strategic planning process has been rigorously explored in the literature, and a normative strategic planning process has been described (Hofer & Schendel, 1978; Ginter, Rucks, & Duncan, 1985), as well as procedures involving the existence of a strategic plan (Bracker & Pearson, 1986; Kukalis, 1991), the formality of that plan (Pearce, Robbins, & Robinson, 1987; Shortell & Zajac, 1990), an analysis of internal operations (Miller, 1988; Powell, 1992), an analysis of environmental trends (Bracker & Pearson, 1986; Prescott & Smith, 1989; Boyd & Fulk, 1996), and the evaluation of strategy (Ginter et al., 1985; Bracker & Pearson, 1986; Goold & Quinn, 1990; Kukalis, 1991). Consequently, the authors define planning as a process which embodies analysis of a firm's internal operations, external trends and events, the identification of objectives, the development of a formal, written strategic plan, and the formal, periodic evaluation of that plan.

Planning Intensity

Building on the foregoing definition, the authors define planning intensity as the strength of the top management team's commitment to the strategic planning process. That is, does the top management team actually practice all of the steps and procedures involved in the traditional planning model?

Performance

The financial performance measures chosen for use in this study are sales, sales growth, and profits. These measures are based on several works (McGuire, Schneeweis, & Hill, 1986; Keats & Hitt, 1988; Schaefer, Kenny, & Bost, 1990). Sales are often used as a measure of performance for all firms (Brush & Vanderwerf, 1992), and we will employ the dollar value of sales during the most recent five-year period as the measure of sales in this study. In addition, sales growth is often cited as an objective of entrepreneurial firms (Carland, et al., 1984; Bygrave, 1993). Consequently, we will employ the numerical rate of change in annual sales over the past five years as the measure of sales growth.

Finally, with regard to the last measure, profit, the researchers were concerned that profit may not be a meaningful measure of performance in entrepreneurial firms, given the growth objectives of most new ventures. A study by Chandler and Hanks (1993) found that the great majority of entrepreneurs have growth concerns that far outweigh their concerns about profitability. Brush and Vanderwerf (1992) found in a review of 34 empirical studies in entrepreneurship that employee and sales growth were the most common variables used. These studies support the use of growth as the critical measure of new venture performance. Nevertheless, in keeping with the literature, we used a categorization of profits, as reported by an independent body, over the last five years, as the final measure of performance.

Our sources of performance data include audits from accountants that were used to develop the original *inc. 500* list and Dun and Bradstreet's Market Identifiers database. Survey data were avoided as performance indicators in an effort to lessen the effects of common method variance and to allow the respondents to concentrate on the strategic planning activities and dimensions.

Environmental Change

As noted by Miller and Cardinal (1994), many of the historic studies have not been sufficiently rigorous from a statistical perspective as to permit their use in a meta-analysis. One of the problems has been measuring environmental change. The authors propose to

utilize methodologies proposed by Dess and Beard (1984) and Sharfman and Dean (1991) to produce our measure of environmental dynamism. Further, the authors will employ data sources independent of the questionnaire items to avoid respondent bias and to ensure that the measure can be replicated by other researchers, regardless of the participants in the study.

The Samples

To operationalize our definition of *macroentrepreneurs*, the authors required a sample of owner/managers of independently owned business ventures who had actually created new markets, services, products or industries. To find such a sample, we determined to employ entrepreneurs drawn from the *inc. 500* list of the fastest growing small firms in the United States as compiled by *inc.* magazine. These firms are independently owned and operated, although some of them underwent initial public offerings shortly after appearing in the *inc. 500* list. They are independently identified by the editors of *inc.* magazine, and their success in creating new products, services, markets or industries is evidenced by fantastic growth. In fact, the slowest growth firm among the 1994 *inc. 500* posted a four year growth rate in sales of more than 500%, while the fastest growing firm showed a four year growth of more than 35,000% (Conlin, Connor, Davilas, Cheng, Jackubiak & Murphy, 1994). Success in market penetration of that scale is tangible evidence of the macroentrepreneurial nature of the firm. Such success also argues for the existence of strong managerial expertise, thus suggesting a greater facility for the practice of strategic management.

The first sample for this project was 150 randomly selected chief executive officers and presidents of the 1994 *inc. 500.* Member firms were selected from the *inc. 500* list and then confirmed using the Dun and Bradstreet enhanced market identifiers file. CEOs were chosen as potential respondents when possible. If no CEO was listed, the president of the firm was selected. The name of the president or chief executive officer was placed on a mailing list. A questionnaire containing the planning questions and demographic data was mailed to each CEO/President. Both initial and follow-up mailings were completed. Of the 150 potential participants, 120 responded for a response rate of 75 percent.

All respondents were owner-managers and CEOs, or company Presidents. Over 90 percent of these respondents identified themselves as founders, 93 percent indicated that they were owners of 10 percent or more of the equity of the firm, and 92.5 percent identified themselves as entrepreneurs. All respondents identified themselves as strategic decision makers. Additionally, 88.3 percent of the respondents were male. While 81 percent of participating firms were owned by more than one person, only 2.5 percent were publicly traded (as a result of recent IPOs). Mean first year sales were $925,000 contrasted with a mean of $15.32 million in the most recent fiscal year. Employment grew from a mean of 6.3 employees in year one to 152 in the most recent year. Every firm had a formal, written plan, and systematically engaged in planning. In fact, the firms represented by the respondents reported that they develop or revise their strategic plans on average every 14.75 months.

A second and larger sample of *inc. 500* firms were collected from the 1999 list of the *inc. 500* to verify the findings from the 1994 sample. This group included all firms that could be verified as currently operating at the time of the survey, which was in mid-2000, by checking the Dun & Bradstreet Market Identifiers Data Base. All firms that were determined to have gone public were omitted from the sample. Of the 437 firms that remained, 278 Chief Executive Officers or company Presidents returned their questionnaires for a response rate of 63.6 percent. As before, the potential for non-respondent bias was examined. *T-tests* on revenue, firm age, size, revenue growth rate, and profit level were conducted. All of these tests yielded non-significant results.

Of the members of the 1999 sample, approximately 93% were male and average age was 37.2 years. Seventy-four percent were founders and 82% held at least 10% of the equity in their firms. Ninety percent considered themselves to be entrepreneurs and only 34% had been involved in a new venture previously. During the previous 5 years, revenue growth for these firms ranged from 654% to 10,438% and averaged 1,607%. A total of 42 industries were represented and age of firm ranged from 5 to 9 years, with the average being 6.8. Firm size in number of employees had a median of 49.5. The median revenue figure was $14,500,000.

Planning Intensity

To operationalize our definition of planning intensity, we developed an instrument incorporating the traditional elements of strategic planning. The instrument is displayed in Appendix A. Specifically, we included items to measure the existence of a formal strategic plan; the role of analysis of internal operations in the development of the plan; the role of analysis of environmental trends in the development of the plan; the process of developing objectives from the interaction of internal and external assessment; and, the existence of procedures to engage in periodic evaluation of the plan.

The identification of existence of a formal, written plan is a dichotomous variable, while all of the remaining items were measured on five point Likert scales. The instrument is scored by assigning values ranging from 1 to 5 to each of the Likert responses, and then averaging the data. The result is a continuous variable representing the degree of intensity with which the respondent practices the formal strategic planning process. After the development of the final questionnaire, pretests were conducted on twenty *inc. 500* chief executives and items that were not interpretable or confusing were eliminated (Churchill, 1991). These CEOs were eliminated as potential respondents in the major phase of the 1994 and 1999 studies.

Every respondent indicated that a formal strategic plan existed in the firm. Had any indicated otherwise, those would have been eliminated from the data. A Coefficient Alpha was calculated for the instrument scores. As reported in Appendix A, that statistic was 0.83 for the 1994 sample and 0.89 for the 1999 sample, demonstrating inter-item reliability (Nunnally & Bernstein, 1994).

Respondent Reliability

To investigate the potential existence of respondent bias, two groups of sixty (60) of the CEOs, fifty percent (50%) of those who participated in the study, were randomly selected. Surveys containing the instrument were mailed to the other members of the top management teams of those 60 firms. These individuals were identified from the Dun & Bradstreet Market Identifiers Database. Responses were received from other members of the teams in all 60 firms. Responses of the team members were compared to those of the CEO to assess the reliability of the CEO's perception of the firm's strategic planning activities. We assessed agreement within each top management team on the intensity of strategic planning activities using the $r_{wg(j)}$ (James, Demaree & Wolf, 1984). In addition, we conducted a within group and between group ANOVA on the planning scales. The $r_{wg(j)}$ measures the correlation between the top management team members' perception of strategic planning with that of the CEO. The within and between ANOVA measure the extent to which a team's responses are similar to those of their fellow team members, including the CEO, as opposed to non-team members. Taken together, these statistics provide a researcher with a check on the perceptual consensus of the top management teams in each of these firms.

The results of the tests suggested strong psychometric properties. The $r_{wg(j)}$ was 0.89 for the 1994 sample and .93 for the 1999 sample, showing a high correlation between team members'

perceptions of strategic planning intensity and those of the CEO. The F statistic resulting from the ANOVA was 2.54 ($p<.01$) for the 1994 sample and 3.07 ($p<.01$) for the 1999 sample, and again demonstrated that top management team members, including the CEO, accurately perceived the state and intensity of strategic planning activities in their respective firms.

Environmental Measure

The researchers took care in developing the environmental measures to assure temporal integrity. Specifically, the questionnaire responses of each sample were matched with dynamism data of the same time period.

Dynamism was measured as the standard errors of three regression slopes. In each case, the independent variable was time. The dependent variables were industry revenues, number of industry employees, and research and development intensity:

$$y_t = b_0 + b_1 ir + a_{ir}$$
$$y_t = b_0 + b_1 e + a_e$$
$$y_t = b_0 + b_1 rd + a_{rd}$$

where y_t = time; ir = total industry revenues; e = total number of employees in the industry; rd = research and development intensity; and, a = the residual in each regression.

Industry revenues and number of industry employees have been used as environmental measures in prior studies (i.e., Dess & Beard, 1984; Keats & Hitt, 1988; Sharfman & Dean, 1991). In our view, research and development intensity is a variable which captures the extent to which revenue dollars must be spent to keep up with technological evolution within an industry. We measured research and development intensity as the ratio of research and development expenditures to total sales. This is the same approach to measurement that has been used in previous studies (Dess & Beard, 1984; Sharfman & Dean, 1991).

Each of these variables was regressed with a dummy variable for at least seven years of data. While more data were available for some industries than others, the industries with the fewest years of data limited the number of years utilized in the calculations, hence the utilization of standard errors to avoid calculations with different numbers of years which might create comparability problems between industries. The years of 1985-1994 were used to calculate the employment standard error for the 1994 sample. The years of 1991-1999 was used to calculate the employment standard error for the 1999 sample. The years 1988-1995 were used to calculate the revenue standard error for the 1994 sample. The years 1991-1999 were used to calculate the revenue standard error for the 1999 sample. The years of 1988-1996 were used to calculate the standard error of research and development intensity for the 1994 sample. The years 1991-1999 were used to calculate the standard error of research and development intensity for the 1999 sample. Consistent with Dess and Beard (1984) and Sharfman and Dean (1991), the standard error of the regressions divided by the mean of the respective variable was used as the measure of instability:

$$MI = SE(y_{ir}) / Mean(ir)$$
$$NEI = SE(y_e) / Mean(e)$$
$$TI = SE(y_{rd}) / Mean(rd)$$

where MI = market instability; NEI = number of employees instability; and, TI = technological instability; SE = standard error of each of the three regressions for industry revenues, number of employees, and research and development intensity; and, $Mean$ = the mean of each of the three variables: industry revenues, employees, R&D intensity.

The authors then utilized Sharfman and Dean's (1991) method to produce our measure of environmental dynamism:

$$Dynamism = Z(MI+NEI) + Z(TI) + 10$$

where *MI* is equal to market instability, *NEI* is equal to number of employees instability, and *TI* is equal to technological instability.

Market instability and number of employees instability could be statistically related, so to eliminate multicollinearity concerns, the two variables were added. Z scores were used to ensure that all measures were on the same metric. The constant was added to assure that the measures stay within the bounds of zero to positive infinity.

Data Sources

Data for use in calculation of the environmental measure were collected from several U.S government publications and other archival sources. The government documents were the *Census of Manufacturers (1992 & 1997), Annual Survey of Manufacturers (1987-2000), Annual Service Survey (1988-2000), County Business Patterns (1983-2000), Census of Service Industries (1995 & 1997), Census of Wholesale Trade (1992 & 1997), Census of Retail Trade (1992 & 1997), Census of Construction (1992 & 1997), Annual Wholesale and Retail Summary (1991-2000), Annual Construction Survey (1985-2000), Census of Transportation (1992 & 1997), Motor Freight Transportation and Warehousing Survey (1993 & 1998),* and the *Annual Survey of Communication Industries (1994 & 1998).* The technological information was partially available from *Science and Engineering Indicators* (1994-2000), a publication of the National Science Foundation. Some of the data were used by special permission of the Bureau of the Census and the National Science Foundation. The four digit standard industrial classification level was utilized as the industry level.

RESULTS OF THE STUDY

The first step in the study was an investigation of the correlations among the variables to be analyzed. Table One displays the basic statistics for each variable, as well as the correlation matrix from the 1994 study, and Table Two presents the data from the 1999 study.

Table One
Correlation Matrix for the 1994 Sample

Variable	Mean	Std Dev	Dynamism	Planning	D x P	Sales	Profit	Sales Growth
Dynamism	0.03	0.86	1.00					
Strategic Planning Intensity	3.84	1.09	0.03	1.00				
Dynamism X Planning	0.10	0.96	* 0.32	* -0.44	1.00			
Sales	15,320	36,275	0.05	-0.01	0.02	1.00		
Profit	3.54	1.25	** -0.19	0.05	** -0.14	0.10	1.00	
Sales Growth Percentage	2,340	3,619	0.07	0.10	** -0.19	* 0.47	-0.03	1.00

** = p<.01; ** = p<.05*

Table Two
Correlation Matrix for the 1999 Sample

Variable	Mean	Std Dev	Dynamism	Planning	D x P	Sales	Profit	Sales Growth
Dynamism	0.05	0.92	1.00					
Strategic Planning Intensity	3.28	1.46	0.04	1.00				
Dynamism X Planning	0.16	1.18	* 0.41	* -0.51	1.00			
Sales	11,567	22,744	0.07	-0.03	0.04	1.00		
Profit	3.17	1.18	** -0.24	0.03	** -0.17	0.09	1.00	
Sales Growth Percentage	1,608	2,517	** 0.16	0.08	** -0.21	* 0.52	-0.05	1.00

** = p< .01; ** = p< .05*

As the data in Tables One and Two indicate, combinations of the independent variables, dynamism, planning intensity, and the interaction of dynamism and planning, with the various dependent variables, sales, profit, and sales growth, should create no concerns of multicollinearity. Consequently, the second stage of the study involved the application of multiple regression techniques to the data. Specifically, we examined a model involving planning intensity, environmental dynamism, and the interaction of those two independent variables on performance as measured by sales growth. We repeated that examination using sales as the measure of performance, and repeated it yet again using profits as the measure of performance. The results for the two samples are displayed in Tables Three and Four.

Table Three
Multiple Regression Analysis of Venture Performance
with Dynamism as a Moderator for the 1994 Sample

Dependent Variable	Log Sales Growth	Log Sales	Profit
Environmental Dynamism	-0.09	0.04	** -0.19
Strategic Planning Intensity	** 0.19	-0.05	** 0.23
Planning X Dynamism	** -0.18	-0.05	-0.16
F-Ratio	** 2.40	0.27	** 3.38
R^2	0.12	0.01	0.22

Multivariate F-Ratio on Wilks' Lambda = 2.05**
** = p< .01; ** = p< .05*

As the tables indicate, the regressions produced insignificant results when sales were used as the measure of performance. However, the F ratios show that the models did produce significant results in both studies when sales growth or profits were used as measures of performance. In the 1994 sample, two of the three coefficients were significant for each of the two measures. In the 1999 study, all three coefficients were significant for each of the two measures. In both samples, the R^2 suggested that only a small amount of variation in sales growth was explained by the model, however, the percentage was relatively greater when profits were used as the measure of performance. One should also note that Dynamism and

the interaction of Dynamism with Planning Intensity produced negative coefficients in both samples for both measures.

Table Four
Multiple Regression Analysis of Venture Performance with Dynamism as a Moderator for the 1999 Sample

Dependent Variable	Log Sales Growth	Log Sales	Profit
Environmental Dynamism	*** -0.14	0.09	** -0.22
Strategic Planning Intensity	** 0.22	-0.11	** 0.26
Planning X Dynamism	** -0.20	-0.06	** -0.19
F-Ratio	** 2.54	0.34	* 3.64
R^2	0.15	0.03	0.26

Multivariate F-Ratio on Wilks' Lambda = 2.21**
** = p< .01; ** = p< .05; *** = p< .10*

To examine the results of the multiple regression more fully, we undertook the preparation of a graphical representation of the interaction following the technique described by Cohen and Cohen (1983). This technique is used to visualize the effects of the contextual interaction term on the dependent variable. We divided the results into high and low dynamism plots for both of the significant models. Using the 1994 sample, Figure 1 displays a graph of the effects of the interaction of planning intensity and environmental dynamism on sales growth, while Figure 2 displays a graph of the effects of that interaction on profit performance. Figures 3 and 4 display the same information using the 1999 sample. Specifically, the graphs contrast the effect of planning intensity on sales growth and on profit for firms experiencing lower levels of environmental dynamism, and for firms experiencing higher levels of environmental dynamism.

As the plot in Figure 1 displays, strategic planning intensity was negatively associated with sales growth in high dynamism environments and virtually neutral in low dynamism environments. The plot in Figure 2 suggests the same conditions, as do the plots in Figures 3 and 4. Specifically, strategic planning intensity was negatively associated with sales growth and with profits in high dynamism environments, and virtually neutral in low dynamism environments. These are startling findings and they suggest that a greater dedication to strategic planning did not improve performance in the sample firms.

Taken together, the findings of the study require us to reject both hypotheses. The entrepreneurial ventures in this study did not experience performance gains from greater strategic planning intensity, and planning intensity was not relatively more valuable in high dynamism environments. The results of the study do suggest that the effects of strategic planning on performance could be masked in a model that does not consider planning intensity and the effects of the environment.

Figure 1 for the 1994 Sample

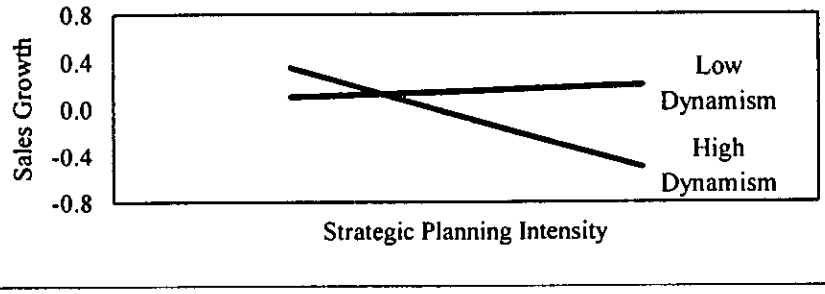


Figure 2 for the 1994 Sample

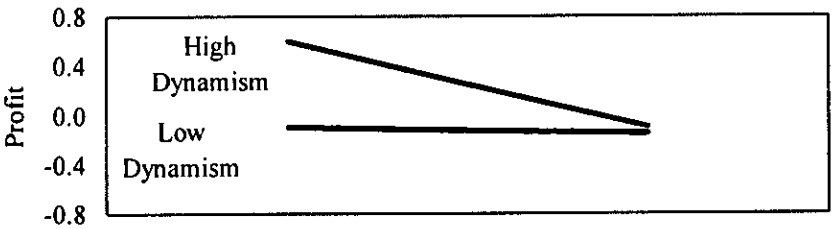


Figure 3 for the 1999 Sample

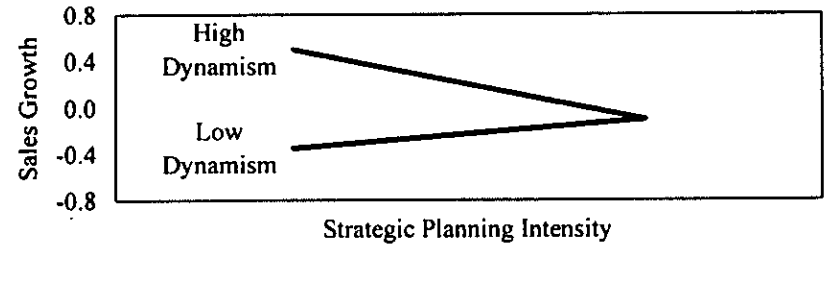
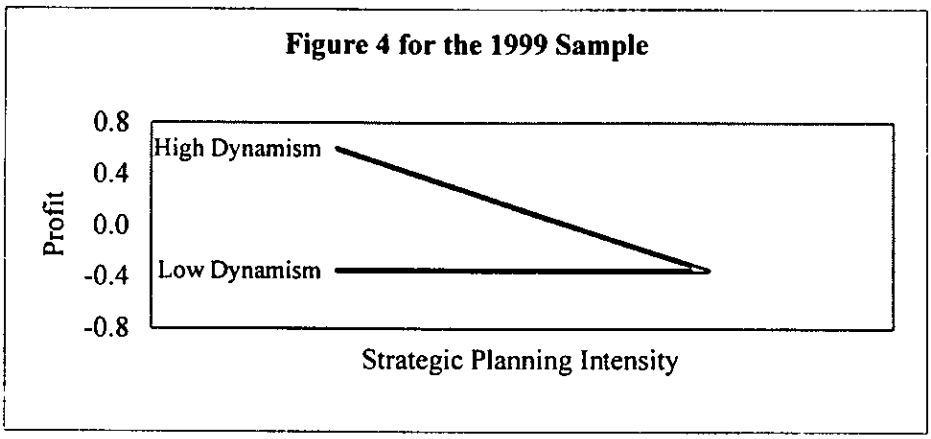


Figure 4 for the 1999 Sample



DISCUSSION

Perhaps the failure of the current attempt to validate the planning-performance link in an empirically rigorous fashion is rooted in the managerial investment required for formal strategic planning. That is, could a less intensive process, an informal, intuitive process, or the development of a simple vision be the best approach for a rapidly growing entrepreneurial venture? Intuitively, establishing a shared vision in an entrepreneurial firm is more attainable. Further, the investment in time required for a formal strategic planning process is more problematic as a result of more limited human resources. Further, the rapid pace, both internally and externally, which the macroentrepreneurial firms in this study experience could well make any formal plan obsolete before its official approval could be established. This is especially true in the high dynamism environments. At any rate, these findings suggest that it is not only too early to close the door on planning-performance research, the field requires a variety of studies to fully explore the complexities of the various interactions.

Certainly, the sample limits the generalizability of this study to macroentrepreneurial ventures, many of which grow at spectacular rates and exist in high velocity environments. On the other hand, many of the attributes of this study were designed to eliminate methodological problems of the type that have plagued earlier investigations. First, the selection of a sample of *inc. 500* firms, *macroentrepreneurs* as we have termed them, eliminates the problem with small firms who do not practice strategic planning. Every firm in the sample did, in fact, engage in formal strategic planning activities and did possess a formal, written plan.

Secondly, the use of independent data to represent the performance measures of the subject firms eliminated respondent and surveyor bias and lessened the effects of common method variance, while it also allowed respondents to concentrate on the strategic planning questions to the exclusion of almost everything else. This may have driven the response rate to the exceptional levels present in both samples. Finally, the data used in calculation of environmental dynamism were collected from U.S. government publications and other archival sources. Again, this data was from independent sources and contained no respondent or surveyor bias. It permits replication by other researchers readily, and eliminates common method variance, while ensuring the most independent measures of environmental change which are available.

Despite our efforts to raise the level of methodological rigor in this study, problems do remain. Chief among these are time and organizational context. A longitudinal methodology might have been more appropriate to permit investigation of the potential lag effect in the strategic planning process. Such an approach would have been able to accommodate the delay in planning effects which some observers might suggest span months or years. On the other hand, the researchers did employ performance and environmental data drawn from a five-year period to try to make the cross sectional approach more robust, and we did utilize two separate samples drawn from two separate and non-overlapping time frames.

As for organizational context, there is little question that such context could moderate the linkages between planning and performance, as well as the interaction of planning with environmental dynamism. In our opinion, the firms in this study shared more organizational similarities than differences. However, the statistical examination did not incorporate or address organizational factors.

Notwithstanding its weaknesses, this study did produce significant and important results. The fact that the findings failed to support the traditional, theoretical perspective of the planning-performance link is particularly important for entrepreneurship researchers. If these findings are supported and replicated by future studies, then there will be far reaching implications for entrepreneurs and for entrepreneurial practitioners. In the practical arena, entrepreneurs should be aware of the limitations of strategic planning when its interaction with the environment is considered. In the theoretical arena, researchers must consider whether regression analysis involving measures of planning and performance are underdefined when environmental effects are ignored.

Perhaps the most significant contribution of this study is the hint that some factor other than formal strategic planning is at work. As a result of the sample, we know the respondents were more skilled from a managerial perspective and that the firms they represented were among the most successful small firms in the United States. If we accept that methodological complications did not contribute to the findings, and these researchers are convinced that they did not, then some other strategic aspect must have been at play. The number of firms in the study, almost 400, suggests that luck could not be the common, driving factor in firm success. What was that factor?

CONCLUSION

The results of this study clearly show that for the present sample of macroentrepreneurs, strategic planning intensity could not be shown to have a positive impact on performance, given a traditional approach to planning, and independent measures for performance and for environmental dynamism. As indicated above, the sample firms are among the most successful and the best managed entrepreneurial firms in the United States. Clearly, there are strategic factors contributing to this success, and it is equally clear that those factors do not include formal strategic planning. Should entrepreneurship researchers reexamine basic axioms and precepts? Could it be that successful entrepreneurs and entrepreneurial teams utilize a rapidly evolving and changing vision to negotiate through dynamic environments? If so, the existence of the strategic plan may have its roots in the requirements of outsiders and constitute an actual hazard rather than bringing a strength.

Further research is required to explore these questions, of course, but this study demonstrates that it is clearly time for us to challenge the conventional perspective of strategic planning and begin to investigate the entrepreneurial phenomenon more deeply. How does a macroentrepreneurial venture negotiate the minefields of environmental change successfully? Is it simply luck? Is it the result of a gifted visionary at the helm of the firm? Is it the depth

of shared vision within the entrepreneurial team? Is it a mix of skills and abilities within that team? Or, is it some other, as yet unidentified, driver? The answers to these questions lie in future research efforts.

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Michael Ensley *is Associate Professor of Entrepreneurship at Rensselaer Polytechnic Institute. His doctorate is from Mississippi State University and his research interests include entrepreneurial teams, strategy, performance and personality.*

Jim Carland *is Professor of Entrepreneurship at Western Carolina University. His PhD is from the University of Georgia and his research interests include entrepreneurial strategy and personality.*

JoAnn Carland *is Professor of Entrepreneurship at Western Carolina University. Her PhD is from the University of Georgia, and her research interests revolve around the entrepreneurial psyche.*

APPENDIX

The Questionnaire

Strategic Planning Dimension
Cronbach's Alpha = 0.83 for the 1994 Sample
Cronbach's Alpha = 0.89 for the 1999 Sample

This firm has a formal, written strategic plan ..... Yes ___ No___

This firm engages in analysis of its internal operations as part of the strategic planning process ..... SA A N D SD

This firm engages in analysis of external trends and events as part of the strategic planning process ..... SA A N D SD

This firm identifies new objectives from the interaction of its mission with the analysis of internal operations and external trends and events ..... SA A N D SD

This firm engages in formal, periodic evaluations of its strategic plans .. SA A N D SD

Legend:
SA: Strongly Agree
A: Agree
N: No Opinion
D: Disagree
SD: Strongly Disagree