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Effects of Formal Strategic Planning on Financial Performance in Small Firms: A Meta-Analysis

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Researchers have been examining the effects of formal strategic planning on small firm financial performance for more than twenty years. Reviewers of prior studies have drawn differing conclusions as to whether formal planning improves small firm performance.

We have applied meta-analysis for the first time to the results of previous studies on formal strategic planning and small firm performance. The results suggest that even though the size of the effects for planning for individual studies is not large, the overall relationship between formal planning and performance across studies is positive and significant. Much of the variance in the size of the effects, however, is not explained by sampling error, indicating the potential for other variables to moderate the effects of planning on the performance of small firms. It is concluded, in general, that strategic planning is a beneficial activity for small firms.

Small businesses are the backbone of the U.S. economy, accounting for more than half of total employment and over eighty percent of employment growth in the past decade (Wheelen & Hunger, 1989). Small firms are also often innovative and challenging to manage strategically (Dollinger, 1985; Bracker & Pearson, 1986; Carter, 1990). Consequently, it is important to assess the value of techniques like strategic planning for improving the performance of these firms.

There is a growing body of literature examining the effects of formal strategic planning on the financial performance of small firms (e.g., Robinson, Pearce, Vozikis, & Mescon, 1984; Bracker, Keats, & Pearson, 1988; Shrader, Mulford, & Blackburn, 1989). There are also numerous field studies examining the effects of various forms of strategic and operational planning activities on a variety of financial performance measures for both large and small firms (Robinson & Pearce, 1984). Researchers who have undertaken these studies, especially those of small firms, have drawn conflicting conclusions: some claim that formal strategic planning provides structure for decision making, helping small business managers take a long-term view, and, in general, benefits small firms; others conclude that formal strategic planning has no potential payoff for small firms because it is a heady, high-level, conceptual activity suited solely to large firms and therefore has no effect on the financial performance of small firms.

This controversy is interesting and there is much to be gained from the subjective debate over these issues. Given the number of studies addressing the subject, however,

it may be fruitful to apply quantitative methods to the review of past research. Meta-analysis is a logical next step because it allows for the comparison of findings across studies. The use of meta-analysis makes it possible to draw clearer and more consistent conclusions from the body of literature on the effects of formal strategic planning on small firm performance than have been drawn from previous literature reviews.

In this paper, past reviews on formal planning and research on planning/performance relationships in small firms will be summarized. This summary will be followed by a discussion of the basic tenets of meta-analysis and an application of this technique to the results of past studies. Finally, general conclusions and suggestions for future research will be offered.

PAST RESEARCH ON FORMAL PLANNING AND FIRM PERFORMANCE

In the last fifteen years, there have been at least six reviews of the literature on the effects of formal planning on financial performance. The first was Hofer's broad review of strategic planning research (Hofer, 1976), the purpose of which was to point to gaps in knowledge rather than compare findings across studies. In this vein, Hofer reviewed the literature addressing costs and benefits of formal planning and concluded that formal planning probably had a beneficial impact on the content of plans. Hofer did, however, express concerns over the lack of rigor in this stream of research and suggested that future research should employ methods that would allow cross study comparisons.

Armstrong's 1982 review of twelve strategic planning and performance studies included a detailed examination of the formal planning independent variable. Armstrong compared studies as to whether they considered five component parts of the formal planning process: (1) setting of objectives, (2) generating strategies, (3) evaluating strategies, (4) monitoring the process, and (5) commitment to the process. Armstrong also compared studies on the bases of the situation and results, and then used the ratings of experts to assess the results of formal planning, cautiously concluding that formal planning benefitted firms.

Shrader, Taylor, and Dalton (1984) came to a different conclusion from Armstrong. Their comprehensive review of over sixty studies classified the planning and performance literature into three categories: formal long-range planning and performance, planning typologies and performance, and planning salience and performance. They reviewed types of samples and performance measures as well, and concluded that there is no apparent systematic relationship between formal planning and performance and that there is great disparity in the measurement of formal planning across studies. Shrader et al. recommended the use of hierarchical scales and uniform measurement for future research.

Robinson and Pearce (1984) authored a comprehensive review of the literature examining the effects of formal strategic planning on performance for small firms. They argued that knowledge about strategic issues is the domain of large firms, that small firm knowledge of strategic planning is, on the whole, inadequate, and that formal strategic planning has not been a popular practice among small firms because they have neither the time nor staff to invest in strategic planning. Rather, the manager of a small firm must be more concerned with the day-to-day operational problems of running the firm. Moreover, they indicated that research on the value of formal planning for small firms has been largely inconclusive simply because many small firms do not plan.

Similar to Robinson and Pearce, Wortman (1986) reviewed a set of small business planning/performance studies in the context of a broad survey of the methodologies

employed in the small business/entrepreneurship literature. The purpose of Wortman's review was to develop typologies and not to focus on the particular issue of the effect of formal strategic planning on small firm performance. However, he clearly addressed the need for continued refinement in several streams of research—including planning/performance relationships—and recommended the use of sophisticated statistical techniques for addressing such substantive research questions.

The most recent review, by Pearce, Freeman, and Robinson (1987), is similar to Shrader et al., except that it included detailed information on the perceived substantive contributions of each of the eighteen studies in the review. Again, these reviewers indicated that integrating the findings across studies is difficult due to the methodological differences of the studies.

Taken together, these reviews have produced a large number of potential topics for future research. They have not, however, been tremendously illuminating as to the basic question of how formal strategic planning affects firm performance. Part of this problem is due to the sheer number of studies involved. It is difficult to draw consistent conclusions from the traditional narrative discursive method of most literature reviews. For example, Cooper and Rosenthal (1980) found that reviewers using narrative methods came to different conclusions from those using quantitative methods, even when the number of studies reviewed was quite small. Given that most of the reviews of planning and performance have been rather ambitious in both depth and scope and that the nature of the phenomena under consideration is extremely complex, it is easy to understand the difficulty in drawing conclusions from research results using simple narrative processes.

Furthermore, these reviews underscore the importance of the basic issue. The relationship between strategic planning and company performance lies at the very heart of the discipline, yet no clear summary statement has been made about the numerous empirical findings dealing with this subject.

The purpose of this paper is to directly confront this problem by applying meta-analysis to the past research on formal planning and performance in small firms. Meta-analyses have previously been conducted on a variety of issues in the study of organizations. For example: Petty, McGee, and Cavender (1984) used meta-analysis to integrate the findings of fifteen studies relating job satisfaction with individual performance. Scott and Taylor (1985) used meta-analysis on the research examining the effects of job satisfaction on absenteeism, and Gooding and Wagner (1985) employed the technique to review the relationship between organizational size and performance. Schwenk (1989) outlined the potential uses of meta-analysis for strategic management research and specifically called for an analysis of the formal planning/performance literature. As a result of their meta-analysis, Capon, Farley, and Hoenig (1990) also argued for more analysis on the effectiveness of planning.

FORMAL STRATEGIC PLANNING AND THE PERFORMANCE OF SMALL FIRMS

We were able to draw twenty-six studies from the small business literature examining the relationship between strategic planning and financial performance. We chose to focus on small business for three reasons: because of the large number of rigorous studies in the area reporting complete research results, because of the interesting debate over the merits of strategic planning implied in these studies, and because the focus on small companies allows our analysis to be narrow enough to be meaningful, yet broad enough to apply to a wide range of firms.

Even though some have concluded that small firms do not commonly practice

strategic planning (Robinson & Pearce, 1984; Sexton & Van Auken, 1985; Gable & Topol, 1987), there have been several studies that have found a positive relationship between strategic planning and performance in these companies. For example, Robinson (1982) found that small businesses that employed consultants to help with strategic planning performed better than firms that did not. Bracker, Keats, and Pearson (1988) found that small electronics firms that engaged in sophisticated strategic planning performed better than unstructured planners.

Several other studies have reported positive relationships between formal strategic planning and financial performance in small firms (Shuman, 1975; van Hoorn, 1979; Burt, 1978; Jones, 1982; Ackelsberg & Arlow, 1985; Sexton & Van Auken, 1985; Bracker & Pearson, 1986; Wood, Johnston & DeGenaro, 1988; Watts & Ormsby, 1990a). Still others have reported positive relationships among various measures of strategy content and small firm performance (Trow, 1961; Miller & Toulouse, 1986; Segev, 1987; Bracker et al., 1988).

In contrast, a number of studies have concluded that there is little or no significant relationship between strategic planning and the performance of small firms (Kallman & Shapiro, 1978; Unni, 1981; Robinson & Pearce, 1983; Robinson, Pearce, Vozikis, & Mescon, 1984; Orpen, 1985; Robinson, Logan, & Salem, 1986; Gable & Topol, 1987; Cragg & King, 1988; Shrader et al., 1989; Watts & Ormsby, 1990b). These studies report mixed planning/performance relations, and most suggest that the value of planning is mitigated by factors such as environmental uncertainty, managerial expertise, and stage of firm development.

Past reviews and studies have been conscientiously performed and have added to our knowledge of the conditions under which strategic planning might affect small firm performance. Additionally, recent research efforts have been very rigorous and several studies have employed comparable planning scales and performance measures, making results potentially more generalizable (e.g., Robinson & Pearce, 1983; Bracker & Pearson, 1986; Shrader et al., 1989). Therefore, at this point, given the number of high-quality studies, the need for drawing general conclusions through meta-analysis is crucial.

METHOD

In identifying the studies for inclusion in our meta-analysis, we reviewed all past issues of *Academy of Management Journal*, *American Journal of Small Business*, *Entrepreneurship Theory and Practice*, *Journal of Business and Entrepreneurship*, *Journal of Small Business Management*, *Journal of Small Business Strategy*, *Journal of Small Business Venturing*, *International Small Business Journal*, *Long Range Planning*, *Strategic Management Journal*, and the *Proceedings of the National Academy of Management Meetings*. We also initiated a computer search of the *Business Periodicals Index* in an effort to locate relevant studies. Based on this search, we identified an initial set of studies and examined the references to ascertain whether there were any other empirical tests of formal planning and performance in small businesses not included in the journals listed above. Additionally, several researchers in the areas of finance and small business were contacted and asked if they were aware of any other field studies that might have been reported in meetings or in journals other than those we reviewed. This procedure offers reasonable assurance that we identified all relevant studies.

Once we had assembled a large number of studies, we selected those that would be included in the final analysis. It was first necessary to define the term "small business" and set size criteria for inclusion. We decided to exclude all studies in which the authors

indicated they were dealing with firms of more than 100 employees. Two studies had to be omitted because they did not meet our size criterion for small business (Burt, 1978; Segev, 1987). Further, we decided to include only those studies dealing with objective indices of performance such as sales growth and ROA rather than measurement of manager's satisfaction with performance. One study had to be excluded because it did not deal with these types of performance measures (Unni, 1981).

Some studies also had to be excluded because they did not contain sufficient information to compute effect sizes (Shuman, 1975; Kallman & Shapiro, 1978; Sexton & Van Auken, 1985; Robinson, Logan, & Salem, 1986; Naffziger & Kuratko, 1991-92). We omitted one study because it was based on a simulation rather than a field study (Watts & Ormsby, 1990b). Finally, we wished to focus on those studies that dealt with strategic planning rather than narrowly focused types of planning such as operational or succession planning (Trow, 1961; Robinson, Salem, Logan, & Pearce, 1986), or studies that dealt with related concepts such as strategic types or generic strategies (Mulford, Shrader, Chacko, & Blackburn, 1990); therefore, these studies were omitted.

Fourteen articles were included in the final meta-analysis. Table 1 gives the studies and the definition of "small business" used in each.

Meta-analytic procedures suggested by Glass, McGaw, and Smith (1981), Hunter, Schmidt, and Jackson (1982), and Rosenthal (1984) were used to transform the information from the statistical tests in each study into a common measure of effect size for these studies. Table 2 gives the sample size, dependent variables, effect sizes, and definition of planning for each of the studies. Positive effect sizes indicate a positive relationship between planning and performance, while negative effect sizes indicate a negative relationship.

The two most commonly used estimates of effect size are r (see Hunter et al., 1982) and d (see Glass et al., 1981). The d statistic, according to Rosenthal (1984, p. 39), represents the standardized differences between means, while the r statistic is related to the Pearson product-moment correlation and represents a standardized measure of association between continuous variables. The d statistic was chosen for this meta-analysis because the majority of studies operationalized planning by categories (e.g., planners vs. non-planners) and examined mean differences in performance between these categories. The d statistic, which deals with mean differences, seemed the most appropriate one to use in aggregating the results of these studies.

In calculating the d statistic, a variety of procedures were used. When data on means and standard deviations were given, d was calculated by dividing the mean difference by the pooled standard deviation (e.g., the differences in average performance for planners and non-planners divided by the averaged standard deviation for planners and non-planners). When means and standard deviations were not provided, but the results of statistical tests were reported (e.g., t -tests, F -tests, etc.), formulae given by Glass et al. (1981), Hunter et al. (1982), and Rosenthal (1984) were used to transform the significance tests into the d statistic. The d statistic can be easily transformed into r , and the use of either r or d allows us to assess the effects of statistical artifacts such as sampling error, measurement error, and restriction of range. In the present study, it was not possible, due to the lack of available data, to deal with any but the first artifact—sampling error. It is possible that the range of values of the variables in the planning studies might have been restricted. Hunter et al. (1982) and Rosenthal (1984) state that when such restriction of range is present, it is appropriate to adjust the effect sizes for it. In the studies included in this meta-analysis, no information on possible restriction of range was given so it was not possible to correct for this artifact.

It is also possible that there was error in measuring either the independent variable (planning) or the dependent variables (performance) in the studies we reviewed. How-

Table 1

Definitions of Small Business

Author/Date	Journal	Definition
Jones, 1982	JSBM	▶ Small Virginia firms
Robinson, 1982	AMJ	▶ Fewer than 50 employees
		▶ Less than \$3 million annual sales
		▶ Independently owned and operated
Robinson & Pearce, 1983	SMJ	▶ South Carolina banks;
		banks were considered small
		by industry standards (p. 198)
Robinson, Pearce, Vozikis, & Mescon, 1984	JSBM	▶ Fewer than 50 employees
		▶ Less than \$3 million in annual
		sales (independent firms)
Ackelsberg & Arlow, 1985	LRP	▶ Small business firms listed by
		Chambers of Commerce in
		six-county area in U.S. (p. 62)
Orpen, 1985	JSBM	▶ Small businesses of different
		types (p. 17)
Bracker & Pearson, 1986	SMJ	▶ Small dry cleaners—SEFA
		members (pp. 507-508)
Miller & Toulouse, 1986	AJSB	▶ Firms with fewer than 100
		employees
Gable & Topol, 1987	AJSB	▶ Fewer than 50 employees (retail
		firms in Northeast U.S.)
Bracker, Keats, & Pearson, 1988	SMJ	▶ Fewer than 100 employees
		(electronics firms)
Cragg & King, 1988	ETP	▶ Fewer than 50 employees
		▶ Independently owned and
		operated
		▶ East Midlands region of England
Wood, Johnston, & DeGenaro, 1988	JBS	▶ Small Virginia real estate firms
Shrader, Mulford, & Blackburn, 1989	JSBM	▶ Fewer than 100 employees
		(retail, service, manufacturing,
		Iowa firms)
Watts & Ormsby, 1990a	DSI Paper	▶ Mountain States banks; banks
		were considered small by
		industry standards
		▶ Independently owned and
		operated

ever, information on measurement error was not included in any of the studies and so could not be dealt with in this meta-analysis. Nevertheless, correlations for artifacts beyond sampling error generally account for very little variability in effect sizes in meta-analysis (Schmidt, Pearlman, Hunter, & Hirsch, 1985).

RESULTS

Table 3 shows the results of the meta-analyses for two types of performance measures. The first is growth in sales or revenue and the second includes several measures of return (ROA, ROS, ROI). In Table 3, d represents the average effect size across studies, σ^2_d is the variance in effect sizes, and σ^2_e represents the variance attributable to sampling error. The formula given by Hunter et al. (1984, p. 32) for correcting for sampling error was used in this meta-analysis. Finally, σd is the remaining variance in

Table 2

Studies Included in the Meta-Analysis

Study	Sample Size	Dependent Variable	Effect Size	Definition of Planning
Jones, 1982	69	ROA	.244*	Questionnaire
Robinson, 1982	202	ROS	.327	Outsider-based planning
Robinson & Pearce, 1983	50	Loan growth	-.012	Formal, non-formal planners
		Profit margin	-.034	
		ROA	.00	
Robinson, Pearce, Vozikis, & Mescon, 1984	51	Sales	1.25	Outsider-based plan intensity
		ROS	.97	
		Sales/Employee	.36	
Ackelsberg & Arlow, 1985	124	Sales growth	.36	Planning intensity
	98		.26	
Orpen, 1985	52	Sales growth	.63	Questionnaire
Bracker & Pearson, 1986	188	Revenue growth	.46	Level of planning
Miller & TouLouse, 1986	48	% Sales growth	.58	Planning orientation
		% Profit growth	.22	
		ROI	.31	
Gable & Topol, 1987	179	Sales growth	.14	Questionnaire
Bracker, Keats, & Pearson, 1988	73	Revenue growth	.91	Same as Bracker & Pearson
		Net income growth	.39	
Cragg & King, 1988	179	Sales revenue	.02	Written plans
Wood, Johnston, & DeGenaro, 1988	126	Gross income growth	.328	Questionnaire
Shrader, Mulford, & Blackburn, 1989	97	Sales	.04	Degree of formal strategic planning
		Net income	-.28	
Watts & Ormsby, 1990a	83	ROA	.82	Degree of formal strategic planning

* Positive effect sizes indicate a positive relationship between planning and performance, while negative effect sizes indicate a negative relationship.

effect sizes that is not explained by sampling error. This number is used to construct the 95% confidence interval for the average effect size. If this interval includes zero, we cannot conclude that the effect size is significant across studies.

The average effect size across studies, d , is positive, indicating a positive association between planning and sales and revenue growth. The correction for sampling error did not account for all the variance in effect sizes, as shown by the fact that σd is greater than zero. However, since the confidence interval does not include zero, we can conclude with 95% confidence that the effect is not due to chance. In other words, planning is positively related to sales and revenue growth across studies.

The relationship between planning and return measures was also significant at the .05 level. Again, not all the variance was accounted for by sampling error.

Return on sales and revenue growth were the most commonly used performance measures in the studies we reviewed. However, a few studies used other performance measures. Though there were too few studies using these measures to conduct a formal meta-analysis on them, we have computed average effect sizes and these are given below.

Three studies (Robinson et al., 1984; Cragg & King, 1988; Shrader et al., 1989) used sales (as opposed to sales growth) as a dependent variable. All three studies showed

Table 3

Results of the Meta-Analysis

Dependent Variable	Sales or Revenue Growth	ROS, ROA and ROI
Total Number of Companies	714	468
d	.400	.415
σ^2_d	.061	.081
σ^2_e	.039	.051
$\sigma\delta$.150	.170
Confidence Interval	.11 to .69	.09 to .75

positive effects for planning with an average effect size of .24. Two studies used measures of profit margin and net income (Robinson & Pearce, 1983; Shrader et al., 1989), and in both cases the effect size was negative with an average effect size of $-.19$. Finally, three studies used growth in profits or net income (Miller & TouLouse, 1986; Ackelsberg & Arlow, 1985; Bracker et al., 1988); in all cases, the effect size was positive with an average effect size of .30.

DISCUSSION

Past research and reviews examining strategic planning/performance relationships for small firms have reached differing conclusions (e.g., Robinson & Pearce, 1984; Shrader et al., 1984). Indeed, we expect the debate on the effects and extent of planning in small firms to continue (e.g., Ackelsberg & Arlow, 1985; Mulford et al., 1990). However, through the use of meta-analysis, we were able to provide straightforward support for the general assertion that strategic planning does have a significant, positive association with performance across studies. We conclude that even though the effect sizes for the fourteen individual studies analyzed are not large, the overall effect sizes for the fourteen individual studies analyzed are not large, the overall effect size from the meta-analysis is significant. Thus, it is not true that past research fails to demonstrate a link between planning and performance, though it is true that the link is somewhat subtle and difficult to detect using traditional approaches to the literature review.

While our analysis does not prove planning improves performance, it argues against the assertion that strategic planning is only appropriate for large firms. It is consistent with the claim that strategic planning promotes long-range thinking, reduces the focus on operational details, and provides a structured means for identifying and evaluating strategic alternatives, all of which improve firm performance.

Since this is the first review that clearly demonstrates a planning/performance link across studies, it strengthens the case for recommending the use of strategic planning in small firms. Regardless of whether planning is highly sophisticated (Bracker et al., 1988), or facilitated by “outsiders” (Robinson, 1982), or simply accomplished in spite of severe resource constraints (Mulford, Shrader, & Hansen, 1988), it should be seriously considered by small firm managers. Since the effect sizes for most studies are small, however, it may be that the small improvement in performance is not worth the effort involved in strategic planning unless a firm is in a very competitive industry where small differences in performance may affect the firm’s survival potential.

FUTURE RESEARCH

Since this meta-analysis merely confirmed the association between planning and performance and did not demonstrate causality, future research should address this issue through the use of longitudinal designs. Methodologies for longitudinal designs have been presented elsewhere in the literature (e.g., Shrader et al., 1984; Pearce, Freeman, & Robinson, 1987).

The fact that all of the variance in effect sizes was not explained by sampling error is also significant. It suggests that other variables may moderate the relationship between planning and performance. This finding is also clearly in line with contingency theories suggesting variables that potentially moderate the effects of strategic planning on performance (Jauch & Osborn, 1981), and with most of the small business planning literature (Robinson & Pearce, 1984). Some of these moderating variables may include: types and structures of industries (Hatten, Schendel, & Cooper, 1978), environmental uncertainty (Lindsay & Rue, 1980), competitive strategy (Beard & Dess, 1981), diversification strategy (Christensen & Montgomery, 1981), and the size and development stage of firms (Jauch & Osborn, 1981). The question then no longer is "does strategic planning affect small firm performance?" Rather, it is "under what conditions is performance enhanced by small firm strategic planning?"

As with all meta-analytic studies, our rules for inclusion of studies could be questioned. The inclusion criteria used in this paper are consistent with the literature. However, studies adopting broader or narrower rules for inclusion of studies might reach different conclusions. A number of studies had to be omitted from our meta-analysis because they did not contain sufficient information for the computation of effect sizes. This highlights the need for more complete reporting of research results in published articles on this topic. In the future, statistical tests should be included or, at a minimum, means and standard deviations should be reported. With improved reporting of research results, our ability to compare and draw conclusions will be enhanced.

The stability of the results of meta-analysis depends on the number of studies being aggregated. Since the number of studies included in this meta-analysis was relatively small, it is possible that a meta-analysis including a larger number of studies would yield different results. Therefore, we recommend that a future meta-analysis be conducted when more studies are available to confirm our results.

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