

Longitudinal Analysis of Relationships Between Planning and Performance in Small Firms

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ABSTRACT. This paper investigates causal relationships between planning and performance utilizing a longitudinal database with responses from the same 2,956 businesses over a four-year period. Results confirm the association between planning activity and performance that is evident in most extant literature. They also, however, cast doubt on the traditional perception of the causal sequence of that association. Although subject to a number of limitations, the results indicate that planning is more likely to be introduced into a small firm after a period of growth rather than before a period of growth. These results make an important contribution to understanding the planning performance relationship for two main reasons: they overcome the static data and relatively smaller sample size restrictions of many past studies; and, they provide evidence concerning the sequence of the relationship between planning and performance.

KEYWORDS: *Performance, planning, small firms.*

1. Introduction

Much of the mainstream research literature relating to both large and small firms continues to emphasise correlation between “best practice” management activities and performance. Research with this emphasis in the small firm area seems to be driven by a need to emulate larger firm activities and establish a set of “desirable” management activities that all small firms should implement. When these activities are passed onto small firm managers through appropriate knowl-

edge dissemination processes there is an expectation of a more efficient and effective small firm sector. Supporting this view are research results that are often used to imply a causal link (that correlated management activities influence performance) when little more than an association has been found. Alternate explanations for the correlation (especially that performance influences the introduction of “best practice” activities) are often ignored.

The research reported in this paper presents the opportunity to test hypotheses about the relationship between one indicator of good management activity (the existence of documented business plans) and performance (as indicated by growth in both employment and sales income). The paper commences with a review of the diversity of attempts to determine operational definitions of the performance construct both in large and small firms. A review of findings in relation to the management practice of planning and its association with performance then follows, providing both a general overview and a more concentrated small firm perspective. A description of the data set used is then presented, followed by discussion of the specific variables utilised, the research questions analysed, and the method of analysis employed. After presenting the outcomes of data analysis, the consequences of the results are discussed.

2. Assessing performance in small firms

Performance is obviously a central construct of interest in research concerned with the planning and performance relationship. However, as suggested by Venkatraman and Ramanujam (1986) “the treatment of performance in research settings is perhaps one of the thorniest issues confronting

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the academic researcher" (p. 801). One of the reasons for this is that, unfortunately, it is not always clear what performance means or what are appropriate operational definitions.

As suggested by Murphy et al. (1996), in discussing entrepreneurship research, "definitions of successful performance . . . and the variables used to measure performance vary widely" (p. 15). Proponents of conceptual frameworks for assessing performance in small firms reflect similar views. According to Keats and Bracker (1988, p. 53), performance may have a different set of meanings for small (as opposed to large) firms and consequently it may be inappropriate to apply similar measures to the assessment of performance. Hence, while they represent "performance [as] an undifferentiated, unidimensional construct" they also suggest "the term may imply a number of interpretations and appropriate measurements" (Keats and Bracker, 1988, p. 54). Lumpkin and Dess (1996) are more explicit in recognizing the multidimensional nature of the performance construct. They envision a place for traditional accounting measures such as sales growth, market share, and profitability alongside indicators of overall performance (incorporating goals, objectives and aspiration levels) as well as other indicators of stakeholder satisfaction (Lumpkin and Dess, 1996, p. 153).

This diverse nature of the performance construct is reflected in the variety of operational definitions used in recent empirical studies. Murphy et al. (1996) provide an analysis of publications for the seven years to 1993 that are classified according to dimensions of performance considered. In 51 articles studied, they found 71 different operational measures of performance that they group in eight major dimensions of which efficiency, growth and profit are most frequently used (Murphy et al., 1996, p. 16). Many of these measures are what Reid and Smith (2000) identify as relativist performance evaluation measures that ask "what goals a firm has set, and then enquires into the extent to which these goals have been achieved" (p. 168). However, they identify as a problem with such approaches a neglect of the fundamental requirement that performance evaluation cannot be divorced from the market nexus and that even "life-style" targets must ultimately enable the firm to pass the long-run test of

economic survival (Reid and Smith, 2000, p. 168). This may explain why the most frequently used measures identified by Murphy et al. (1996) are predominantly economic, and in accordance with this reasoning, the performance concern in this paper concentrates on indicators of economic success.

However, even indicators of economic success that could be used to measure performance, such as financial outcomes, are diverse. At the most basic level performance has been categorized according to static annual sales or income measures. The other common approach using financial measures is where returns on sales, assets or equity are incorporated to indicate relative profitability. But not all performance criteria are static and another approach is to differentiate firm performance by considering growth in financial attributes such as sales, income or return measures.

A difficulty with the use of such financial measures in small firms is that they usually have to be ascertained from survey responses of the firms' owners who often may not appreciate the fine distinction necessary in financial definitions. Reported profit, for example, may be before or after the owner's own remuneration. The owner's remuneration may be reflective of a market rate for similar employment, but is just as likely to be adjusted to reflect life-style wishes or personal taxation circumstances. Liabilities may include debt that is arguably equity (debt secured by personal assets) and many personal assets used in the business may not be reflected on balance sheets. Measures involving profit and returns on assets or investment may not, therefore, produce comparable outcomes. Sales growth is likely to suffer least from these potential data problems and hence provide the most consistent and comparable indicator of economic performance from a financial perspective.

Non financial indicators may also be used to measure economic performance. The most common non-financial operational performance measures used seem to be related to the number of employees. These also range from absolute numbers to measures incorporating employment growth. They also include measures of productivity that relate employment to financial

measures, such as profit or sales per employee or labor expenses as a proportion of revenue. While employee related measures are common, a range of other operational measures have also been used. These include new product success; market share; marketing and sales effectiveness; survival; and, the firm's stage in its life cycle. However, the latter measures also have the potential to suffer from interpretation problems, limiting comparability. Relating employment to financial measures (other than sales) re-introduces problems of consistency as well as comparability. While the reported number of employees may also be interpreted differently, reliance on a relative measure such as employment growth seems best able to minimize the potential bias of such interpretation.

Finally, there are also approaches that seek to develop more subjective measures of performance. Pelham (1997), for example, attempts to assess performance on the basis of a general measure of effectiveness. Kotey and Meredith (1997) use a similar approach. They develop a measure that includes variables such as increased productivity, revenue generation, improved technology, job creation, and community development. Van Gelderen et al. (2000) also seek to combine personal and economic success into a total success score including turnover, profit, personnel, personal income, goal reaching and subjective success. As well as the potential interpretation problems that exist in each of the combined elements, these measures have the added problem of potentially subsuming the importance of economic performance argued by Reid and Smith (2000), and, unless extremely well constructed, may not reflect a parsimonious and plausible measure.

The number of different measures identified in the above selective review suggest that determining appropriate indicators of economic performance that can be objectively measured has not proved to be an easy task. In the absence of parsimonious multi-dimension measures, and given the desire to rely on objective and comparable economic performance indicators it seems that measures of growth may be most appropriate. Of all the financial indicators, sales growth is likely to be free of most potential bias. Similarly employment growth seems to be the least troublesome indicator of non-financial economic per-

formance. Accordingly, the analysis in this paper measures performance in terms of sales and employment growth.

3. Understanding the planning and performance relationship

Much of the evolution of thought surrounding the planning and performance relationship in business has emerged in the consideration of strategic management issues in large corporations. This consideration seems to be well justified as Rigby (2001) reports that strategic planning is ranked number one worldwide (with 81% reported usage) in a study of the top management tools used in large corporations.

Traditionally, business practice research reflected the belief that rational economic behaviour dictated the structured evaluation of alternatives (reflected in traditional planning processes) as the dominant decision making approach in firms of all sizes (Gibson, 1997; Gibson and Cassar, 2002). A rational planning perspective was believed to be at the core of the conventional strategic management paradigm and strategic decision-making was perceived to be a sequential analytical process (Andersen, 2000).

Coupled with this dominance of an economically rational and structured planning process has been the importance attached to the relationship that such a process has with performance. As Venkatraman and Ramanujam (1986) suggest, "most strategic management theories either implicitly or explicitly underscore performance implications, since performance is the time test of any strategy" (p. 802). The fundamental strategic management model built around these understandings implied that attention to the strategic planning process would improve organizational performance.

However, support for the normative suggestion by strategic planning advocates that all firms should engage in formal strategic planning has been shown to be inconsistent and often contradictory (Pearce et al., 1987) and there has been no conclusive evidence to demonstrate performance effects (Andersen, 2000). Both Pearce et al. (1987) and Andersen (2000) include a comprehensive analysis of studies that have explored the planning and performance relationship and the

results that have influenced their conclusions. They also both suggest that some of the variations in observed relationships are associated with research design and application. Finally, the complexity of determining adequate measures of performance and the ongoing use of a "wide array of operationalizing schemes" (Venkatraman and Ramanujam, 1986, p. 813), as discussed from a small firm perspective in the previous section of this paper, is also identified as a contributing factor (Andersen, 2000).

Perhaps in response to the inconclusive results mentioned above or perhaps simply as a consequence of greater availability and understanding of appropriate research processes there has been a moderation of the traditional view of the planning and performance relationship. For example, Lumpkin and Dess (1995) cite Miller (1987) in suggesting the existence of at least three categories of the strategy making process: (i) rationality, involving the traditional emphasis on systematic formal planning; (ii) interaction, recognizing the importance of political bargaining and consensus building; and, (iii) assertiveness, introducing the influence of individuals, especially those with proactive risk seeking orientations. Similarly Pearce et al. (1987) suggest "a complete evaluation of the benefits of strategic planning necessitates the consideration of the nonfinancial or psychological consequences" (p. 659). Also, Andersen (2000) discusses recent moves to consider management autonomy and organizational learning in place of (or at least as a complement to) traditional strategic planning. The strategic management model may still imply a strong causal relationship between the planning process and organisational performance but now recognizes the moderating influence of factors such as individual orientations and group dynamics.

Traditional studies investigating the link between planning, other business activities and performance in small firms have mirrored the research emphasis in the large firm setting. As was the case for large firm studies, while some studies show a relationship between planning and performance, few are able to make causal assertions, and there are many studies that simply do not show any relationship (O'Neill et al., 1987).

Supporting a relationship, Schwenk and

Shrader (1993) applied a meta-analysis procedure to a range of studies completed before 1990 and found planning to be positively related to several performance measures. Similar associations have also been reported in subsequent studies. For example, Olson and Bokor (1995) using 121 firms from Fortune 500 companies show that performance is influenced by the interaction of planning formality and innovation (strategy content). Also, Rauch and Frese (1998) found initial support for a positive relationship between planning and success from a cross sectional analysis of responses from a survey of 200 German small business owner/managers. Similarly, Gibson and Cassar (2002, p. 171) used analysis of a database of 3,554 Australian firms to conclude that performance indicators related to size and sales volume are positively associated with business planning.

Results from studies questioning the relationship between planning and performance are just as evident. For example, both Risseuw and Masurel (1994) (relying on the results from a survey of 1,211 real estate agents in the Netherlands), and Lyles et al. (1993) (whose sample consists of 188 Midwestern U.S.A. firms) find only weak or moderated relationships. In a follow up survey involving 85 of their initial respondents, Rauch and Frese (1998) could not support their hypothesis that more sophisticated planning leads to more success. No association between planning formality and performance was found by McKiernan and Morris (1994) using data from a longitudinal sample of 3,000 firms in the U.K. Similarly, Lumpkin et al. (1998) found very little correlation between planning and performance in their analysis of 133 firms in Southwestern U.S.A. As Rue and Ibrahim (1998) comment "evidence regarding the relationship of these [planning] processes with . . . performance is mixed" (p. 25).

Improved understanding of the planning and performance relationship has also been evolving in studies in the small firm sector. Lumpkin and Dess (1995), for example, introduce a psychological dimension when they suggest simplicity in strategy making processes has a positive association with performance during early stages but is detrimental as organizations grow and mature (more so in a dynamic environment). Simplicity is a combination of Hart's (1992) command and symbolic modes. "This combination results in a

simplistic strategy-making process, in which enthusiasm for the vision inspired by the symbolic mode is bounded and limited by the narrow domain and directive style of command mode” (Lumpkin and Dess, 1995, p. 1398).

Van Gelderen et al. (2000) also proposes a conceptualization of strategy in small firms based on five psychological orientations centered on the individual owner/manager(s) of the organizations. They acknowledge that in small firm studies, the pervasive influence of founders and owners, and their dominance in making decisions, implies a high degree of equivalence between the individual and the organizational levels of analysis (Dickson and Weaver, 1997). Van Gelderen et al. (2000, p. 175) suggest that success is associated with a higher use of a complete planning strategy (a proactive attempt to actively structure the firms’ situation) and also with a critical point strategy (a strategy that concentrates on main issues planning) when used at an earlier phase of the business life cycle. Similarly the reactive strategy (strategy that is driven by the situation and in which actions are not planned) was found to be associated with failure.

As well as the issues surrounding adequate measures of performance, the results of studies into the relationship between planning and performance seem to be influenced by the operationalization of the planning construct. As Andersen (2000) suggests, “comprehensiveness and formality are not synonymous with strategic planning and may say little about the effectiveness of the planning process” (p. 186). Strategic planning is now recognized as a multi-faceted process that is not easily captured by a single objective measure. Nonetheless, in studies such as those already outlined, the simple existence of written plans has often been used to measure the planning activity (Berman et al., 1997). This view is supported by Matthews and Scott (1995) who also suggest that the extent to which planning documents exist (formality) has been the most widely used dimension of strategic planning in the literature (p. 36). Reliance on such a narrow definition does potentially limit a clearer understanding of the relationship between performance and the planning process. However there seems to be value in recognizing that planning is an important element of many strategies and, if it is

not confused with or represented as the strategic planning process, important understandings of performance influences can be found by simply studying the incidence of formal planning.

Despite the recent advances in recognising individual and contextual influences, the normative arguments that planning influences performance continue to find favour in small firm studies. For example, Berman et al. (1997) on the basis of a correlation between sophisticated planning and growth in revenue conclude “firms that plan produce better financial results than firms that do not plan” (p. 4). Similarly, Orser et al. (2000) suggests that “growth follows from the owner/managers intentional actions taken to plot the future course of their businesses” (p. 50) even though they show only a cross sectional association. The extent to which this view prevails, despite the equivocal support, is reflected in a recent recommendation to members of the International Labour Organization which calls for availability and accessibility of support services to include (among 23 categories) “business plan development and follow-up” (ILO, 1998). The implied outcome of such suggestions is that firms that introduce planning should be rewarded with better performance. It seems that there is still a strong intuitive appeal that “has led to a proliferation of academic and practitioner literature stressing the importance of planning, promoting models of the planning process, and offering normative advice on how to effectively design and implement strategic and operational plans” (Lumpkin et al., 1998).

While the above perspective is dominant, not all arguments suggest the direction of the relationship is one in which planning leads to improved performance. There is also support for an alternate understanding and explanation for the observed (even if equivocal) result of a relationship between planning and performance. This is that improved performance might generate conditions where planning becomes more important (Gibson, 1997). Some support for this alternative is evident in the review of past research summarized by Stone and Brush (1996) in which they suggest one of the main determinants of planning in entrepreneurial firms was the “influence of investors or banks for planning document[s]” (p. 644). They did not mention a desire for

improved performance as a determinant. Stone and Brush (1996) mount a powerful argument to suggest that the planning in entrepreneurial firms is a consequence of internal and external pressures for commitment and legitimacy but not a consequence of a desire for improved performance.

Van Gelderen et al. (2000) also suggest that "success may lead to specific strategies involving more sophisticated management and control techniques because of expanding activities and hiring new employees" (p. 165). This view is also reflected by Lumpkin and Dess (1995) in their suggestion that "as organizations grow and mature and face more complex and multifaceted environments, more complex decision-making processes are required" (p. 1398). Accordingly, it is possible that formal planning processes emerge in organizations as a consequence of improved performance and not as critical determinants of that performance.

Understanding of the planning and performance relationship in small firms is evolving. While the traditional reliance on a rational structured decision process still seems to dominate, there is increasing recognition of the greater importance of individuals in small firm settings, and also increasing acceptance of the possibility that the formal planning process follows rather than leads improved performance. While the existence of documented business plans is not, on its own, representative of strategic planning, it is indicative of strategy related activity. In the absence of other reliable measures of strategic processes, the presence of documented plans is a common proxy that is at least indicative of different approaches to strategic thinking. While comprehensive documented plans are not essential in all stages of a firm's development, they are associated with many successful strategies.

This paper seeks to further improve the understanding of the planning and performance relationship in small firms in two ways. Firstly, there is an attempt to confirm the relationship between the presence of planning in firms and the achievement of higher performance. Secondly, the two alternate explanations for the causal sequence of that relationship (that performance precedes planning or that planning precedes performance) are examined. Importantly, in this study there is no claim that the mere existence of documented

plans represents the strategic process. It recognizes, however, that as a part of that process formal planning may exist. This study is concerned only with the relationship between performance and the existence of documented plans.

4. The research

Data

The analysis in this paper utilised results from the Business Growth and Performance Survey developed by the Australian Bureau of Statistics (ABS) on behalf of the Office of Small Business (now located in the Australian Federal Government's Department of Workplace Relations and Small Business). The survey collected data for the first time after the end of the 1994–95 financial year and continued each year for the next four years.

For a firm to be included in the analysis reported in this paper it had to meet the following criteria: (1) be an active firm in each year; (2) provide responses to all surveys; (3) have less than 200 full-time equivalent employees in 1995; and (4) have positive sales each year. These criteria ensured that only operating firms with reliable data were used in the final sample. The requirement for positive sales eliminated firms that were atypical and ensured that the performance values calculated from sales data were not distorted by unusual values caused by negative signs. After applying the above criteria, a sample was obtained of 2,956 firms that provided survey responses in each of the four years from 1994–95 to 1997–98.

Variables

The following questionnaire responses have been used as surrogate definitions for the variables analyzed in this paper.

Consistent with the earlier discussion section on performance, along with the need to develop operational definitions that relate to readily obtained data sources, performance is measured by relying on appropriate and accessible financial data (sales growth) and quantifiable operational activities (employment growth) and is defined in the following way.

Employment (Sales) Growth is determined as the end period employment (sales) minus the beginning period

employment (sales) all divided by the beginning period employment (sales).

While a multi-faceted process view of strategy is desirable, as already discussed the existence of written business plans is often a necessary operational definition imposed by data availability constraints. This is the case in this study. Consequently, the following definitions and subsequent results are about the relationship between the existence of formal documented plans and performance and not performance and strategic planning.

Regular planners are those respondents who responded “yes” in each year to the dichotomous question that identified the presence of a documented formal strategic plan or formal business plan.

Regular non-planners are those respondents who responded “no” in each year to the questions used in determining regular planners.

Planning introducers are those respondents who in any year responded “yes” to the questions used to identify regular planners, but who in all prior years had responded “no”.

An alternative criteria was to define planning introducers as those respondents who in any year and in all subsequent periods responded “yes” to the questions used to determine regular planners, but who in all prior years responded “no”. This is a more expansive definition but would have led to fewer firms being defined as planning introducers. Tests using this alternate definition were applied and the results found to be similar to those reported in this paper.

Hypotheses

The first hypothesis seeks to confirm the expectation reflected in the literature that firms that plan perform better than firms that do not plan. As detailed in the preceding outline of the research data, there are available four consecutive years’ responses to questions about planning activity. This enables refinement of the general test of this type of hypothesis by identifying the regular planners (who have documented plans in each year) and regular non-planners (with no documented plans in any year).

Hypothesis 1: firms that are regular planners will have better performance compared with firms that are regular non-planners.

The next two hypotheses seek to make an initial exploration of the possible causal sequence of the planning performance relationship. As outlined more fully in the preceding discussion, the traditional understanding of the relationship is that planning leads to improved performance. If this is a valid understanding then planning should be introduced prior to improved performance.

Hypothesis 2: firms that become planning introducers will have better performance following the introduction of planning, compared to firms that do not become planning introducers.

A converse understanding, also outlined in more detail in the earlier discussion, is that the introduction of formal planning follows improved performance. If this is a valid understanding then improved performance should occur before planning is introduced.

Hypothesis 3: firms that become planning introducers have better performance before the introduction of planning, compared to firms that do not become planning introducers.

Control variables

Research on entrepreneurial success also suggests that certain controls should be included. Common measures used include business size, the age of the company, the industry experience of the owner, and industry type (van Gelderen et al., 2000; Andersen, 2000; Evans, 1987). Accordingly, the latter hypotheses have been tested using multiple (OLS) regressions that model performance (employment or sales growth) as the dependent variable, and size, industry, age and the planning construct as independent variables. This approach is used to control for the influence of structural characteristics of the firm (size, industry and age), and hence isolate the relationship between planning and performance. It is not used to facilitate the development of a predictive model.

Because of the positive skewness of the employment data, size is represented as the log of employment in all regressions. Industry is controlled for by using the following dummy variables based upon two digit Australian and New Zealand Standard Industry Classification (ANZSIC) subdivisions: manufacturing; wholesale

trade; retail, accommodation, cafes and restaurants; property and business services; and, other industries incorporating mining, construction, transport, finance, cultural and personal services. Ideally, using a continuous variable would best control for firm age. Unfortunately data constraints did not allow the use of a continuous age variable for this analysis. Consequently, age was controlled for by using a series of dummy variables, where the age of the business was categorized as: 0–2 years; 2–5 years; 5–10 years; 10–20 years; and greater than 20 years. Given the assumptions associated with OLS regression and the presence of extreme values in the distribution of growth rates, cases for which the dependent performance variables were outside the two tailed limits of the 5th and 95th percentile were winsorized. Winsorization is a process that replaces the extreme observations of a distribution beyond a specified lower and upper percentile, with the value at that percentile.

There was also an expectation that there could be a lag effect in respect of the anticipated relationships in both hypothesis 2 and hypothesis 3. Van Gelderen et al. (2000), for example, suggest

there is a marginally significant lagged effect of prior success on later planning strategy use (p. 175). Teach and Schwartz (2000) also suggest, for the industry they examined, that strategic persistence (over time) and performance are related, although only weakly (p. 39). Accordingly, tests incorporating lagged relationships were also performed.

5. Results

Descriptive statistics

The aggregate responses with respect to the planning activity for the four years are summarized in Table I. Only 16.3% of all 2,956 firms are regular planners whereas 43.5% are regular non-planners. The remaining 40.2% (described in the table as irregular planners) has a differing response in at least one year. From the perspective of other questions analyzed in this paper, the proportion of firms in the final sample that become planning introducers in 1996 is 14.0%, 1997 is 5.6% and 1998 is 4.8% (highlighted by the use of italics in Table I). While not shown explicitly in

TABLE I
Planning status over the study period

	Planners in				Number	%
	1995	1996	1997	1998		
Regular non-planners	No	No	No	No	1287	43.5
Irregular planners	No	No	No	<i>Yes</i>	141	4.8
	No	No	<i>Yes</i>	No	70	2.4
	No	No	<i>Yes</i>	<i>Yes</i>	95	3.2
	No	<i>Yes</i>	No	No	130	4.4
	No	<i>Yes</i>	No	<i>Yes</i>	45	1.5
	No	<i>Yes</i>	<i>Yes</i>	No	75	2.5
	No	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	164	5.6
	<i>Yes</i>	No	No	No	130	4.4
	<i>Yes</i>	No	No	<i>Yes</i>	34	1.2
	<i>Yes</i>	No	<i>Yes</i>	No	33	1.1
	<i>Yes</i>	No	<i>Yes</i>	<i>Yes</i>	56	1.9
	<i>Yes</i>	<i>Yes</i>	No	No	83	2.8
	<i>Yes</i>	<i>Yes</i>	No	<i>Yes</i>	46	1.6
	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	No	84	2.8
Regular planners	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	483	16.3
TOTAL					2956	100.00

Note: The subset of irregular planners defined as planning introducers in each year are emphasised by the use of italics.

the table, the proportion each year of firms that have documented plans (i.e. the total "Yes" responses in each year) varies between 32.1% and 37.6%.

Regular planners versus regular non-planners

Table II provides the results from testing the relationship between employment performance of the regular planners compared to the non-planners. As for all the subsequent tables, each column contains the regression coefficient (β), the standard error (std. err.), and an indication of statistical significance. The first three columns in Table II provide the results for yearly employment growth during 1995–96, 1996–97, and 1997–98 respectively, while the fourth column reports the results for employment growth over the entire sample period. As expected, regular planners generally experience higher rates of employment growth, after controlling for size, age and industry influences. The relationship between the existence of documented business plans and performance measured by employment growth is positive and significant in each of the periods examined.

Similar analysis between regular planners and regular non-planners was also performed when performance is measured by sales growth. The results are not presented in a table but are available from the authors upon request. Generally the results for sales growth are slightly weaker than those for employment growth, however, regular planners do consistently experience greater sales growth in each of the three years. In addition, the sales growth over the entire sample period indicates a significant difference on the business planning variable.

Overall the employment and sales growth results support the first hypothesis that firms that are regular planners will have better performance (measured both by employment growth and sales growth) compared with firms that are regular non-planners.

Planning introduction before improved performance

Table III provides the results from testing for the causal association between the introduction of formal business planning and subsequent perfor-

mance. The sample firms analysed were all firms that were regular non-planners for all of the 1995–98 period and all firms that were not planners in 1995 and became planners in 1996. Size, age and industry coefficients are again displayed in addition to the coefficient for business planning which represents the incremental effect of introducing formal or written business planning upon the employment and sales growth of the firm. Because the sales growth results were not different from those relating to employment growth only the latter are presented in Table III. The first column provides the findings for the 1996–97 year. While the business planning coefficient is positive, this effect is not significant at conventional levels. Similar results (positive but not significant business planning coefficients) are displayed in the final column of Table III, which reports the effect of introducing planning in 1997 upon employment growth over 1997–98.

The results in Table III focus on a period of performance potentially starting anytime between one and thirteen months after the introduction of formal planning. This temporal period may not be long enough to capture the potential incremental impact of planning upon the performance of the firm, particularly if there is a lag between planning introduction and performance outcomes. Lagged relationships were tested for planning introducers in 1996 against 1997–98 performance and are reported in column two of Table III. Again the coefficient of business planning was positive but the results did not indicate a significant relationship between planning and performance. A possible additional test for the 1996 planning introducers was to combine the two years performance for 1996–98. The results of this analysis are displayed in the third column of Table III. Once again while the business planning coefficient is positive, significant effects could not be identified. Overall the results reported in Table III suggest that there is not a statistically significant relationship between planning introduction and subsequent performance and therefore hypothesis two cannot be supported.

Improved performance prior to planning

Table IV provides the results of examining if planning introducers experienced greater employ-

TABLE II
Regular planners versus regular non-planners and employment growth

	Employment growth 1995–96		Employment growth 1996–97		Employment growth 1997–98		Employment growth 1995–98	
	β	Std. err.	β	Std. err.	β	Std. err.	β	Std. err.
Log of no. of employees	-7.672	(1.346)***	-5.106	(1.187)***	-3.243	(1.172)**	-11.974	(2.107)***
Age 0–2	3.863	(2.833)	-2.857	(3.672)	-3.445	(6.266)	10.372	(4.434)*
Age 2–5	2.740	(2.174)	-0.597	(1.924)	2.777	(2.096)	7.572	(3.404)*
Age 5–10	1.775	(1.848)	-2.139	(1.606)	2.368	(1.558)	0.745	(2.894)
Age 10–20	-0.280	(1.794)	-2.590	(1.546)	0.863	(1.462)	-2.070	(2.809)
Wholesale trade	4.106	(1.850)*	-0.084	(1.642)	-0.882	(1.643)	2.886	(2.898)
Retail, accom., cafes and rest.	4.152	(2.223)	-3.009	(1.967)	1.822	(1.975)	3.858	(3.481)
Property and bus. services	2.941	(1.957)	-1.996	(1.731)	-1.926	(1.737)	-0.371	(3.065)
Other	2.888	(1.801)	0.108	(1.595)	-1.479	(1.594)	2.767	(2.821)
Business planning	5.816	(1.622)***	4.187	(1.445)***	3.612	(1.440)*	13.101	(2.541)***
Constant	7.041	(2.280)**	9.002	(1.973)***	3.738	(1.903)*	13.551	(3.571)***
N	1697		1694		1687		1697	
F test	$F(10, 1686) = 6.027$ ***		$F(10, 1683) = 2.739$ **		$F(10, 1676) = 1.906$ *		$F(10, 1686) = 7.247$ ***	
Adjusted R^2	0.029		0.010		0.005		0.036	

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

TABLE III
Performance after planning introduction

	Planning introduction occurring in 1996				Planning introduction occurring in 1997			
	Employment growth 1996–97		Employment growth 1997–98		Employment growth 1996–98		Employment growth 1997–98	
	β	Std. err.	β	Std. err.	β	Std. err.	β	Std. err.
Log of no. of employees	-3.741	(1.231)**	-3.321	(1.204)**	-6.413	(1.744)***	-2.533	(1.319)
Age 0–2	3.765	(4.192)	-6.879	(6.147)	-0.144	(5.942)	-1.882	(7.243)
Age 2–5	0.137	(2.043)	-0.640	(2.239)	1.903	(2.895)	0.026	(2.435)
Age 5–10	-2.063	(1.725)	1.448	(1.640)	-2.097	(2.445)	2.694	(1.779)
Age 10–20	-1.702	(1.658)	1.047	(1.535)	-1.107	(2.350)	0.366	(1.679)
Wholesale trade	-0.029	(1.815)	0.348	(1.806)	-1.270	(2.573)	-0.353	(1.957)
Retail, accom., cafes and rest.	-1.821	(1.974)	2.366	(1.968)	1.280	(2.798)	2.718	(2.170)
Property and bus. services	-1.990	(1.840)	-2.715	(1.834)	-4.608	(2.608)	-2.489	(1.977)
Other	-1.639	(1.632)	1.334	(1.624)	1.992	(2.313)	-0.501	(1.792)
Business planning	0.399	(1.431)	1.782	(1.415)	1.955	(2.029)	1.193	(2.015)
Constant	7.460	(2.108)***	3.635	(2.007)	10.660	(2.988)***	3.141	(2.175)
<i>N</i>	1620		1612		1620		1370	
<i>F</i> test	$F(10, 1609) = 1.440$		$F(10, 1601) = 1.840^*$		$F(10, 1609) = 2.450^{**}$		$F(10, 1359) = 1.218$	
Adjusted R^2	0.003		0.005		0.009		0.002	

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

TABLE IV
Planning introduction after performance

	Planning introduction occurring in 1996			Planning introduction occurring in 1997		
	Employment growth 1995–96	Sales growth 1995–96		Employment growth 1996–97	Sales growth 1996–97	
	β	Std. err.	β	Std. err.	β	Std. err.
Log of no. of employees	-7.457	(1.418)***	-1.798	(1.465)	-4.049	(1.361)**
Age 0–2	-0.229	(3.115)	6.470	(3.218)*	-1.731	(4.486)
Age 2–5	2.342	(2.325)	6.710	(2.403)**	-0.887	(2.259)
Age 5–10	0.368	(2.014)	0.258	(2.081)	-1.462	(1.897)
Age 10–20	-1.021	(1.951)	-0.742	(2.016)	-2.963	(1.818)
Wholesale trade	4.493	(2.077)*	-3.514	(2.146)	-0.773	(1.984)
Retail, accom., cafes and rest.	5.682	(2.263)*	0.967	(2.338)	-3.411	(2.196)
Property and bus. services	1.698	(2.110)	4.350	(2.180)*	-2.643	(2.000)
Other	0.807	(1.874)	-0.086	(1.936)	-0.681	(1.818)
Business planning	5.817	(1.632)***	2.552	(1.686)	5.209	(2.049)*
Constant	8.165	(2.464)**	7.765	(2.546)**	8.424	(2.306)***
N	1621		1621		1377	
F test	$F(10, 1610) = 5.141$ ***			$F(10, 1366) = 1.883$ *		
Adjusted R^2	0.025		0.015	0.006		

* $p < .05$; ** $p < .01$; *** $p < .001$.

ment and sales growth in the period prior to becoming introducers when compared with firms that continued not to plan. In particular, the first two columns report the relationship between performance during the 1995–96 year and the introduction of formal business planning in 1996, while columns 3 and 4 deal with 1996–97 performance and planning introduction in 1997. For both years, there is a positive and significant effect between planning adoption and employment growth with the results, although still positive, not as strong for sales growth.

The first two columns in Table V present similar results for detecting the influence of growth upon planning adoption during 1997–98. Unlike the earlier years reported in Table IV, there is no significant relationship although the relationship continues to be positive. Also in Table V the results examining the effect of the prior years' growth (1996–97) upon planning adoption in 1998 are presented in the last two columns. There is a possibility that there is a lag between the growth experienced by a firm and the introduction of formal business planning and by examining earlier periods, the growth influences upon planning introduction may be better specified. Strangely (given the results in Table IV) there is no statistically significant relationship with employment but a moderately significant association with sales growth when examining this lagged association.

The results reported in Tables IV and V indicate that all the business planning coefficients are positive, with the relationship between employment growth in 1995–96 and planning introduction in 1996 exhibiting the strongest relationship (at the 0.001 level of significance). Employment growth in 1996–97 and planning introduction in 1997, and the lagged effect of sales growth in 1996–97 and planning introduction in 1998 were also significant at the 0.05 level of significance. These results suggest moderate support for hypotheses 3.

As is evident in Tables III to V, there is low predictive power as represented by the low R^2 values in all regressions. While this is of some concern, the use of the regression technique was not to develop a predictive model but rather to evaluate the contribution of planning activity to tested outcomes. In such a scenario appropriate concentration, as has been reported in this paper,

is on the regression coefficients and not on the models goodness of fit (Goldberger, 1991). Nevertheless, an explanation for the low R^2 values was the possible "heterogeneity" of sample firms across industry and age that has been identified and investigated in other research (Evans, 1987). However, replication of the tests for specific industries failed to support such an explanation.

6. Implications and conclusion

The findings of the analysis reported in this paper are significant for several reasons. Firstly, they rely on a large and rigorously collected sample. The use of over 2,900 firms from an ABS data set means these results are based on one of Australia's largest and most reliable samples, and accordingly provide a strong basis for generalization across Australian firms.

The second significance of these results is that they provide support for the general belief that planning is more prevalent in better performing firms. The regular planners are associated with higher levels of performance across all periods analyzed.

Finally, in terms of significant results, there appears to be slightly stronger support for the notion that improved performance precedes planning introduction than for the more popular belief that planning will precede improved performance. There are some strong associations evident when the commencement of planning follows periods of improved performance measured by employment growth. There was at best, limited evidence of associations when performance after the introduction of planning was tested. Consequently these results suggest there may be greater credence to the claim that improved performance is the precursor to planning introduction, rather than the traditional view that planning activity leads to better performance. This supports van Gelderen et al.'s (2000) claim that "undifferentiated prejudice by advisors and banks as well as other influentials that top down planning is always good has to be modified" (p. 176).

These results have implications for both business policy and practice. A significant policy implication is that adoption of formal planning by small business need not be an objective of government. Encouraging formal business planning as

TABLE V
Planning introduction after performance

	Planning introduction occurring in 1998			Planning introduction occurring in 1998		
	Employment growth 1997–98	Sales growth 1997–98		Employment growth 1996–97	Sales growth 1996–97	
	β	Std. err.		β	Std. err.	Std. err.
Log of no. of employees	-2.202	(1.317)		-3.539	(1.352)**	1.222
Age 0–2	-1.174	(7.923)		-5.955	(4.708)	8.876
Age 2–5	0.373	(2.442)		0.065	(2.253)	3.687
Age 5–10	3.145	(1.785)		-3.453	(1.885)	3.028
Age 10–20	0.778	(1.674)		-2.795	(1.805)	2.282
Wholesale Trade	-1.418	(1.973)		0.020	(1.995)	1.275
Retail, accom., cafes and rest.	1.609	(2.182)		-1.210	(2.202)	-1.561
Property and bus. services	-3.374	(1.995)		-2.293	(2.011)	3.202
Other	-1.036	(1.784)		-0.299	(1.801)	3.194
Business planning	3.395	(2.168)		0.925	(2.195)	4.630
Constant	3.064	(2.180)		7.927	(2.303)**	-0.618
<i>N</i>	1341			1348		1348
<i>F</i> test	$F(10, 1330) = 1.404$			$F(10, 1337) = 1.413$		$F(10, 1337) = 1.670$
Adjusted R^2	0.003			0.003		0.005

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

a means of improving growth in the small business sector may not achieve the desired outcome. This does not mean that policy programs providing resources for small businesses to undertake planning should be eliminated, the mere fact that small firms plan and adopt planning suggests positive benefits. However as this study has shown they do not appear to be related to future growth. Wholesale encouragement of formal business planning by the small business sector does not appear warranted.

A clear implication for business practice is that small business management should not think that it is irrational not to plan. The findings of this study suggest that the use of formal planning does not necessarily result in superior performance. However, it does suggest that businesses that are better performers are more likely to use business planning.

Also, it is indeterminate from this study whether the adoption of planning by the respondents was related to attempts to cope with increased growth or more simply a legitimization device for future capital requirements, or even some other explanation. It is also unclear how useful and what particular benefits were associated with the adoption of a formal business plan. Also the results have not been able to examine the longer-term implications of business planning. Given there are only four data points available the longest lag observed between adoption of planning and performance is one year. Consequently, if formal business planning has a significant positive influence on the growth of the business in later periods, it has not been detected in this study. Such questions need to be addressed in future research.

At this stage analysis of the data has incorporated only limited treatment of possible industry effects that may be masking some associations. The opportunity exists for further research to examine the relationship between firm growth and planning on a more detailed industry basis. Also the operationalization of formal planning used in this research is narrow and uni-dimensional due to data constraints. Further research is needed that examines various other dimensions of the multi-faceted planning process and their association with performance.

Finally, there is also a need for future research to attempt to rule out alternative explanations of

causality even though this may reduce the generalizability of such studies. One approach to dealing with this problem is to follow firms from inception while controlling for exogenous factors. Alternatively, future research needs to recognize that just because an association is found there may not necessarily be a causal link. While the task may be difficult, casual relationships between business behaviors and business performance remains a very important and open question, and one that needs to be addressed in future research.

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