

An Examination of the Independent and Joint Effects of Venture Characteristics and Competitive Scope on New Venture Performance

Kenneth C. Robinson
Department of Management & Entrepreneurship
Coles College of Business
Kennesaw State University
1000 Chastain Road
Kennesaw, GA 30144-5591
770-423-6446 (w)
404-237-8238 (h)
email: krobinso@ksumail.kennesaw.edu

Please address correspondence to:
Kenneth C. Robinson
55 Pharr Road NW, Unit E101
Atlanta, GA 30305-2145

An Examination of the Independent and Joint Effects of Venture Characteristics and Competitive Scope on New Venture Performance^{*}

Abstract

Despite the importance assigned venture resources and venture age as independent variables impacting venture performance, research examining the joint impact of these firm characteristics in combination with other predictor variables has been limited. Using a sample of 112 entrepreneurial manufacturing ventures, this study found that models incorporating the joint impact of venture resources, venture age, and competitive scope accounted for 26 percent and 17 percent of the variance in profitability and sales growth respectively. These findings suggest that future new venture performance studies may offer additional insights by examining the joint impact of firm characteristics in combination with other predictor variables.

Introduction

A central responsibility of business managers and owners is to formulate effective strategies based on analysis of firm resources and environmental characteristics (Andrews, 1971; Hofer and Schendel, 1978; Vesper, 1990). It is well recognized within the strategic management literature that firm effects impact business performance, although the relative impact of these effects has been the subject of much debate (McGahan and Porter, 1997; Rumelt, 1991, Schmalensee, 1985). However, McGahan and Porter shed some light on this debate, noting that firm effects explained more than three times the variance in profitability when compared to industry effects for firms in the manufacturing sector, a notable difference from other sectors of the economy.

Prior theory and research in the fields of population ecology, strategic management, and entrepreneurship provide strong support for the importance of firm characteristics such as venture resources and venture age as independent variables impacting new venture performance (e.g., Aldrich and Auster, 1976; Chandler and Hanks, 1994; Chen and Hambrick, 1995; Cooper, 1993; Hannan and Freeman, 1984; Timmons, 1994). In addition to their direct influence, Cooper suggested that initial firm characteristics should be examined in combination with other predictor variables such as new venture strategy in order to determine the joint impact of such variables upon alternative measures of new venture performance. There is also strong support from prior theory and research that new venture strategy is an important determinant of new venture performance. There have been a relatively large number of studies which have examined the impact of the competitive scope of a venture's product/market scope upon new venture performance (e.g., Biggadike, 1976; Feeser and Willard, 1990; Kunkel, 1991; McDougall, Covin, Robinson, and Herron, 1994; Miller and Camp, 1985; Sandberg, 1986). The vast majority of these and other studies found competitive scope to be an

^{*} This research was funded in part by the Ewing Marion Kauffman Foundation and Center for Entrepreneurial Leadership, Inc.

important determinant of new venture performance. However, there is some disagreement as to whether broad or narrow competitive scope is associated with superior new venture performance.

Despite the importance assigned to venture resources and venture age as important variables impacting new venture performance, many of the new venture strategy studies have not included such variables in combinations with competitive scope in order to determine the joint impact of such variables upon measures of new venture performance. Thus, failure to include firm characteristics in models examining the impact of new venture strategy upon new venture performance may be responsible for the divergence in findings in these and other studies.

In addition, a number of authors have suggested that predictors of performance may vary according to the measure(s) of performance utilized in such studies, as such measures are not necessarily interchangeable proxies for one another (Brush and VanderWerf, 1992; Cooper, 1993; Murphy, Traylor, and Hill, 1993, McDougall *et al.*, 1994; Robinson, Kunkel, and Hofer, 1994).

Empirical examination of how firm characteristics combine with other predictor variables to impact alternative measures of new venture performance may provide important information on the relative effect of differing variables. If firm characteristics exhibit a moderating influence on measures of new venture performance, inclusion of such variables in future entrepreneurship studies may provide a better understanding of the relative role of such characteristics and other predictor variables in accounting for differences in new venture performance.

The primary purpose of this research was to examine the independent and joint effects of firm characteristics and competitive scope on alternative measures of new venture performance. Specifically, this research examined the independent and joint effects of venture resources, venture age, and competitive scope upon two alternative measures of new venture performance which prior theory and research suggest are important indicators of a venture's overall effectiveness and efficiency.

Firm Characteristics

Hofer (1975) theorized about the importance of firm characteristics as contingency variables impacting the formulation of strategy and firm performance. Subsequent research in the fields of population ecology, strategic management, and entrepreneurship have provided strong support for the independent impact of firm characteristics on measures of business performance. Specifically, venture resources and venture age are two of the primary firm characteristics which prior theory and research suggest are important determinants of new venture performance.

Venture Resources

There has been an increasing focus on the important role of resources for determining and sustaining competitive advantage for both established firms and new ventures (Connor, 1991; Grant, 1991). Hofer and Schendel (1978) distinguished between differing types of resources which should impact strategy formulation and firm performance. Hofer and Schendel noted that (1) financial resources, such as the availability of equity, and (2) physical resources, such as asset levels, are among the most

important resources of an organization. Thus, this research examined the impact of these venture resources upon new venture performance.

Venture resources are critical for new ventures for several reasons. First, adequate resources at start-up provide funds to meet cash flow requirements during the development and commercialization of products/services. Second, venture resources provide a buffer of protection to withstand adverse economic conditions and/or unexpected developments within their internal or external environment. Third, venture resources can provide the capital necessary to take advantage of market opportunities and fund future growth, particularly for high-potential ventures.

The importance of venture resources such as capital assets and availability of capital is likely to be even more important in the manufacturing sector of the economy, as ventures must overcome entry barriers such as capital requirements, economies of scale, and product differentiation advantages of established firms.

A number of works in the fields of strategic management, population ecology, and entrepreneurship have documented the liability of smallness, in which ventures have inadequate resources to compete against larger rivals (e.g., Aldrich and Auster, 1986; Hannan and Freeman, 1984; Timmons, 1994). Three studies in the field of entrepreneurship which explicitly examined the impact of venture resources on new venture performance have produced conflicting results. Thus, Cragg and King (1988) found their factor of organizational size, a measure related to venture resources, to be negatively associated with return on sales, while having no impact on sales change. In a more comprehensive examination, Chandler and Hanks (1994) confirmed the importance of venture resources, as their measure had a positive impact on both sales growth and sales volume. Finally, Shrader and Simon (1997) stated that venture resources did not impact either sales growth or return on sales. However, the model illustrated in their study included statistically insignificant interactions among venture resources and venture origin, with an overall p-value of .11. It is possible that a model with these insignificant interactions removed might result in statistically significant relationships between venture resources and return on sales, as some methodologists recommend removing such interactions for subsequent testing (Neter, Kutner, Nachtsheim and Wasserman, 1996).

In short, prior theory provides strong support for the importance of venture resources *vis-a-vis* their impact on new venture performance. Additionally, the measure of venture resources utilized in this sample is sometimes utilized as a measure of size, thus representing the liability of smallness. Thus, it is hypothesized:

H1: The level of venture resources will be positively related to new venture performance.

Venture Age

There is an abundance of support from prior research that younger ventures experience a liability of newness, which typically results in higher failure rates (e.g., Shapero and Giglierano, 1982) and lower performance (e.g., Biggadike, 1976). However, it is recognized that while young new ventures typically have lower profitability, the inverse is often true for sales growth percentages. This follows as young ventures typically have lower sales volume. Thus, comparable absolute sales dollar gains for

smaller (lower sales volume) and larger ventures will result in higher sales growth percentages for smaller ventures.

Two recent studies have confirmed the impact of age on new venture performance. Cragg and King (1988) found that young firms achieved higher sales growth, but age of firm was not related to return on sales for their sample of small firms (less than 50 employees), half of which were started prior to 1971. Similarly, Chandler and Hanks (1994) found young firms had lower sales volume, but age was not related to sales growth (profitability was not examined).

In addition, Cooper (1993: 244) noted that sample selection may have impacted prior studies stating, "Thus, very young firms that die quickly are often difficult to identify and so are often not included in samples." Therefore, it is likely that age may have an even more important impact on alternative measures of performance than that identified in a number of prior studies.

Due to the strong support from prior theory and research regarding the impact of age on new venture performance, it is hypothesized:

H2: New ventures will differ in performance based on venture age.

In addition, this study utilized two divergent measures of new venture performance, return on sales and sales growth. As noted above, the impact of age often has a differential impact on these two measures. Thus it is also hypothesized:

H2a: Venture age will be positively related to venture profitability.

H2b: Venture age will be negatively related to venture sales growth.

Competitive Scope

It is widely recognized that the competitive scope a new venture pursues has an important impact on measures of new venture performance. However, there has been substantial disagreement as to whether ventures pursuing a broad or narrow competitive scope are more successful. Early theory and research in the field of entrepreneurship suggested that new ventures should pursue a narrow competitive scope in a niche market which is neglected or underserved by larger competitors (Broom, Longenecker, and Moore, 1983; Cohn and Lindberg, 1972; Hosmer, 1957). However early research also suggested that personal savings were the primary sources of capital for new ventures (Mayer and Goldstein, 1961). Thus, the relatively untapped venture-capital and equity capital markets for new ventures in the sixties and early seventies when compared to the last 15 to 20 years may be partially responsible for some of these findings as ventures did not have an active external capital market from which to seek funds for broad growth strategies.

Following Biggadike's (1976) seminal study, a large number of new venture strategy studies have been conducted utilizing the PIMS data base of corporate-sponsored ventures. The conventional wisdom from these studies suggest that new ventures are more successful when pursuing a broad market scope (e.g., Biggadike, 1976; MacMillan and Day, 1987; Miller and Camp, 1985).

Sandberg (1986), Feeser and Willard (1990) and Kunkel (1991) provide additional support for the PIMS based studies *vis-a-vis* the advisability of pursuing a broad competitive scope for their samples of independent ventures. Sandberg (1986) examined venture capital backed ventures while Feeser and Willard (1990) and Kunkel (1990) utilized samples of ventures which had undertaken an IPO. Thus, the ventures in each of these samples had access to equity financing from external sources which enabled the pursuit of broad competitive scope.

Contrary to the above findings, McDougall *et al.* (1994) did not find a direct relationship between competitive scope and either ROS or sales growth. McDougall *et al.* acknowledged the uniqueness of their sample compared to those of the primary studies cited above, "The firms studied are not corporate ventures, they are seldom venture capital backed, they are younger and smaller - the industry upstarts" (p. 551).

The conflicting results may be due in part to the type of venture studied. It appears that ventures with access to capital resources, either through a corporate-parent, venture capitalists, or through an initial public offering, achieve superior performance when pursuing a broad competitive scope. Access to such resources allows such ventures to pursue broad competitive scope by providing the necessary monies to fund such growth.

This study utilized a sample of high potential independent new ventures which had undertaken an IPO. Thus, these ventures had access to capital resources which would allow them to effectively pursue a broad competitive scope strategy. Therefore, it is hypothesized:

H3: Broad competitive scope strategies will be positively related to venture performance.

Joint Influence of Firm Characteristics and Competitive Scope

Effective strategies involve obtaining a fit among the characteristics of the organization (strengths and weaknesses) and elements of the external environment (opportunities and threats) in order to achieve superior performance (Hofer and Schendel, 1978). Thus, it follows that each of these three elements, i.e., strategies, firm characteristics, and environmental characteristics should contribute to organizational performance outcomes.

Sandberg (1986), Kunkel (1991), and McDougall *et al.* (1992) examined the joint impact of strategy and environmental industry structural elements on new venture performance. Each of these studies provide strong support for utilizing models incorporating the joint effects of strategy and industry structure when examining the determinants of new venture performance.

Chandler and Hanks (1994) provided one of the most comprehensive studies of the joint impact of firm characteristics and venture strategy on new venture performance. They found that venture resources, venture age, and new venture strategy had a joint impact on new venture performance. This effect was an additive effect, as Chandler and Hanks did not find an interactive effect between venture resources and venture strategy. They did not test potential interactive effects between venture age and venture

strategy. Although McDougall *et al.* (1994) did not incorporate the joint impact of venture age and venture resources into their study, they suggest that these variables may be related to the inability of their ventures to realize gains in financial performance from scale benefits associated related to pursuing broad competitive scope.

In short, there is strong support from prior theory that effective strategies should be based on effective deployment of organizational resources. Furthermore, there is support from prior theory that venture age should be an important moderating variable that combines with measures of venture resources and venture strategy to impact new venture performance.

Thus, it is expected that venture resources, venture age, and competitive scope will have a joint impact on the two alternative measures of new venture performance examined in this study:

H4: Venture resources, venture age, and competitive scope will have a joint impact on venture performance.

Methods

Sample

This research utilized a longitudinal research design for a cross-section of independent new ventures in various manufacturing industries. Specifically, the sample consisted of *high-potential independent new ventures* which had undertaken an initial public offering (IPO) within the first six years of the venture's founding date. The choice of high-potential independent new ventures for the sample is important for several reasons. First, prior research (e.g., Birch, 1987; Kirchoff and Phillips, 1988) indicates that most of the growth in U.S. economy is a result of new venture formations and growth. In particular, Timmons (1994) suggests that the formation and growth of *high-potential* new ventures are responsible for the majority of this economic growth. Second, Cooper (1993) noted that research on *independent* new ventures offers many unexploited opportunities. Third, ventures in the manufacturing sector were chosen as McGahan and Porter (1997: 26) noted, "... variance in segment-specific [firm] effects is more important in manufacturing than in any other sector. On average, manufacturing may offer richer possibilities for sustainable positioning than other sectors, a possibility supported by the results of previous studies."

The final sample of high-potential independent new ventures in the manufacturing sector of the economy consisted of 112 ventures.

Data Sources

Two primary data sources were utilized to operationalize the measures. Information necessary for operationalizing firm characteristics and competitive scope were gathered from the new ventures' IPO prospectuses submitted to the Securities and Exchange Commission. Marino, Castaldi and Dollinger (1989) noted that IPO prospectuses are excellent data sources which contain a wealth of information that includes, but is not limited to, firm characteristics and strategic pursuits. Marino *et al.* further

state, "Due to reporting requirements, SEC scrutiny, and sanctions for falsification, the data sources here can be largely relied on" (p. 59). A number of other studies have also utilized IPO prospectuses as primary data sources (e.g., Kunkel, 1991; Bloodgood, Sapienza and Almeida, 1996).

The COMPUSTAT data base was utilized as the data source for gathering information necessary for operationalizing the two measures of new venture performance. COMPUSTAT is the largest available data base of information on publicly held companies in the U.S., and has been utilized with increasing frequency in strategic management and entrepreneurship studies.

Measures

This study examined the influence of firm characteristics (i.e., venture resources and venture age) and competitive scope on two alternative measures of new venture performance. As noted above, Hofer and Schendel (1978) suggest (1) financial resources, such as availability of equity, and (2) physical resources, such as asset levels, are among the most important organizational resources. Thus, venture resources was operationalized as the sum of (1) the level of assets in the quarter prior to a venture undertaking an IPO¹; and (2) the amount of proceeds which went directly to the venture (after fees and equity to shareholders). This operationalization combines the availability of equity with the asset levels of the venture prior to the IPO to represent the asset levels of the venture immediately following the IPO.

Prior studies examining the impact of venture age on new venture performance have often utilized years to operationalize this measure. However, one might expect substantial variation differences in performance for ventures one month old versus ventures 23 months old, differences which may be masked when categorizing such ventures as one or two years old.

Thus, venture age was operationalized as the number of months of actual business activities prior to the venture undertaking an IPO. This operationalization represents a more fine-grained measure of the actual age of the venture when compared to previous measures based on years.

Competitive scope was operationalized utilizing a modified version of Hofer's (1989) scope classification system developed by Kunkel (1991). Working separately, the author and an assistant professor of entrepreneurship content analyzed information contained in each venture's IPO prospectus to classify each venture's competitive scope according to the criteria shown in Table 1. Inter-rater reliability was used to check the competitive scope classification. Chi-square tests revealed a probability of less than .001 that the initial agreement level could have resulted from random chance. All discrepancies were resolved through discussion.

There has been much debate on the subject of appropriate measures of firm performance. Cooper (1993) noted that the diversity of performance measures that have been utilized in prior research makes comparisons across studies difficult. Cooper stated, "We also need to understand more fully the effects of different performance measures and whether the factors that enhance performance vary according to the measure used" (1993, p. 251). Murphy et al. (1993) determined that (1) change in sales, and (2)

¹ The level of assets at actual IPO date is not available for such ventures.

Table 1
Modified Hofer Competitive Scope Classification

MARKETS/CUSTOMERS SERVED	PRODUCTS/SERVICES OFFERED		
	Full Line	Intermediate Line	Narrow Line
All Major Segments	Broad	Broad	Intermediate
A Few Major or Several Minor Segments	Broad	Intermediate	Narrow
One to a Few Minor Segments	Intermediate	Narrow	Narrow

return on sales are the two most commonly used measures of new venture performance utilized in prior entrepreneurship studies. In addition, there often exists a tradeoff for new ventures between pursuit of sales growth versus profitability (Donaldson, 1985; McDougall et al., 1994).

Thus, this study examined the influence of firm characteristics and competitive scope on two measures of new venture performance which prior theory and research suggest are important indicators of a ventures overall effectiveness and efficiency (1) return on sales; and (2) sales growth. The use of these two measures also facilitate comparisons with prior and future studies on the influence of firm characteristics and competitive scope on new venture performance.

The average of the first three complete fiscal years following a venture's IPO was used for each of these two measures. The use of three year averages is common in prior research (e.g., Sandberg, 1986; Kunkel, 1991). In addition, the use of three year averages smoothes yearly fluctuations, which are likely to be quite extreme with this sample of new ventures, while also providing measures which are more long term in nature.

Data Analysis

This study utilized hierarchical regression analysis to test the independent and joint impact of venture resources, venture age and competitive scope on the two measures of new venture performance. For each predictor variable, analyses were conducted to determine the independent and joint impact on the two alternative measures of new venture performance.

A number of transformations were necessary to improve the fit of the regression models. First, the values of the independent variables have substantially different magnitudes. Neter *et al.* (1996) note that such conditions can lead to roundoff errors and noncomparability of regression coefficients. Thus, consistent with the recommendations of Neter et al., the independent variables were transformed through centering and scaling, resulting in values for the transformed independent variables of between -1 and 1 inclusive.

The measures of new venture performance examined in this study also required transformations in order to improve the fit of the models utilized with regard to distributions of error terms and linearity. The return on sales variable was transformed utilizing the rank transformation. Due to the distribution of the "raw" unadjusted return on sales measure, other transformations were inappropriate. The sales growth measure was positively skewed. Thus, consistent with the recommendations of Fox (1991), a constant was added to the "raw" unadjusted sales growth measure to eliminate negative values. The logarithmic transformation was then performed on the sales growth measure in order to improve the fit of the models utilized.

Results

The regression results for testing the hypotheses are presented in Table 2. Models 1, 2, and 3 test for the independent effects of venture resources, venture age, and competitive scope respectively. Model 4 tests hypothesis 4 for the joint impact of these three effects.

Variance inflation factors for Model 4 were computed to determine the potential of multicollinearity among predictor variables. All variance inflation factors were less than 1.2, indicating that multicollinearity is not a problem for this study (Neter *et al.*, 1994).

Tests were also conducted for potential interactions among these variables. Consistent with the findings of Chandler and Hanks (1994), none of these interactions were statistically significant. Thus, these were removed from the model as recommended by Neter *et al.* (1996).

Regression results for Model 1 indicated that venture resources had a positive impact on return on sales. However, venture resources did not have a statistically significant relationship with sales growth. Thus, hypothesis 1 is partially supported.

Regression results for Model 2 indicated that venture age had a positive relationship with return on sales. However, venture resources did not have a statistically significant relationship with sales growth. Thus, hypothesis 2 is partially supported. In addition, hypothesis 2a is supported regarding the positive relationship between venture age and return on sales. Hypothesis 2b predicted a negative relationship between venture age and sales growth. Although the coefficient is negative, the result is not statistically significant.

Results for Model 3 indicated that pursuit of a broad competitive scope had a positive influence on both return on sales and sales growth. Thus, hypothesis 3 is fully supported.

Finally, the results for Model 4 provide strong support of hypothesis 4 for the return on sales measure. All three of the elements had a statistically significant joint impact on return on sales. More importantly, the joint impact of these three variables combined to explain 24% of the variance for the return on sales measure. Additionally, the results for Model 4 provide partial support for hypothesis 4 for the sales growth measure, as two of the three elements had a statistically significant joint impact on sales growth. The joint impact of these variables combined to explain 17 percent of the variance for the sales growth measure.

Table 2
Regression Results for Return on Sales and Sales Change

Variable	RETURN ON SALES			
	Model 1	Model 2	Model 3	Model 4
Constant	48.37 ^d	23.94 ^c	30.02 ^d	10.23
Resources	24.34 ^c			14.12 ^a
Age		25.57 ^d		23.71 ^d
Scope			13.30 ^d	10.51 ^c
Adjusted R ²	.08 ^c	.13 ^d	.10 ^d	.24 ^d
Variable	SALES GROWTH			
	Model 1	Model 2	Model 3	Model 4
Constant	0.57 ^d	0.73 ^b	-0.51 ^b	-0.34
Resources	-0.09			-0.48 ^a
Age		-0.15		-0.14
Scope			0.53 ^d	0.60 ^d
Adjusted R ²	- .01	- .01	.15 ^d	.17 ^d

^a p < .10

^b p < .05

^c p < .01

^d p < .001

Discussion

Cooper (1993) called for integrating concepts from other fields into research on the determinants of new venture performance, and examining the impact of utilizing different performance measures on the results obtained. A number of prior studies have integrated concepts from strategic management and industrial organization economics into studies on the determinants of new venture performance. The vast majority of these studies have found that both new venture strategy and industry structure impact new venture performance, although there is some disagreement as to which strategies or industry structural conditions are most desirable.

The studies which examined the joint impact of new venture strategy and industry structure in various combinations found these models to better account for differences in new venture performance than

models examining these elements in isolation. These findings support the importance of matching a firm's strategy to the external environment.

Despite the central importance of firm characteristics (strengths and weaknesses) in the field of strategic management, most of the prior strategy and industry structure studies in the field of entrepreneurship have not examined the joint impact of firm characteristics with measures of new venture strategy and/or industry structure on alternative measures of new venture performance. The failure to include firm characteristics in models examining determinants of new venture performance may be partially responsible for the differing results regarding the attractiveness of pursuing particular strategies, given the divergent types of ventures examined in such studies.

In addition, some of these prior studies have utilized only one measure or related measures of venture performance, making comparisons across studies difficult. Although differing measures of profitability are not interchangeable proxies for one another (Robinson *et al.*, 1994), one would expect a positive relationship among such measures. Conversely, entrepreneurship researchers have determined that a tradeoff often exists for new ventures between pursuing return on sales (or other profitability measures) and sales growth. Thus, Biggadike (1976) found that firms pursuing aggressive sales growth experienced lower same period profitability. In addition, a number of other researchers have found that predictors of success vary according to the measure utilized, especially with regard to profitability and sales growth measures (e.g., Biggadike, 1976; Cragg and King, 1988; McDougall *et al.*, 1994; Shrader and Simon, 1997).

This study found that models incorporating the joint impact of venture resources, venture age, and competitive scope were essential for understanding differences in new venture profitability. Specifically, this study found that new venture resources, venture age, and competitive scope were positively related to new venture profitability. More importantly, the model incorporating the joint impact of these three elements explained 24% of the variability in new venture profitability, a vast improvement when compared to models examining these elements in isolation.

This study also found that the results obtained were somewhat dependent on the measure of new venture performance utilized. Competitive scope was the only predictor which consistently had a positive relationship with both measures of new venture performance.

Donaldson (1985: 125) discussed the tradeoffs for publicly held firms between profitability and sales growth, "Thus, by initially responding to product market forces and priorities of growth and diversification, the company becomes more dependent on the external capital market, and must then reemphasize ROI and shareholder benefit as the price of that dependency."

The limitations of this study are as follows. First, the sample of new ventures in this study are not representative of all new ventures due to the availability of equity from their initial public offering. However, these ventures do not have access to the resources of a corporate parent, which differentiates them from prior studies utilizing the PIMS data base. Second, this study did not control for environmental/industry structural elements. However, Porter and McGahan noted that firm effects are three times as important as industry effects for manufacturing firms.

The primary contribution of this research was to cast light on the importance of examining firm characteristics in combination with competitive scope, particularly with regard to return on sales. Future research should examine combinations firm characteristics with other measures of new venture strategy and industry structural variables to see if these findings hold for differing joint impacts. Future research should also utilize different samples to see if these findings are corroborated or refuted for differing types of ventures. Finally, the results of this study provide support for calls for utilizing multiple divergent measures of new venture performance. Prior findings support the importance of both return on sales and sales growth as important measures of new venture efficiency and effectiveness. Thus, research which incorporates both of these measures can determine the impact of predictors on differing performance outcomes while facilitating comparisons with both past and future research on the determinants of new venture performance.

References

- Aldrich, H. E., & Auster, E. (1986). Even dwarfs started small: Liabilities of size and age and their strategic implications. In B. M. Staw & L. L. Cummings (eds.), Research in organizational behavior, 8, 165-198. Greenwich CT: JAI Press.
- Andrews, K. (1971). The Concept of Corporate Strategy. Homewood, Illinois: Irwin.
- Biggadike, E. R. (1976). Corporate Diversification: Entry, Strategy and Performance. Boston: Division of Research, Graduate School of Business, Harvard University.
- Bloodgood, J. M., Sapienza, H. J., and Almeida, J. G. (1996). The internationalization of new high potential U.S. ventures: Antecedents and outcomes. Entrepreneurship Theory and Practice, 20(4), 61-76.
- Broom, H. N., Longenecker, J. G., & Moore, C. W. (1983). Small Business Management. Cincinnati, OH: Southwestern Publishing.
- Brush, C. G., & VanderWerf, P. A. (1992). A comparison of methods and sources for obtaining estimates of new venture performance. Journal of Business Venturing, 7, 157-170.
- Chandler, G. N., & Hanks, S. H. (1994). Market attractiveness, resource-based capabilities, venture strategies and venture performance. Journal of Business Venturing, 9, 331-349.
- Chen, M., & Hambrick, D. C. (1995). Speed, stealth and selective attack: How small firms differ from large firms in competitive behavior. Academy of Management Journal, 38, 453-482.
- Cohn, T., & Lindberg, R. A. (1972). How Management is Different in Small Companies. New York: American Management Association.
- Conner, K. R. (1991). A historical comparison of resource-based theory and five schools of thought within industrial organization economics: Do we have a new theory of the firm? Journal of Management, 17, 121-154.

- Cooper, A. C. (1993). Challenges in predicting new firm performance. Journal of Business Venturing, 241-253.
- Cragg, P. B., and King, M. (1988). Organizational characteristics and small firms' performance revisited. Entrepreneurship Theory and Practice, 13(2), 49-64.
- Donaldson, G. (1991). Financial goals and strategic consequences. In C. A. Montgomery & M. E. Porter (Eds.), Strategy: Seeking and Securing Competitive Advantage. Boston: Harvard Business School Publishing Division.
- Feeser, H. R., and Willard, G. E. (1990). Founding strategy and performance: A comparison of high and low growth firms. Strategic Management Journal, 11, 87-98.
- Fox, J. (1991). Regression Diagnostics: An Introduction. (Sage University Paper series on Quantitative Applications in the Social Sciences, series no. 07-079). Newbury Park, CA: Sage.
- Grant, R. M. (1991). A resource-based theory of competitive advantage: Implications for strategy formulation. California Management Review, Spring, 114-135.
- Hannan, M. T., & Freeman, J. (1984). Structural inertia and organizational change. American Sociological Review, 49, 149-164.
- Hofer, C. W. (1975). Toward a contingency theory of business strategy. Academy of Management Journal, 18, 784-810.
- Hofer, C. W., & Schendel, D. (1978). Strategy Formulation. St. Paul, MN: West Publishing Co.
- Hosmer, A. (1957). Small manufacturing enterprises. Harvard Business Review, 35, November-December, 111-122.
- Kunkel, S. W. (1991). The impact of strategy and industry structure on new venture performance. Unpublished doctoral dissertation, University of Georgia, Athens.
- MacMillan, I. C., & Day, D. L. (1987). Corporate ventures into industrial markets: Dynamics of aggressive entry. Journal of Business Venturing, 2, 29-40.
- Marino, K. E., Castaldi, R. M., & Dollinger, M. J. (1989). Content analysis in entrepreneurship research: The case of initial public offerings. Entrepreneurship Theory and Practice, 15(1), 51-66.
- Mayer, K. B., & Goldstein, S. (1961). The First Two Years: Problems of Small Firm Growth and Survival. Washington, D.C.: U.S. Government Printing Office.

- McDougall, P. P., Robinson, R. B., & DeNisi, A. S. (1992). Modelling new venture performance: An analysis of new venture strategy, industry structure, and venture origin. Journal of Business Venturing, *7*, 267-289.
- McDougall, P. P., Covin, J. G., Robinson, R. B., & Herron, L. (1994). The effects of industry growth and strategic breadth on new venture performance and strategy content. Strategic Management Journal, *15*, 537-554.
- McGahan, A. M., & Porter, M. E. (1997). How much does industry matter, really? Strategic Management Journal, *18*, 15-30.
- Miller, A., & Camp, B. (1985). Exploring determinants of success in corporate ventures. Journal of Business Venturing, *1*, 87-105.
- Murphy, G. B., Trailer, J. W., & Hill, R. C. (1993). Measuring performance in entrepreneurship literature: A review of the empirical literature. National United States Association for Small Business and Entrepreneurship Proceedings, 163-170.
- Neter, J., Kutner, M. H., Nachtsheim, C. J., & Wasserman, W. (1996). Applied Linear Statistical Models (4th ed.). Boston: Irwin.
- Robinson, K. C., Kunkel, S. W., & Hofer, C. W. (1994). New approaches for assessing new venture performance. In W. D. Bygrave *et al.* (Eds.), Frontiers of Entrepreneurship Research (pp. 263-277). Babson Park, MA: Babson College Center for Entrepreneurial Studies.
- Rumelt, R. P. (1991). How much does industry matter? Strategic Management Journal, *12*, 167-185.
- Sandberg, W. R. (1986). New Venture Performance. Lexington, KY: Lexington Books.
- Schmalensee, R. (1985). Do markets differ much? American Economic review, *75*, 341-351.
- Shapiro, A. N., & Giglierano, J. (1982). Exits and entries: A study in yellow pages journalism. In K. H. Vesper (Ed.), Frontiers of Entrepreneurship Research (pp. 113-141). Wellesley, MA: Babson Center for Entrepreneurial Studies.
- Shrader, R. C., & Simon, M. (1997). Corporate versus independent new ventures: Resource, strategy, and performance differences. Journal of Business Venturing, *12*, 47-66.
- Timmons, J. A. (1994). New Venture Creation (4th ed.). Boston: Irwin.
- Vesper, K. H. (1990). New Venture Strategies (2nd ed.). Englewood Cliffs, NJ: Prentice-Hall.