THE HEIZER AWARD for OUTSTANDING RESEARCH in NEW ENTERPRISE DEVELOPMENT

Year	Winning Author	Ph.D. Institution	Dissertation Title
1976	Ralph E. Biggadike	Harvard University	"Entry, Strategy, and Performance"
1977	Norman F. Fast	Harvard University	"The Evolution of Corporate New Venture Divisions"
1978 & 79	*No*	*Award*	*Given*
1980	Richard B. Robinson	University of Georgia	"An Empirical Investigation of SBDC Strategic Planning Consultation Upon the Short-Term Effectiveness of Small Business in Georgia"
1981	*No*	*Award*	*Given*
1982	Jeane Schere	The Wharton School	"Tolerance of Ambiguity as a Discriminating Variable Between Entrepreneurs and Managers"
1983	William B. Gartner	University of Washington	"An Empirical Model of the Business Startup, and Eight Entrepreneurial Archetypes"
1984	Robert K. Kazanjian	The Wharton School	"The Organizational Evolution of High Technology Ventures: The Impact of Stage of Growth on the Nature of Structure and Planning Processes"
1985	William R. Sandberg	University of Georgia	"The Determinants of New Venture Performance: Strategy, Industry Structure, and Entrepreneur"
	John E. Butler(✢)	New York University	"Opportunity and Entrepreneurship: Strategic Links in the Competitive Process"
1986 & 87	*No*	*Award*	*Given*
1988	Patricia Phillips McDougall	University of South Carolina	"An Analysis of Strategy, Entry Barriers, and Origin as Factors Explaining New Venture Performance"
	Henry R. Feeser(✢)	Purdue University	"Incubators, Entrepreneurs, Strategy, and Performance: A Comparison of High and Low Growth High Tech Firms"
1989	William D. Bygrave	Boston University	"Venture Capital Investing: A Resource Exchange Perspective"
	Mathew James Manimala(✢)	Indian Institute of Management	"Managerial Heuristics of Pioneering - Innovative Entrepreneurs: An Exploratory Study"
1990	H. John Hall	University of Georgia	"Venture Capitalists' Decision Making and the Entrepreneur: An Exploratory Investigation"
1991	Harry Jack Sapienza	University of Maryland	"Variations in Venture Capitalist-Entrepreneur Relations: Antecedents & Consequences"
	Lanny Herron(✢)	University of South Carolina	"The Effects of Characteristics of the Entrepreneur on New Venture Performance"
1992	Scott W. Kunkel	University of Georgia	"The Impact of Strategy and Industry Structure on New Venture Performance"
1993	Robert A. Berg	University of Auckland	"Equity and Non-Equity Cooperative Agreements: Implications for Small Business Performance"
1994	*No*	*Award*	*Given*
1995	Ronald K Mitchell	University of Utah	"The Composition, Classification, and Creation of New Venture Formation Expertise"
1996	Kenneth C. Robinson	University of Georgia	"Measures of Entrepreneurial Value Creation: An Investigation of the Impact of Strategy and Industry Structure on the Economic Performance of New Ventures"
	Andrew Zackarakis(✢)	University of Colorado	"The Venture Capital Investment Decision"
1997	Rodney C. Shrader	Georgia State University	"Influences on and Performance Implications of Internationalization among Publically Owned U.S. Ventures: A Risk Taking Perspective"

(✢) Denotes Winners of Certificate of Distinction.

ENTRY, STRATEGY AND PERFORMANCE

Ralph E. Biggadike, Harvard University, 1975

Entry by established firms into product-markets where they have not previously competed is an important source of corporate diversification and more competitive markets. In spite of its importance, there is little hard data on this topic. This research attempts to overcome this gap by: (1) examining the performance of a sample of 40 entrant businesses launched by firms in the Fortune top 200, and (2) trying to understand variation in entrant performance.

In their first two years of commercialization, this sample reported mean and median ROIs of -78% and -40%, and mean and median cash flow to investment ratio of -103% and -83%. In the second two years, financial performance was about half as negative, not from lower expenses but from higher sales revenues which improved operating ratios. Comparison of the thesis sample with PIMS data of The Strategic Planning Institute suggested that entrants would need eight years before their net income would become positive. Entrants' market performance was somewhat better. They achieved mean and median annual increases in sales revenues of 83% and 45%. However, their mean and median relative shares of 7% and 14% illustrate that most achieved only small market penetration. Little improvement occurred in their second two years, primarily because market growth was almost as rapid as their own sales growth.

In trying to understand variation in entrant performance, it was found that financial performance improved with share. Conversely, there was a negative association between financial performance and the rate of change in share. Further understanding of entrant performance was achieved by studying the individual influence of Relatedness, Market Structure, Entry Strategy, and Incumbent Reaction.

Relatedness refers to the nature of the relationship between the entrant business and its parent company. Forward Integration related entrants showed the worst financial and market performance throughout the first four years and Marketing entrants showed the best. Technology entrants showed similar financial performance to Forward Integration entrants initially, but performed much better in their second two years.

Entrants into markets in the growth stage showed superior performance to those that entered in the introductory or mature stages. However, only six out of forty entrants entered in the mature stage. Very rapid growth hurt financial performance, as did the tight oligopoly structure.

The best performing entry strategy appeared to involve longer product lines, broader segments, larger production scale, similar prices, and moderately better quality than incumbents. Small scale entrants exhibited the worst performance. But most entrants chose this scale of entry, deliberately it would seem, according to their low share objectives (50% targeted 10% share or less). One judgment, therefore, is that the poor financial results of this sample of entrants were largely self-inflicted.

Incumbent reaction as a direct result of entry was judged low. However, incumbents in two-thirds of the entered markets increased output -- although more as a response to market growth than to entry. Little association between level of incumbent reaction and performance was detected.

Managerial implications include the need for large scale entry into rapid growth markets; emphasis on market performance in the early years rather than financial performance; careful timing of entry; patience with Technology entrants; new skills by Forward Integration entrants. For economic theory, models covering entry into growth markets are needed as existing models cover mature markets where entry is rare.

THE EVOLUTION OF CORPORATE NEW VENTURE DIVISIONS

Norman F. Fast, Harvard University, 1976

In the wave of diversification which swept through American industry in the late 1960's, New Venture Divisions gained widespread popularity. In this study, a New Venture Division (NVD) is defined as an organizational unit whose primary functions are: (1) the investigation of potential new business opportunities, (2) the development of business plans for new ventures, and (3) the management of the early commercialization of these ventures. In the period 1965-1975, it is estimated that thirty of the one hundred largest U.S. industrial companies and as many as 25% of the Fortune 500 adopted this type of structure to facilitate new business development.

The aim of the present study is to explore how and why NVDs evolve over time. The research was carried out in two phases. In the first phase, exploratory interviews were conducted with eighteen companies which had NVDs at some point between 1965 and 1975. In the second phase, the evolution of three of these NVDs was studied in-depth.

It was found that a high proportion of NVDs were short-lived. Of the eighteen NVDs studied, nine were inoperative by 1976. These had an average life span of only four years. Of eleven NVDs established before 1970, seven were inoperative by 1976.

NVDs became inoperative in one of the following three ways: (1) Maturation, i.e., by retaining the ventures they started and growing into an operating division; (2) Redefinition, i.e., by being given a staff function; or (3) Elimination, i.e., by being disbanded.

Most of the surviving NVDs were seen to have evolved as well. Their size, objectives, approach to launching ventures, and the types of ventures they generated were modified and changed through the course of their development.

The major driving forces behind an NVDs evolution were found to be changes in the Corporate Strategic Posture, i.e., in corporate strategy, the company's financial position, the industry outlook, and top management's orientation - and the NVD's Political Posture, i.e., sponsorship of the NVD, its relationships with other departments, its sub-unit objectives and its perceived performance.

The study concludes that the tendency for an NVD to have a short life span can limit its effectiveness in launching new businesses -- a process which often takes a decade or more. However, it is possible for management to influence an NVD's evolution to achieve its desired objectives. Ten mechanisms which can be used by corporate top managements and/or NVD managers to accomplish this are described.

AN EMPIRICAL INVESTIGATION OF SBDC-STRATEGIC PLANNING CONSULTATION UPON THE SHORT TERM EFFECTIVENESS OF SMALL BUSINESS IN GEORGIA

Richard B. Robinson, University of Georgia, 1979

This study examined the impact of "outsider-based" strategic planning in small business firms. Outsider-based strategic planning, or strategic planning consultation (SPC), was operationalized using the MBA and Ph.D. student consultants at the University of Georgia Small Business Development Center (SBDC). A sample of 101 SBDC-served small firms (48 retail, 40 service, 13 manufacturers) and two control groups--a matched sample from Robert Morris Associates and a random sample of firms from a northeast Georgia bookkeeping service--were studied. Four measures of effectiveness were used: (1) sales, (2) return on sales, (3) number of employees, and (4) productivity (sales per employee). SPC was operationalized using three measures: (1) number of hours, (2) number of consultants, and (3) scope of functional coverage. Multivariate statistics were used to test 57 hypotheses.

Small firm effectiveness was significantly greater after SBDC-SPC than before. This was true regardless of type, age, and financial condition of the firms. SBDC-served firms were significantly less effective than the control groups' firms before SPC. After engaging in SPC, the SBDC-served firms were significantly more effective than their control group counterparts. While SBDC-served firms receiving a high level of SPC experienced a dramatically high increase in effectiveness and were substantially more effective than control group firms, SBDC-served firms receiving a low level of SPC did not have a significant improvement in effectiveness and were not significantly more effective than their control group counterparts. The impact of a high level of SPC was consistently and significantly greater than a lower level of SPC regardless of type, type lapse, financial condition, and experience of the owner/manager.

The results of this study indicate strategic planning, particularly "outsider-based" strategic planning, has a positive impact upon small firm effectiveness. Outsiders are a key component of small firm planning. Consultants appear of more value than a board of directors. Small firm planning is different from large firm planning on several dimensions: (1) key role of outsiders, (2) time commitment from the owner, (3) frequent, repetitive planning, (4) a basic, functional focus that is problem-oriented, and (5) a short-term time horizon. The SBDC consulting program appears of more value to the small firm than the SBI or SBA-MAO programs of management assistance. The use of business school graduate students as planning consultants is a viable and effective model. From the comparison of firms receiving a high versus a low level of SPC, this study concluded: (1) the value of SBDC consulting is derived from a high level of SPC, not a low level; (2) SBDC counseling programs should emphasize quality and depth of consulting, not the quantity of clients served; (3) SBDC programs should allocate a majority of their resources to the consulting component; and (4) SBDC components rendering the equivalent of a low level of SPC should be reevaluated or deemphasized.

TOLERANCE OF AMBIGUITY AS A DISCRIMINATING VARIABLE BETWEEN ENTREPRENEURS AND MANAGERS

Jeane Schere, The Wharton School, 1981

The central concern of this dissertation research was to add to the stock of knowledge in the literature on the traits of the entrepreneur. Specifically, the primary focus of this study was to explore the validity and usefulness of the "Tolerance of Ambiguity" construct as a discriminatory variable between entrepreneurs, corporate (internal) entrepreneurs, budding entrepreneurs, and managers. The main justification for comparing entrepreneurs and managers lies in the fact that they are both business "actors" who fulfill many similar functions (Crozier), but with one major difference: the former are self-employed and the latter are not. Also, the failure of corporate structures to accommodate the entrepreneur of entrepreneurial ventures within its boundaries suggests that we are indeed dealing with two or three different types of individuals. Consequently, such comparative investigation may be fruitful for suggesting hypotheses as to why entrepreneurs cannot function within corporate structures. This study also examined the relationship of this construct to two other constructs, namely, "Locus of Control" and "Need for Autonomy." The rationale for the examination of this relationship is to gain insight into the overall control needs of the entrepreneur. As a secondary focus, a comparison of the motives of the entrepreneur group with the other was conducted, using a non-ipsative, behaviorally-anchored instrument. The interest here was two-fold: First to gain insight into the comparative need strengths of each of the three groups; second, to assess empirically the validity of the Manifest Need Questionnaire (MNQ) instrument compared with other instruments in tapping the needs of the entrepreneur.

For the purposes of this research, entrepreneurs were defined as people who formed their own company from the bottom up. People who inherited businesses were excluded. The entrepreneurs were selected at random from the Business Firms Directory of the Delaware Valley, the Young President Organization Directory, or through referrals. The top, senior, and middle managers identified themselves as such in the questionnaire they filled out. Almost all were drawn from Focus magazine's Top 50 publicly-held Philadelphia-area non-financial corporations. The corporate entrepreneurs were identified through the questionnaire as people who, within their present or former corporation, had started a new unit, department or venture. Almost all came from the same Top 50 corporations. The budding entrepreneurs were defined as managers who indicated in the questionnaire that they could see themselves starting their own firm within the next five years. They also came from those same Philadelphia-area corporations.

The group size was determined after running a pre-test on the ambiguity tolerance of six entrepreneurs and six managers by using Jacob Cohen's sample size tables for a large effect with an F-test at a = .05 and a minimum of three groups. Twenty-seven cases per group were required to compare entrepreneurs, managers, and budding entrepreneurs. The following instruments were used in the present research: Stanley Budner's scale of tolerance of ambiguity (1961), Robert W. Norton's measurement of ambiguity tolerance (1975), Richard Steers' Manifest Needs Questionnaire (1976) and Hanna Levenson's Locus of Control scale (1974).

The internal consistencies of the various instruments used in this dissertation compared on the whole rather favorably with the ones found in earlier studies. The factor-analytic procedures conducted to assess the construct validity of the two Ambiguity Tolerance instruments and the Locus of Control instrument raised more questions than they helped solve. However, in the case of the Norton instrument, a basic rule for factor analysis was violated so that no definite conclusion can be drawn about this instrument.

AN EMPIRICAL MODEL OF THE BUSINESS STARTUP, AND EIGHT ENTREPRENEURIAL ARCHETYPES

William B. Gartner, University of Washington, 1982

The purpose of this dissertation was to generate and empirically validate a classification scheme of business startups based on an investigation of a sample of startups of new companies by alumni of university entrepreneurship courses. A two phased research methodology was used to: (1) isolate objective and measurable descriptive variables which differentiated business startups from one another, and (2) use this set of variables to develop a classification scheme that could be replicated and validated.

In the first phase of research (Describing the Business Startup), a conceptual framework was employed which outlined four separate but interrelated dimensions of the business startup: (1) characteristics of the individual who started the business, (2) characteristics of the firm that was started, (3) characteristics of the environment in which the startup occurred, (4) specific behaviors undertaken by the individual to start the business. A literature review and interviews with 130 entrepreneurs were conducted in order to discover key variables in each of the four dimensions of the business startup. Based on these variables, a questionnaire was developed and distributed to 140 entrepreneurs. Analysis of the data from 106 completed questionnaires resulted in a set of nineteen factors which accounted for 72.1 percent of the variation in the data.

In the second phase of research (Classifying the Business Startup), data from the 106 completed questionnaires was analyzed using Ward's hierarchical clustering algorithm. Eight distinct clusters of similar business startups were identified and formed the basis for eight "entrepreneurial archetypes." An archetype took the form of an "ideal" case history representing a cluster of business startups. The case histories of individual startups which were members of each cluster were examined in order to develop a prose description which outlined the salient features of each entrepreneurial archetype. The archetypes were labeled: (1) Sales to Consumer, (2) Putting the Deal Together, (3) The Professional Startup, (4) Purchasing a Firm, (5) The Expert, (6) The Aggressive Service Firm, (7) The Unique Idea for a Product/Market, (8) The Methodical Startup. Several tests were performed to determine empirically the reliability and validity of the archetypes.

A major implication of this research was that there was no fixed profile of the entrepreneur; neither was there a single entrepreneurial environment. Entrepreneurs acted in different ways to create their businesses and employed various competitive strategies in these firms. Results suggested that the variation among entrepreneurs may be as great as that between entrepreneurs and non-entrepreneurs.

THE ORGANIZATIONAL EVOLUTION OF HIGH TECHNOLOGY NEW VENTURES: THE IMPACT OF STAGE OF GROWTH ON THE NATURE OF STRUCTURE AND PLANNING PROCESSES

Robert K. Kazanjian, The Wharton School, 1983

Based upon two in depth case studies of high tech new ventures, this dissertation develops a four stage model of growth for high technology new ventures. Utilizing empirical methodologies, specific elements of the model are subsequently tested. A review of the literature finds that existing models of organizational growth and evolution define the various "Stages of Growth" through descriptions of an organization's internal structural characteristics. However, by defining "Stage of Growth" in terms of the types and dominance of problems an organization faces, a fuller understanding of growth issues becomes possible.

This dissertation is also an extension of existing contingency theories of organization design, as it looks at the firm's stage of growth as a determinant of its structure and planning process. The sequence and extent of functional specialization, as well as the firm's business level planning process, are thus seen as the product of an organizational learning process.

This research centers on high technology new ventures created within the last 15 years. Given the nature of the organizations and managers of interest, a detailed questionnaire served as the main data collection mode. A sample of 105 ventures resulted from a listing of 225 venture capitalist backed new ventures, allowing for a field research design employing statistically vigorous procedures. Research of this type is limited in the literature of new ventures, organization design, and planning.

The findings support the four stage model. Further hypotheses which propose the structural specialization of five primary functions in particular stages are supported in 4 of 5 cases. Hypotheses related to the impact of stage planning are supported in 5 of 9 cases. Analyses controlling for external variables, such as size and rate of growth, reinforced the independent effects of stage. It is proposed that knowing the firm's stage of growth enables venture managers to make informed choices and prepare themselves and their companies for later challenges.

A second wave of data collection is currently being planned to allow for longitudinal analyses to test the theory. Issues of performance will subsequently be investigated as well.

THE DETERMINANTS OF NEW VENTURE PERFORMANCE: STRATEGY, INDUSTRY STRUCTURE AND ENTREPRENEUR

William R. Sandberg, University of Georgia, 1984

New venture researchers traditionally have focused on the entrepreneur. Despite having found some differences between entrepreneurs and the general population, they have not made pre-startup distinctions between successful and unsuccessful entrepreneurs or ventures.

Strategic management and industrial organization economics have identified determinants of performance which most entrepreneurship/new venture research has neglected. Strategy and industry structure have been found to affect the performance of corporate-launched new ventures and of industry entrants.

This research sought to build theory by treating independent new ventures as a special case of the more general theories of strategy, industry structure, and performance. Preliminary field interviews with venture capitalists supplemented the literature on strategic management, industrial organization, and entrepreneurship. A conceptual framework of new venture performance was developed and nineteen propositions were derived from it and the strategic management, industrial organization, and entrepreneurship literatures.

The research addressed four major questions concerning new venture performance: (1) Which new venture business strategies are most effective?, (2) What types of industry structures aid new ventures?, (3) What are the characteristics, if any, of successful entrepreneurs?, and (4) How are all these factors related?

The research classified the strategies, industry structures, and entrepreneurs of seventeen new ventures both successful and failed. All information was gathered from the pre-startup business plans submitted to venture capitalists. Subsequent performance was measured over several years, using information from the venture capitalists and public sources.

The results indicated that new ventures were more successful when they combined product differentiation with relatively broad business definitions in growth industries or with more specialized definitions in mature industries; or when they offered heterogeneous products when industries were in disequilibrium or had not reached maturity. The entrepreneur's education, management experience, industry background, and entrepreneurial experience were not significantly related to venture performance.

The implications of this research for venture capitalists, entrepreneurs, and researchers are discussed. Advice is offered to new venture researchers on the value of practitioner interviews in developing theory and on choosing among strategy classification schemes. Frame and limited domain theories of new venture performance are urged. Research is proposed to identify venture capitalists' venture selection criteria.

OPPORTUNITY AND ENTREPRENEURSHIP: STRATEGIC LINKS IN THE COMPETITIVE PROCESS

John E. Butler, New York University, 1984

This research seeks to explain the process by which entrepreneurial behavior affects firms' prosperity. Previous research, implying that entrepreneurship is important, has failed to provide a nonrestrictive definition, clear links to entrepreneurial profit, or an explanation of how entrepreneurial behavior affects the competitive environment. This research attempts to provide a theoretical framework explaining the time ordered sequence of events leading to entrepreneurial behavior.

By defining entrepreneurship as the noticing of opportunity and including it as the major force in the market equilibrium process, the model presented in this research is able to link the market, industry, and firm to entrepreneurial profit. Because this definition of entrepreneurship is not constrained by education, cultural, or resource requirements, it's inclusion in a comprehensive industry model helps explain why variation in the level of entrepreneurial behavior by existing firms has a direct impact on both the form and quantity of entrepreneurial entry. This process of entrepreneurial entry, in turn, alters the market structure characteristics of the industry.

The entrepreneurial process is depicted using a causal map showing relationships between market structure, firm, and entrepreneurial variables. The central hypothesis of this research is that ossification accompanies firm growth, initiating a process which reduces the likelihood of entrepreneurial behavior. As the pool of available opportunities increases, the profit incentive becomes sufficient to produce entrepreneurial entry, which occurs irrespective of market structure conditions.

A sample of five manufacturing industries with varying levels of concentration covering the period from 1957 through 1977 provided the data for this research. Multivariate regression analysis was used to test the more direct links between variables in the entrepreneurial model. A computer simulation based on the relationships depicted in the research model was used to test the time ordered sequence of events theorized as producing entrepreneurial behavior.

Results from the regression analysis raised questions about the ability of firms to prevent entry unless they remain entrepreneurially proactive, thereby avoiding the negative affect of firm size on flexibility. The results of the simulation analysis, and especially those representing the experimental manipulation of variables, suggested that entrepreneurial behavior is a means to explain variation in profit, rates of failure, flexibility, and market power. These results also indicated that entrepreneurial behavior, by both existing firms and entrants, is a useful means of explaining both market structure and firm dynamics. The entrepreneurial model placed this important, and previously excluded variable into a context useful for strategic management, and the dual methods used in this research provided an example of how both variance and process theories can be combined to explain a complex process such as entrepreneurial behavior.

AN ANALYSIS OF STRATEGY, ENTRY BARRIERS, AND ORIGIN
AS FACTORS EXPLAINING NEW VENTURE PERFORMANCE

Patricia Phillips McDougall, University of South Carolina, 1987

The new venture literature has focused increased attention on the fundamental importance of strategy, industry structure, and new venture origin (parented vis-a-vis independent startup) as key determinants of new venture performance. This dissertation is the first comprehensive, empirical study that simultaneously examines these factors within a carefully selected sample of 247 new ventures in the computer and communication manufacturing industries.

Eight distinct new venture strategies were identified based on an examination of 26 different competitive tactics across all 247 firms. The differences in competitive tactics associated with each strategy were then examined in depth, thus offering a richness of detail for differentiating new venture strategies not available in previous new venture research.

This research confirmed the importance of strategy and industry structure in explaining new venture performance. It also offered strong evidence that the real key to explaining new venture performance is the interaction of these two variables. Simply stated, it is critical that the new venture entrepreneur match his or her venture's strategy with the structure of the industry segment the firm is entering. Variations in strategy-industry structure "fits" were found to account for 81 percent of the variance in new venture performance among the 247 firms examined in this study.

INCUBATORS, ENTREPRENEURS, STRATEGY AND PERFORMANCE: A COMPARISON OF HIGH AND LOW GROWTH HIGH TECH FIRMS

Henry R. Feeser, Purdue University, 1987

This research compared high and low growth firms in the computing industry along three dimensions: the characteristics of the founding entrepreneur(s), the entrepreneur(s)' previous employment with incubator(s) organizations, and the strategies used during startup.

Six hypotheses were proposed and tested. The results of these tests disclosed a profile of high growth founders and their strategies which differed markedly from that of low growth founders and strategies. Statistically significant differences were found to exist in each of the following areas: (1) and type of incubator(s) involved; (2) the nature of the markets served; (3) the size of start-up teams; (4) the initial product & competitive focus of the ventures; (5) the strategies used by the ventures; and (6) the customer focus of the ventures.

These findings suggested that high growth founders incubate in larger organizations and have more start-up experience. On the other hand, high and low growth founders and firms were equally likely to locate in close proximity to their incubator organizations, were about the same age; perceived entry barriers in a similar manner; were motivated similarly by pushes from their prior employment; had similar goals at founding; were equally likely to be pioneers; did not consider acquisition to be important to growth; were equally likely to compete in niche markets; and, with the exception of service, used similar competitive strategies.

These results were consistent with previous research regarding strategy and performance. The results did not support prior hypotheses about the characteristics of successful entrepreneurs. They were also not entirely consistent with prior findings about incubator organizations. Taken as a while, they suggested a need for a contingency theory approach to high-tech entrepreneurship rather than the broad generalization approach traditionally found in this field of study.

VENTURE CAPITAL INVESTING: A RESOURCE EXCHANGE PERSPECTIVE

William D. Bygrave, Boston University, 1989

This dissertation studied various trends in the venture capital industry from 1969 through 1987. Specifically, the investments of venture capital in portfolio companies, characteristics of the top 61 venture capital firms, influences on the flows of venture capital, and rates of return of venture capital funds were investigated. Data-base research was supplemented with field interviews of venture capitalists. As a result of exploratory work, a resource exchange model, augmented with concepts from population-ecology theory, was developed for the venture capital industry.

The principal findings were as follows: (1) after the surge in venture capital investing began in 1978, there was a trend to proportionately more investments in early-stage and high-tech companies; (2) the top 61 venture capital firms managed more than half the pool of venture capital. Moreover, at least one of those firms was invested in 73% of the portfolio companies, at least one of the top 21 firms specializing in high technology was invested in 43% of the high-tech portfolio companies, and at least one of the top 21 firms specializing in low technology was invested in 43% of the low-tech companies; (3) the top 21 high-tech specialists formed a tightly connected network; (4) the flow of venture capital appeared to be correlated primarily to the IPO and the NASDAQ market. Also, the correlation with changes in the capital gains tax rate was not significant, possibly because most new venture capital came from tax-exempt institutions; and (5) the rates of return of venture capital steadily declined from a peak of more than 30% in 1980 to single digits in 1985.

MANAGERIAL HEURISTICS OF PIONEERING-INNOVATIVE ENTREPRENEURS: AN EXPLORATORY STUDY

Mathew James Manimala, Indian Institute of Management, 1988

'Managerial heuristics' are defined as the decision-rules guiding the less programmed decisions of entrepreneurs/executives. A review of literature on entrepreneurship suggests that it is dominated by a search for economic, socio-cultural and psychological factors that explain entrepreneurial behavior. The managerial heuristics of entrepreneurs are rarely studied. Moreover, traditional research has generally viewed entrepreneurship as a unidimensional construct, and expects the same set of factors to explain all kinds of entrepreneurship. The literature survey showed no large-sample studies of innovative entrepreneurs. The present exploratory study compares the pioneering-innovative (PI) entrepreneurs with low PI entrepreneurs vis-a-vis the managerial heuristics implied in their decisions.

Data for this study were collected from 138 stories of first generation entrepreneurs published in Indian business magazines and books, and a Canadian book. In addition, interviews of 26 first generation entrepreneurs were also conducted. A pilot study of the relatively less programmed decisions reported in 40 of the published stories identified 186 decision-rules/managerial heuristics. Each of the 138 stories was then rated on a three-point scale for the presence or absence of these heuristics in it. Next, a PI index was developed based on ten different types of innovation, such as the introduction of new products or methods, the identification of new sources of supply or new markets, the use of a new marketing strategy or a new way of managing finance, the development of a new organizational structure or culture, and so on. Each entrepreneur was assigned an innovativeness score (PI index) based on the presence or absence of these ten types of innovation. Similar scores were obtained from the interview data for the 26 entrepreneurs who were interviewed. Finally, demographic data were collected on each entrepreneur and his enterprise.

To test the reliability of the researcher's ratings, two random samples from the published cases were selected and rated separately for heuristics and PI index items by two independent raters, one trained in management and the other untrained. The inter-rater correlation between the researcher and the untrained rater was 0.91, and between the researcher and the trained rater was 0.94.

For the purpose of comparative analysis, a high PI group and a low PI group were identified. Those cases scoring in the upper third of the PI index were assigned to the high PI group entrepreneurs (N=52); those scoring in the lower third were assigned to the low PI group (N=46).

These data were analyzed to yield the following results:

(1) Out of the 186 heuristics, 77 had significantly different (at $p<=0.05$) group means for the high PI and low PI groups. These were called PI heuristics. The remaining 109 heuristics were referred to as the general entrepreneurial heuristics.

(2) A classification of the above two sets of heuristics into various functional areas showed up substantial differences between common entrepreneurs and the PI entrepreneurs in terms of their heuristic orientations.

(3) A hierarchical factor analysis of the PI heuristics yielded six PI orientations.

(4) A hierarchical factor analysis of the general entrepreneurial heuristics yielded 8 general entrepreneurial orientations.

(5) A discriminant analysis showed that the PI orientations could discriminate between the low PI and the high PI groups with a probability of misclassification of 0.12. However, the addition of the general entrepreneurial orientations increased the discriminatory power and brought down the probability of misclassification to .08.

(6) A stepwise regression analysis of PI index scores on the six PI and eight general orientations showed that eight of them (five PI and three general) explained 50% of the variance in the PI index.

(7) Correlations between the ten types of innovation and the 186 heuristics showed that different sets of heuristics were associated with different types of innovation. For instance, cultural innovation was significantly (at $p<=0.01$) correlated with the largest number (47) of heuristics, while government relations innovation was correlated with the fewest (8).

(8) A classification of the high, moderate, and low PI cases according to region, time period, and industry showed (using a Chi-square analysis) that there was no significant differences vis-a-vis these factors. Thus, the hypothesis of environmental determinism was not supported.

(9) A cluster analysis of the high PI and the low PI groups separately on the basis of the six PI orientations revealed seven types of high PI cases and six types of low PI cases.

The study's limitations arise mainly out of the use of journalistic data. However, the findings throw some light on the policy orientations of pioneering-innovative entrepreneurs. The potential impacts on understanding indigenous models of management and on the training and development of entrepreneurs are discussed.

THE ENTREPRENEUR AND NEW VENTURE PERFORMANCE: AN EMPIRICAL INVESTIGATION

Howard John Hall, University of Georgia, 1989

This dissertation investigated the processes and criteria used by venture capitalists to evaluate the capabilities of founding entrepreneurs to successfully start their proposed new ventures. Conventional wisdom among venture capitalists, as well as several empirical research studies, suggests that the founding entrepreneur is a key determinant of new venture success, and is therefore a key influence in decisions regarding the funding of such ventures. There were, however, several gaps in the findings of these previous studies regarding venture capitalists' venture evaluation processes, particularly with respect to their evaluation of founding entrepreneurs.

This study aimed to fill these gaps by studying venture capitalists' decision making processes through the use of methodologies specifically designed to capture the conditional nuances in these processes as they occurred in real time. Primary among these methodologies was the gathering of simultaneous verbal protocols of the thought proceses of several different venture capitalists as they evaluated different new venture proposals.

The data generated from these verbal protocols was used to construct: (1) a process model of venture capitalists' decision making; and (2) a profile of the parameters associated with successful entrepreneurship.

This study found that venture capitalists' decision processes were substantially more complex than previously described. In particular, six separate stages were identified in this evaluation process: (1) the search for proposals; (2) proposal screening; (3) proposal assessment; (4) detailed venture evaluation and due diligence; (5) choice; and (6) investment monitoring, review, and control. In addition, it was found that the criteria that venture capitalists used to evaluate new venture proposals in stages (2) (3) & (4) of the venture evaluation process varied in kind, content, and priority -- a fact not revealed in any previous research. More significantly, this process differed substantially from the various rational, analytical processes proposed in both financial and strategic decision making theory. Nonetheless, these processes were extremely "rational" from the point of view of both effectiveness and efficiency when considerations of data availability, information processing time, and opportunity costs were considered.

Overall, the findings of this study should aid venture capitalists, entrepreneurs, and enterpreneurship/new venture researchers to better understand the nature of venture capitalist decision making and the ways it affects the new venture start-up process.

VARIATIONS IN VENTURE CAPITALIST-ENTREPRENEUR RELATIONS: ANTECEDENTS AND CONSEQUENCES

Harry Jack Sapienza, University of Maryland, 1989

The objective of this research project was to conduct an empirical examination of the contextual forces influencing the nature of venture capitalist-entrepreneur (VC-E) relations. As a secondary objective, this study examined how contextual circumstances and VC-E relations affect venture performance. While this investigation focused explicitly on VC-E relations, its larger aim was to contribute to the understanding of interorganizational and intraorganizational relations, and to the application of established organization theory to the entrepreneurial setting.

Data were gathered via field surveys of VC-E pairs and interviews with VCs and entrepreneurs. For the empirical tests, questionnaire responses from VCs were matched with responses from the corresponding entrepreneur-CEOs. The fifty-one ventures in the survey were located across the U.S. and competed in a diverse set of industries. Regression analyses were used to test hypotheses.

Results indicate that the nature of VC-E interactions covary with changes in the context. Specifically, the frequency of interaction, the openness of interaction, and the conflict in VC-E pairs vary most strongly with variations in the level of innovation pursued by the venture, the stage of the venture's development, the geographic distance separating VC-E pairs, and the experience of the entrepreneur. Further, the pursuit of differentiation strategies, more frequent interaction, more openness, and less divergence of views in VC-E pairs are associated with more effective VC involvement in the venture and higher venture performance.

Finally, this study provides evidence that VC-E relations compose an important part of the venture environment. The results also suggest that the dimensions of organizational relations examined here may be important design variables for the growth and development of businesses. Future research on context, relations, and organizational outcomes appears warranted.

EFFECTS OF THE CHARACTERISTICS OF THE ENTREPRENEUR ON NEW VENTURE PERFORMANCE

Lanny Herron, University of South Carolina, 1990

To date, research attempting to demonstrate the link between characteristics of the entrepreneur and new venture performance (NVP) has generally been inconclusive. This situation has long frustrated entrepreneurship researchers, who note that venture capitalists have repeatedly cited "the entrepreneur" as their most important investment parameter. This dissertation has reexamined this key issue and has emerged as the first known empirical study to provide strong practical and statistical evidence of the existence of the entrepreneur-NVP link. Using a heterogeneous sample of 134 ventures, it explains over 40% of the variance in NVP by measuring entrepreneurial skills and linking them to firm performance through the use of contingency methods which take account of both strategy and industry structure.

Based upon an examination of the entrepreneurship literature that attempts to link entrepreneurial characteristics to NVP, a number of reasons for the past failure to strongly verify the entrepreneur-NVP link are identified. This identification leads to the examination of three other literatures for the theoretical means of remedy: the "economics" entrepreneurship literature, the strategy implementation literature on manager matching, and the psychological skills testing literature. An examination of these literatures results in the construction of a structural model of the effects of the characteristics of the entrepreneur on NVP. This model is then used to derive and test hypotheses related to the research questions of whether and how the characteristics of the entrepreneur affect NVP.

In addition to predicting NVP, the skills of the entrepreneur are themselves found to be predicted by previously validated differential mental ability tests and by training, as well as by self-ratings. Normative propositions are derived to assist the entrepreneur and other interested parties in matching entrepreneurs to situations, and to aid in entrepreneurial training. In addition to detailing numerous and significant implications of the research for both theory and practice, the dissertation makes fifteen specific suggestions for future research.

Overall, this research confirms the importance of the entrepreneur-NVP link postulated in many works of entrepreneurship scholars, as well as the wisdom of the venture capitalists reported both anecdotally and in empirical studies. Further, it provides an indication as to why past research has failed to confirm the entrepreneur-NVP link, and, by doing so, opens the way to future research in this vital area.

THE IMPACT OF STRATEGY AND INDUSTRY STRUCTURE OF NEW VENTURE PERFORMANCE

Scott W. Kunkel, University of Georgia, 1991

This research studies the impact that new venture business strategy and the structure of the entered industry have on new venture performance. This research is important for three reasons. First, new ventures are important contributors to the health of the U.S. economy. Second, the number of new ventures and the capital committed to new ventures has been growing throughout the 1980s and into the 1990s. Third, current theory and research as to how venture strategy and industry structure influence new venture performance are incomplete.

The research progressed in two phases: theory development and empirical testing. In the theory development phase, three approaches to describing and classifying strategies -- the use of individual strategy elements, strategy taxonomies, and strategy typologies -- were evaluated *vis-a-vis* twelve criteria for effective classification systems design (Hofer, 1989). Three generic business strategy typologies -- Abell (1980), Porter (1980), and Hofer (1989) -- were evaluated *vis-a-vis* the same criteria and were each found to have one or more serious weaknesses. Therefore, four modified business strategy typologies were devised for testing in this dissertation: a Baseline Abell typology (which was used as a standard for comparing the other three typologies), a Modified Abell typology, a Modified Porter typology, and a Modified Hofer typology.

Three industry structure classification systems were also analyzed using the same twelve criteria for effective classification systems design (Hofer, 1989). Since none of these systems satisfactorily fulfilled the requirements that should be met by effective classification systems, and since knowledge of the basic attributes of industry structure does not yet exist, industry structure was examined using an individual industry structural variables approach. A review of the literature of the fields of industrial organization economics, strategic management, and new venture performance was then conducted to identify the most important individual industry structural variables according to prior theory and research in these fields. Using a point system devised for weighing the variables cited in these literatures, eight variables were selected for testing: life cycle stage, industry concentration, entry barriers, product differentiation, buyer concentration, international competition, dollar importance of the product, and purchase frequency.

The empirical phase of this research utilized data gathered from the IPO prospectuses of eighty-two independent new ventures that were less than six years old at the time they went public (1981 to 1983). Two independent raters classified the data in these prospectuses into five business strategy elements and eight industry structural variables. Because of the completeness of the data, an inter-rater reliability of 76.8% was achieved in the initial classifications (giving a probability of type alpha error of less than .001), and 100% agreement was achieved after a second round of discussions. Data analysis was performed by used of nonparametric Mann-Whitney *U* tests.

Five propositions were developed to examine the impact that the individual strategy elements have on new venture performance, four propositions were developed to examine the impact that overall business strategies have on new venture performance, eight propositions were devised to examine the impact that industry structural variables have on new venture performance, and forty propositions were devised to test the joint effects of venture strategy and industry structure on new venture performance.

Overall, this research demonstrated that improved definitions and classification systems substantially increase the statistical significance of the results generated by empirical testing, as well as corroborating Sandberg's (1984, 1986) model of new venture performance, i.e., that NVP = f [IS,S,E]. Unlike Sandberg, however, this research suggests that strategy has a greater influence on new venture performance than industry structure, although the greatest impact came from the interaction of strategy and industry structure. The primary reason for the increased importance of strategy was the greater capability of the improved classification systems to capture the essential attributes of the construct. This research also suggests that the structural characteristics of industries that are important to new ventures may be different from those important to established firms. In addition, 16 new venture strategy propositions were generated that have significance for entrepreneurs and venture capitalists.

EQUITY AND NON-EQUITY COOPERATIVE AGREEMENTS: IMPLICATIONS FOR SMALL BUSINESS PERFORMANCE

Robert A. Berg, 1992

This dissertation examines the motivations and strategies of the managing directors of small businesses who enter into interfirm cooperative agreements (IFCs) using both equity and non-equity arrangements. Concepts from the fields of economic and organizational theory, corporate strategy, and entrepreneurship are tested using both qualitative and quantitative data. The primary data were based on: (1) a two-country study across five industries that used questionnaires which were administered to a large representative population, and (2) over one hundred in-person and telephone interviews.

Small businesses are faced with some unique problems when considering whether or not to enter into interfirm cooperative agreements. These problems often arise because of limited resources in capital, human resources, and/or access to information, technology, and markets. By nature, many managing directors of small businesses seek to use other people's resources, establish networks, and maintain greater flexibility than do their counterparts in large firms. However, they may not have access to the specialist skills that are normally available in most large firms when negotiating cooperative agreements. Nor do they usually have the time to do an adequate search for the right partner. One contribution of this dissertation is its support for prior findings vis-a-vis the critical importance of partner selection and careful negotiation.

Another contribution of the dissertation is the creation of a framework that identifies the factors (derived from observation and literature) that are important both to selection of the type of interfirm cooperative agreement, and to the performance of that agreement. This framework is then converted into a performance model by assessing the statistical importance of each of the variables contained in the model. Statistically, a path analysis of the final model is able to explain nearly 50 percent of the performance of the firms in the data set. The external influence of industry and global environments, along with error terms explain most of the variance that remains.

Although this research documents the continued and increasing use of interfirm cooperative agreements among small businesses, it also highlights some differences in the strategies used by such firms. In service industries, equity interfirm cooperation is thought of as more important to the firm's performance, whereas non-equity cooperation is preferred in the manufacturing industries studied. Also, larger firms are more likely to use equity agreements than are small firms. In addition, larger firms enjoy a higher level of performance than do smaller firms using non-equity agreements.

Despite a close reliance of business on government through the early 1980's, most managing directors surveyed rated government involvement in business as being very low in importance vis-a-vis business performance. New Zealand managers were stronger in that opinion than were Australian managers. The trend away from government reliance was evident in both groups, however. The dissertation also tested eight null hypotheses that related business performance to factors such as: managing director's experience; motivation for forming IFCs; country of origin; size of the firms involved; type of IFC formed; and industry differences.

THE COMPOSITION, CLASSIFICATION, AND CREATION
OF NEW VENTURE FORMATION EXPERTISE

Ronald K. Mitchell, University of Utah, 1994

This study addresses the question: Is the occurrence of new venture formation associated with individual expertise? The research uses a multiple test of Expert Information Processing Theory (EIPT) in the New Venture Formation (NVF) setting. There are three important consequences of an affirmative answer to the research question. They are:

1. The components of expertise should conform to theoretical constructs specified by EIPT.

2. Discrimination between experts and novices using EIPT constructs should be possible, and

3. Individuals' NVF expertise should be susceptible to enhancement as asserted by EIPT.

A theoretical model of the new venture foundation process was developed, and each of these three implications was tested in three consecutive studies using survey data.

Study 1 used exploratory and confirmatory factor analysis in a LISREL model to identify three components of NVF expertise: "Arrangements," "Willingness," and "Opportunity-ability."

Study 2 employed multiple discriminant analysis to demonstrate that discrimination between NVF experts and novices is possible using the NVF component-constructs identified in Study 1.

Study 3 analyzed experimental expertise enhancement intervention using t-tests and multiple discriminant analysis to demonstrate that individuals' NVF expertise can be enhanced, as asserted by EIPT.

In this dissertation, two heretofore disparate fields, entrepreneurship theory and expert information processing theory (EIPT), are combined. This "new combination" results in the following contributions to the field of Entrepreneurship:

1. The composition of NVF expertise is delineated on the basis of empirical findings.

2. The classification of individual potential entrepreneurs into more finely discriminated categories between expert and novice is made more practical, and

3. The process of creating additional expertise in NVF novices is documented, better understood, and improved.

MEASURES OF ENTREPRENEURIAL VALUE CREATION:
AN INVESTIGATION OF THE IMPACT OF STRATEGY AND INDUSTRY STRUCTURE ON THE ECONOMIC PERFORMANCE OF INDEPENDENT NEW VENTURES

Kenneth C. Robinson, University of Georgia, 1995

This research examined: (1) the relative effectiveness of various measures of new venture performance in accurately assessing the long-term economic value creation of independent new ventures; (2) the relationships among these measures; (3) the validity and usefulness of various nonparametric and parametric statistical data analysis techniques for exploring relationships in new venture research; and (4) the influence of new venture strategy and industry structure on 10 different measures of new venture economic performance.

This research found that shareholder value created was the most effective measure in accurately assessing long-term economic value creation for new ventures. In particular, the "shareholder value created" measure of economic performance was the strongest of the 10 measures of economic performance examined in this study vis-a-vis: (1) effectively differentiating among various new venture strategies and industry structures; and (2) corroborating previous results regarding the influence of new venture strategy and industry structure on various measures of new venture performance.

In addition, this research found that the nature of the relationships among various measures of new venture performance varied significantly. More specifically, this research found that accounting based profitability rations have a statistically significant strong correlations among each other. However, the correlations among sales measures, profitability measures, and stock market measures exhibit substantial variation in the correlation coefficients. Thus, alternative measures of new venture performance are not necessarily interchangeable proxies for one another.

This research also demonstrated that the nonparametric statistical data analysis techniques utilized in this study were far superior to analogous parametric techniques in their ability to produce statistically significant findings and corroborate previously substantiated findings. In fact, the nonparametric statistical data analysis techniques produced over twice as many statistically significant results as did the analogous parametric statistical data analysis techniques. In addition, the parametric statistical data analysis techniques produced spurious findings in several instances.

This study also found that the assumptions underlying the theoretical development of the parametric statistical data analysis techniques employed in this study were substantially violated with the data utilized in this research. In addition, it was demonstrated that the parametric procedures utilized in this study were not robust with respect to the reliability of the results produced when the underlying assumptions of there techniques were violated.

Finally, this research provides general support for the model of new venture performance developed by Sandberg (1984, 1986), i.e., NVP = f(S*IS, IS, S), where NVP represents new venture performance, S represents new venture strategy, IS represents the structure of the venture's entered industry, and S*IS represents the interaction between new venture strategy and industry structure, since it found that the primary determinants of new venture performance were: (1) the interaction between strategy and industry and (2) new venture strategy. At the same time, this research supports Kunkel's (1991) finding that new venture strategy is a stronger determinant of new venture performance than industry structure. This study also produced several new findings vis-a-vis the influence of strategy and industry structure on new venture performance which were not identified in the Sandberg and Kunkel studies.

THE VENTURE CAPITAL INVESTMENT DECISION

Andrew Zacharakis, University of Colorado, 1995

Venture Capitalists (VCs) are experts at recognizing high potential new and/or early growth ventures. Businesses funded by these experts survive at a greater rate than those funded by other available sources. Nevertheless, there is room for improvement since approximately 40 percent of funded ventures fail to provide the VC any return. This dissertation uses a “lens model” approach to examine VC investment decision making, and to develop an actuarial model that quantitatively decomposes the VC investment decision into key components and recombines this information to predict the likelihood of venture success. Thus, model and extensions of it have the potential for improving the VC investment decision process.

Unlike the majority of past research, which uses ex-post techniques to investigate the VC investment decision, this thesis uses a real time policy capturing experiment involving 53 VCs from Colorado and the Silicon Valley. Each participating VC completed a decision exercise involving 50 potential ventures, which allowed the identification of each VD’s **actual decision process** vis-a-vis her/his **believed decision process**. This method, thus, removes the threats of post hoc rationalization or recall biases which might affect the findings of prior work.

This study generated several innovative findings. First, it was shown that VCs did not have a strong understanding of how they made the venture investment decision. Thus, VCs’ **actual decision process** was found to be significantly different from their **believed decision process**. Moreover, increasing the amount of information even slightly further increased the divergence between the VCs **actual** and **believed** decision processes. Also, the amount and type of information greatly affected decision accuracy, i.e., correctly predicting whether a venture will succeed or fail. In fact, the greater the volume of information available, the less accurate were the VC’s investment decisions. Finally, an actuarial model was developed based on the VC’s decision criteria that better predicted venture outcome than did the VC.

In conclusion, these findings suggest that: (1) VCs do not have a strong grasp of their decision process; (2) much of the prior research which relies on accurate introspective recall is likely biased; (3) actuarial models can improve decision accuracy because they focus attention on critical criteria; and (4) actuarial models do not suffer from cognitive overload created by the amount and type of information surrounding the new venture investment decision.

INFLUENCES ON AND PERFORMANCE IMPLICATIONS OF INTERNATIONALIZATION BY PUBLICLY OWNED U.S. NEW VENTURES: A RISK TAKING PERSPECTIVE

Rodney C. Shrader, Georgia State University, 1996

This dissertation examined the international activities of new ventures, including their entry or non-entry into international markets, the intensity of their international involvement, their foreign market choices, and their operating mode choices from a risk taking theoretic perspective.

The sample included 214 publicly owned U.S. ventures founded between 1983 and 1988 that went public within six years of founding, including 87 international new ventures (INVs) and 127 domestic new ventures (DNVs). Data from a variety of secondary sources indicated that internationalization among new ventures was influenced by the prior experience of their managers, their strategies, their organizational characteristics, and their industry's characteristics. INVs skipped theorized "stages" of internationalization and entered foreign markets while still establishing themselves domestically. The research largely confirmed a theory that depicted the internationalization of new ventures as a task of risk management. INVs managed the overall risk to which they were exposed by exploiting tradeoffs among cultural and economic uncertainties of the host countries entered, the percentage of total venture sales derived from the entered country, and the operating mode used (i.e., exporting, licensing, joint venture, or direct investment).

Entrepreneurs appeared to make internationalization decisions on a country-by-country basis, rather than using firm-wide policies. INVs used fewer operating modes requiring cooperative agreements with other firms (i.e., licensing, franchising, or joint ventures) than other operating modes. The international, technical, marketing, and new venture experience that top managers brought with them to their new ventures appeared to compensate for their venture's lack of international business experience. Global competition was a major factor influencing INVs to go international. However, the risks associated with increased global competition caused them to be conservative with regard to their intensity of involvement, their country choices, and their operating mode choices. Although low cost strategies did not motivate new ventures to enter foreign markets, INVs emphasizing low cost were more likely to rely on international sales for a higher percentage of their total sales, to enter higher risk countries, and to conduct foreign manufacturing operations. Finally, INVs experienced higher sales growth than DNVs, and were more than twice as efficient in generating sales by their employees (approximately \$197,605 per employee for INVs versus approximately \$96,248 per employee for DNVs).