



THE HUMAN CAPITAL APPROACH AND ITS APPLICABILITY TO ENTREPRENEURSHIP RESEARCH: AN EMPIRICAL EXAMINATION*

Francisco García Lillo

Universidad de Alicante (España). Departamento de Organización de Empresas

Bartolomé Marco Lajara

Universidad de Alicante (España). Departamento de Organización de Empresas

Abstract

The concept of human capital is implicit in many empirical studies of both survival and success chances of new businesses. These studies investigate the effects of the founder's education, career history, family, occupational background, and so on. However, few studies make explicit their connection to the framework of human capital theory in entrepreneurship research. The current study attempts to fill this gap in the literature by examining from this perspective, how factors such as achievement orientation, locus of control, entrepreneurial family background, managerial skills, previous experience in the industry, formal education of the entrepreneur or previous entrepreneurial experience, influence the performance of new ventures.

Key words: Theory of Human Capital, Entrepreneurship, New Ventures, Performance.

1. INTRODUCTION

Three groups of factors that affect both the survival and success chances of new enterprises can be extracted from previous research: (1) individual characteristics of the founder; (2) attributes, structural characteristics, and strategies of the new business itself; and (3) conditions characterizing the environment of a new firm (Szyperski and Nathusius, 1977; Klandt, 1984; Aldrich and Zimmer

* This paper was accepted for publication in this special issue of *Estudos de Gestão – Portuguese Journal of Management Studies* as a result of a selection criterion that elected it as one of the most significant papers in its field, from those presented at the XIIth Jornadas de Gestão Científica, na Universidade da Beira Interior, Covilhã, Portugal. Therefore, it did not pass our ordinary double blind referee process as it happens in our regular issues.

1986; Begley and Boyd, 1987; Sandberg and Hofer, 1987; Schüssler and Voss, 1988; Romanelli, 1989; Brüderl, Preisendörfer, and Ziegler, 1992; Cooper and Gimeno-Gascón, 1992; Ostgaard and Birley, 1993; McDougall, Covin, Robinson, and Herron, 1994; Stearns, Carter, Reynolds, and Williams, 1995; Shepherd and Shanley, 1998; Robinson and McDougall, 1998; Robinson, 1999; and others).

Most research in the field has found that the founder is the key to organizational success. Psychologists tend to describe entrepreneurs and founders of businesses by personality traits such as a high need for achievement (McClelland, 1961; Atkinson and Hoselitz, 1963), locus of control (Jennings and Zeithaml, 1983; Venkatapathy, 1984), tolerance of ambiguity (Gasse, 1982; Schere, 1982). Economists see them as coordinators, risk-takers, and innovators (Barreto, 1989; Hébert and Link, 1989; Baumol, 1990). Sociologists identify sociodemographic attributes of founders or see them as “displaced persons” (Collins, Moore, and Unwalla, 1964; Shapero and Sokol, 1982; Min, 1984; Brenner, 1987). Empirical studies of organizational failures often point to personal deficiencies of the founders like lack of experience in the field or managerial incompetence (Mayer and Goldstein, 1961; Boswell, 1972). Finally, the vast literature offering advice to potential founders (“How to Become a Successful Entrepreneur”) emphasizes that the individual is the key to organizational success (Stanworth, Stanworth, Granger, and Blyth, 1989).

Several objections can be raised to this personality-based perspective (Aldrich and Zimmer, 1986, pp. 14-15). Studies may be biased in favor of individual attributes by their design because it is relatively easy to observe basic attributes of founders (Fritsch, 1989). The required personal resources may be different in different industries. Furthermore, there is little appreciation of the sometimes highly transitory nature of the entrepreneurial status (Carroll and Mosakowski, 1987, p. 571). Finally, there is the negative evidence from so-called leadership research that –after more three decades of study- has failed to find consistent personal attributes of “successful leaders” (Hall, 1996).

Modern organizational theory is skeptical of endeavors that associate organizational outcomes like success or survival with attributes of individuals. For example, if organizations are seen as political entities (March and Olsen, 1976), then organizational activities and outcomes are determined by the dynamics of internal coalitions. Contingency theories (Thompson, 1967; Lawrence and Lorsch, 1967) emphasize the match of organizational structures to technologies and environmental conditions. The resource dependence school (Aldrich and Pfeffer, 1976; Pfeffer and Salancik, 1978; Pfeffer, 1982) attempts to explain organizational structures and outcomes from environmental uncertainty and environmental disturbances. Ecological approaches (Hannan and Freeman, 1977; Aldrich, 1979) also emphasize environmental factors. Thus, modern organizational theory

accentuates the structural characteristics of organizations and environmental conditions, not the attributes of individuals.

Newly founded businesses are usually small, simple organizations. In entrepreneurship research, this has led many researchers to believe that the fundamental liabilities of newness and smallness require an emphasis upon the initial decisions of the venture and the conditions of the environment in which they enter to be critical predictors of future success (Romanelli, 1989; Eisenhardt and Schoonhoven, 1990; Stearns, Carter, Reynolds, and Williams, 1995; Swaminathan, 1996; Dahlgvist, Davidsson, and Wiklund, 2000; and others). Indeed, this focus has a long theoretical and anecdotal history (Bamford, Dean, and McDougall, 1997, p. 376). However, in line with most prior research, we believe, in spite of the objections above, that the characteristics of the founder do matter.

This research was designed to explore specific predictors of new firm performance, such as achievement orientation, locus of control, previous experience in the industry, and so on. To avoid an eclectic compilation of many individual variables, we use human capital theory to examine the potential effects of individuals upon performance of new ventures. Some variables that may be important to other researchers are not included in our analysis, but we believe that a theory-guided selection of variables yields more insight than a compilation of all available variables.

2. THEORETICAL DEVELOPMENT/LITERATURE REVIEW

The success of a venture depends upon a large number of variables relating to the organization and its environment (Eisenhardt and Schoonhoven, 1990; Venkataraman, Van de Ven, Buckeye, and Hudson, 1990; Brüderl, Preisendörfer, and Ziegler, 1992; Stearns, Carter, Reynolds, and Williams, 1995; Bamford, Dean, and McDougall, 2000; Stuart, Hoang, and Hybels, 1999; and others). Recognition of this complexity has led researchers to incorporate into their studies factors such as personal, organizational, and environmental characteristics, and examine their relationships to the performance of entrepreneurial ventures (Sandberg, 1984, 1986; Begley and Boyd, 1987; Sandberg and Hofer, 1987, Kalleberg and Leicht, 1991; Flynn, 1995; Lumpkin and Dess, 1996; and others).

Lerner and Haber (2001), regarding the performance factors of tourism ventures in the Negev, Israel's southern region, propose four theoretical approaches, each of which focuses on a different central facet: 1) the environment milieu approach, focusing on the attractiveness of the venture's location, 2) the venture features approach, focusing on the venture's bundle of services, 3) the institutional support approach, and 4) the entrepreneurial human capital approach.

The human capital approach to entrepreneurship attributes the level of performance of the venture primarily to the education, experience, and skills of the entrepreneur, as well as to their personal entrepreneurial characteristics. Several studies have examined the impact of an entrepreneurial family background on business success. Whereas one study found no significant relationship between this background and new venture survival, others have found that having entrepreneurial parents was associated with greater sales levels of founders in an emerging industry (Duchesneau and Gartner, 1988; Cooper and Gimeno-Gascón, 1992, p. 305). The entrepreneur's education and its relationship to performance has also been widely examined (see, for example, Robinson and Sexton, 1994; Cooper, Gimeno-Gascón, and Woo, 1994). Despite certain inconsistent findings regarding the impact of education (Bird, 1989; Cooper and Dunkelberg, 1987; Ronstadt, 1984), in their meta-analysis Cooper and Gimeno-Gascón (1992, p. 305) concluded that most of these studies had indeed found significantly positive relationships between education and performance, that is, formal education was related to entrepreneurial performance, especially in industries which required specialized and advanced training (Bird, 1989). Research supports the role of industrial experience in successful venturing (Bird, 1993, 1995; Dunkelberg et al., 1987; Vesper, 1980). It was also found that industry-specific know-how, and business similarity, which reflects specific experience in similar business, contributed to survival and growth (Cooper, Gimeno-Gascón, and Woo, 1994; Chandler and Hanks, 1991). Vesper indicated that work experience may be more important when it is necessary to rely on inside industrial information and in highly competitive businesses. Entrepreneurial experience has also been found conducive to business performance (Ronstadt, 1988). Prior experience as an entrepreneur is a good predictor of reventuring and can contribute to a success path (Vesper, 1980). Other studies concluded that an entrepreneur's management skills were conducive to business performance and growth (Cooper and Gimeno-Gascón, 1992, p. 316; Bird, 1995; Ronstadt, 1984). Hunger and Wheelen (1996) have also argued that successful entrepreneurs are characteristically able to employ a host of different skills. Hood and Young (1993) found that financial management, accounting, marketing and sales were meaningful skill areas of successful entrepreneurs. Litzinger (1965), in a comparison of the characteristics of managers and entrepreneurs in Arizona, found that entrepreneurs tended to focus on critical managerial issues and areas that involved innovative and risk-laden activity, in contrast to manager, who tended to deal with more routine decision making and management of issues that were neither critical nor innovative. Aharoni, Maimon, and Segev (1978) found that managerial skills and personal characteristics such as risk taking and decision making are expressed in and influence business performance.

Regarding the personal attributes of entrepreneurs, Naffziger (1995) claims an emerging consensus that successful entrepreneurs are different from unsuccessful

ones, whereas other studies showed inconsistent findings. Thus, three of four studies which examined need for achievement found positive and significant correlations with performance (Cooper and Gimeno-Gascón, 1992; Begley and Boyd, 1987; Miner, 1996; Brockhaus, 1980). Regarding the impact of locus of control on performance, research shows mixed or non-significant results (Cooper and Gimeno-Gascón, 1992; Begley and Boyd, 1985; Duchesneau and Gartner, 1988; Brockhaus and Horwitz, 1986). Miller (1983) found that entrepreneurial firms generally had the most autonomous leaders.

Therefore, we hypothesize the following:

- H1: The personality characteristics of the entrepreneur, such as achievement orientation, autonomy, and locus of control, are positively related to the venture's performance.*
- H2: An entrepreneurial family background, previous experience in the industry, previous entrepreneurial experience, and managerial skills are positively related to the venture's performance.*

3. DATA, METHODS, AND VARIABLES

Data collection

The data for the study were gathered by means of interviews conducted during 2000 at 74 new ventures in Alicante (Spain). Prior to the main field study the questionnaire was tested in a pilot study by means of face-to-face interviews with ten of the respondents to examine its clarity and suitability for the manufacturing industry in Alicante. In the actual field research, 67 entrepreneurs were interviewed face-to-face by the first author using the comprehensive structured questionnaire. The rest of the questionnaires were received by fax/mail. The respondents were asked to state their answers on 5-point Likert scales. In order to ensure a high response rate, despite the length and complexity of the questionnaire, preliminary phone calls were made to the owner/entrepreneur of each venture. Since the questionnaire included variables on business performance, the respondents were assured of full confidentiality. The indices generated were reviewed for internal consistency (Cronbach's α) and they meet Nunnally's (1978) criteria for acceptable reliability. The research sample covered 63.79% of the initial population of new ventures in the area.

Eighteen main category of SIC codes, SIC 22 to SIC 39, were selected for this study. The greater number of ventures interviewed, 33.8%, would be classified in SIC codes 3143 Men's Footwear, 3144 and Women's Footwear, and 3149 Footwear, NEC, which is totally logical. In relation to number of companies, the province of

Alicante agglutinates 78.55% of the firms dedicated to these activities in the region whereas it represents 50% of the national scale. In which it concerns the occupation, the participation at regional level is of 76.4%, being of 42.39% at national level.

Of the ventures studied, 56.8% were start-ups in 1995, 28.4% in 1996 and 14.9% in 1997. The average size of these small and new firms measured by number of employees was 13.7. Indeed, more than one-quarter of the ventures, 29.7%, has up to five employees; 5.4% employed only one other person. The average sales was \$893,889.

Eighty-three percent of the respondents were males. The average age was 31: 23% were under the age of 25, 51.4% were 25-34 years old, 20.3% were 35-44 years old, and only 5.4% were upon 45 years old. Two-third of the respondents had parents had run independent businesses. The educational level of the respondents was high in comparison with the general population: only 39.2% had primary education and the remaining 60.8% had, at least, secondary education.

Methods and variables

The research hypotheses were first tested by means of Pearson correlation coefficients between each of the variables appearing in the research model and the performance of new ventures separately. Then, a multivariate examination was performed by means of a stepwise regression analysis to assess the contribution of each of the independent variables to explaining the variance of the venture's performance.

Table 1 shows the Pearson correlations coefficients among these variables and the performance measure. The stepwise regression analysis' results are showed in Table 2.

Research variables

Performance Measure: Dependent Variable

The venture's performance was measured with a modified version of an instrument developed initially by Gupta and Govindarajan (1984). The respondents were first asked to indicate on a 5-point Likert-type scale, ranging from "of little importance" to "extremely important", the degree of importance their firm attaches to each of the following financial performance criteria: return on investment, return on equity, and growth. These "importance" scores were mathematically adjusted to sum to 1 for the purpose of minimizing the impact of individual bias. The respondents were then asked to indicate on another 5 point Likert-type scale,

TABLE 1

Descriptive Statistics and Pearson Correlations

Variable	Mean	S.D.	1	2	3	4	5	6	7	8	9
1. Performance	3.50	1.05	1.00								
2. Managerial skill index	3.14	0.90	0.38**	1.00							
3. Achievement need	4.37	0.55	0.26*	0.01	1.00						
4. Autonomy	1.34	0.65	0.19	0.12	0.11	1.00					
5. External locus of control	1.72	0.63	-0.34**	-0.16	-0.24*	0.09	1.00				
6. Entrepreneurial family background	1.64	0.48	0.24*	0.00	0.03	-0.01	0.07	1.00			
7. Education level	1.93	0.88	-0.01	-0.14	-0.18	0.14	0.05	0.07	1.00		
8. Previous entrepreneurial experience	1.45	0.50	0.24*	0.27*	0.07	0.10	-0.23	0.11	-0.15	1.00	
9. Previous experience in the industry	1.84	0.37	0.28*	0.10	0.07	0.12	-0.06	0.05	0.01	0.17	1.00

* p < 0.05; ** p < 0.01; *** p < 0.001

TABLE 2

Multiple Regression Model with Performance as Dependent Variable (Stepwise Method)

Variable included in the model	B	SE B	Beta	t-ratio	p-value
Managerial skill index	0.365	0.116	0.313	3.133	0.003
External locus of control (LOC)	-0.477	0.165	-0.289	-2.893	0.005
Entrepreneurial family background (EFB)	0.531	0.213	0.245	2.488	0.015
Previous experience in the industry	0.604	0.280	0.214	-2.159	0.034
(Constant)	1.197	0.766		1.562	0.123

Multiple R = 0.57729427
F = 8.62249085

R Square = 0.3332686791
Signif F = 0.0000

R Square (adj.) = 0.2946175880

ranging from “highly dissatisfied” to “highly satisfied”, the extent to which their firm’s top managers are currently satisfied with their firm’s performance on each of these same financial performance criteria. These “satisfaction” scores were multiplied by the “importance” scores in order to compute a weighted average performance index for each firm.

The subjective measure of performance was chosen over objective data for several reasons. First, small firms are often very reluctant to provide “hard” financial data (Fiorito and LaForge, 1986; Sapienza, Smith, and Gannon, 1988). It was therefore felt that more complete financial information could be obtained with a subjective measure. Second, objective financial data on the sampled firms were not publicly available, making it impossible to check the accuracy of any reported financial performance figures. Third, assuming that accurate financial data were reported, such data on small firms are difficult to interpret (Cooper, 1979). Finally, absolute scores on financial performance criteria are affected by industry-related factors (Covin and Covin, 1990; Miller and Toulouse, 1986; Gupta, 1987). As such, directly comparing the objective financial data obtained for firms in different

industries could be misleading. This final concern was thought to be particularly critical given the diverse industry settings represented in the sample.

Independent Variables

Demographic variables. **Education** was measured on a 5-point ordinal scale, from 1 = elementary education, to 5 = academic education, Master's degree or higher.

Entrepreneurial family background was measured by a dichotomous question: 1 = neither of the parents was or had been in business, that is, was not self-employed and/or a business owner. 2 = at least one of the parents was or had been in business (see also Cooper, Gimeno-Gascón, and Woo, 1994).

Previous experience, consisting of previous entrepreneurial experience and previous experience in the industry, was examined by dichotomous questions (Hisrich and Brush, 1984): 1 = no, 2 = yes.

Personality features. **Achievement orientation** was measured by five items (Steers and Braunstein, 1976); internal consistency showed a = 0.67. **Locus of control** was assessed using Lumpkin's (1985) abbreviated LOC questionnaire. This shortened version of Rotter's (1966) original questionnaire consists of three "internal" and three "external" Likert-scaled items. It has performed well in the area of predictive validity and has shown reasonable reliability (Lumpkin, 1985); internal consistency showed a = 0.71. **Autonomy** and the desire for independence were measured by three items (Steers and Braunstein, 1976); a reliability test showed and internal consistency of a = 0.45. All the answers were given on a Likert scale, ranging from 1 = strongly disagree, to 5 = strongly agree.

Business skills index: An index was constructed on the basis of six questions, including acquiring financing, managing personnel, product innovation, ongoing business operation, strategic management, marketing and selling (Hisrich and Brush, 1984), with answers on a Likert scale, ranging from 1-poor, to 5-excellent. A reliability coefficient showed and internal consistency of a = 0.70.

4. EXAMINATION OF THE HYPOTHESES

H1 posited that the entrepreneur's personality characteristics will be positively related to the venture's performance. H2 posited that an entrepreneurial family background, education, previous experience in the industry, previous entrepreneurial experience, and managerial skills are positively related to the venture's performance.

All the Pearson correlations (Table 1) as well as the regression analysis (Table 2) point to the central role of the entrepreneur's attributes in new venture performance, thus supporting the above hypotheses. Both the Pearson correlations

and the regression analysis show the great importance of the managerial skills index ($b = 0.31$; $r = 0.38$). Surprisingly, the contribution of education is negatively associated with performance. The variance of firm performance is also mainly explained by the entrepreneurial family background (socialization within a business family), following previous experience in the industry.

As shown in Table 2, the findings concerning managerial skills provide the strongest and most systematic relationship among the entrepreneur's attributes and new venture performance. These findings indicate that the basic skills included in the index, such as financing skills, marketing ability, innovativeness or strategic planning ability are critical to the venture's performance.

In the regression analysis of the performance internal locus of control (LOC) appeared as the second significant variable ($b = -0.29$; $r = -0.33$). The important feature contributing to performance is the internal LOC and not the external one (this indicated due to the negative correlation between external LOC and performance shown in Table 2). The results in Table 2 indicate that both need for achievement (NACH) and previous entrepreneurial experience were correlated significantly with performance.

Finally, since the role of experience and know-how is central to successful venture creation (Timmons, 1994; Cooper and Gimeno-Gascón, 1992; Chandler and Hanks, 1991), in this research previous entrepreneurial experience and previous experience in the industry were significantly related to performance.

5. DISCUSSION AND CONCLUSION

One of the central questions in the study of entrepreneurship is concerned with why some new ventures succeed and others do not (Cooper and Gimeno-Gascón, 1992; Duchesneau and Garter, 1988). If we can achieve a better understanding of what influences new venture performance, this will have implications for prospective entrepreneurs, as well as their advisors and investors. If certain factors (such as industry experience or education) increase the odds for success, then entrepreneurs can appraise their own prospects with this in mind.

This research shows that new venture profitability is contingent on human capital, especially the skills of the entrepreneurs running the venture. This finding is consistent with previous research, demonstrating the focal importance of the entrepreneur's managerial skills, especially concerning the success of small ventures (Hornaday and Wheatley, 1986; Bird, 1989, 1995; Hood and Young, 1993; Lerner and Haber, 2001). Beyond the managerial skills, it was also found that the entrepreneur's personal characteristics, mainly internal locus of control but also achievement orientation, correlate with performance. Although previous studies have shown mixed or non-significant results regarding the impact of locus of control

on performance (Cooper and Gimeno-Gascón, 1992; Begley and Boyd, 1985; Bailey, 1986; Duchesneau and Gartner, 1988; Brockhaus and Horwitz, 1986), our findings tend to support a positive relationship of this personal characteristic with performance. The findings which found need for achievement to be related to higher performance broadly corroborate those of many studies (Cooper and Gimeno-Gascón, 1994; Duchesneau and Gartner, 1988; Bird, 1989). This corroborates previous findings that personality features exert a dominant influence on the subsequent success of the entrepreneur's venture (e.g., Miner, 1996; Begley and Boyd, 1987).

Previous employment in industry, or former entrepreneurial experience were also correlated with firm performance. Moreover, higher education was even negatively correlated with profitability, contrary to previous studies which found significantly positive relationships between education and performance (Cooper, Gimeno-Gascón, and Woo, 1994; Bird, 1989, 1995), especially in high-tech industries. This might suggest that higher education per se do not assure success. However, the acquisition of business skills, even while running the business, is a requisite for profitability.

Suggestions for extending this exploratory study in future research include replication in other geographic regions, controlling for specific industry effects, and testing the relationships with other outcome measures. In the case of other geographic regions, it is quite possible (due to a different "mix" of industries or other economic influences) that one might find appreciably different results. Cross-cultural comparisons are also recommended for developing generalizations about the factors affecting performance of entrepreneurial ventures.

References

- Aharoni, Y., Maimon, Z., and Segev, E. (1978), "Performance and Autonomy in Organizations: Determining Dominant Environmental Components", *Management Science*, Vol. 24, No. 9, pp. 949-959.
- Aldrich, H.E., and Zimmer, C. (1986), "Entrepreneurship Through Social Networks", in H.E. Aldrich [ed.], *Population Perspectives on Organizations*, pp. 13-28. Uppsala, Sweden: Acta Universitatis Upsaliensis.
- Aldrich, H.E. (1979), *Organizations and Environments*. Englewood Cliffs, NJ: Prentice-Hall, Inc.
- Aldrich, H.E., and Pfeffer, J. (1976), "Environments of Organizations", in A. Inkeles, J. Coleman, and N. Smelser [eds.], *Annual Review of Sociology*, Vol. 2, pp. 79-105. Palo Alto, CA: Annual Reviews.
- Atkinson, J.W., and Hoselitz, B.F. (1963), "Leadership in Change: Entrepreneurship and Personality", in N.J. Smelser and W.T. Smelser [eds.], *Personality and Social Systems*, pp. 500-507. New York: John Wiley & Sons.
- Bailey, J.E. (1986), "Learning Styles of Successful Entrepreneurs", in R. Ronstadt, J.A. Hornady, R. Peterson, and K.H. Vesper [eds.], *Frontiers of Entrepreneurship Research*, pp. 199-210. Wellesley, MA: Center for Entrepreneurial Studies, Babson College.
- Bamford, C.E., Dean, T.J., and McDougall, P.P. (1997), "Initial Strategies and New Venture Growth. An Examination of the Effectiveness of Broad vs. Narrow Breadth Strategies", in Paul D. Reynolds, W.D. Bygrave, N.M. Carter, P. Davidsson, W.B. Gartner, C.M. Mason, and P.P. McDougall [eds.], *Frontiers of Entrepreneurship Research*, pp. 375-389. Babson Park, MA: Center for Entrepreneurial Studies, Babson College.
- Bamford, C.E., Dean, T.J., and McDougall, P.P. (2000), "An Examination of the Impact of Initial Founding Conditions and Decisions Upon the Performance of New Bank Start-Ups", *Journal of Business Venturing*, Vol. 15, No. 3, pp. 253-277.
- Barreto, H. (1989), *The Entrepreneur in Microeconomic Theory: Disappearance and Explanation*. London: Routledge.
- Baumol, W.J. (1990), "Entrepreneurship: Productive, Unproductive, and Destructive", *The Journal of Political Economy*, Vol. 98, N.º. 5, pp. 893-921.
- Begley, T.M., and Boyd, D.P. (1985), "Company and Chief Executive Officer Characteristics Related to Financial Performance in Smaller Business", in J.A. Hornaday, E.B. Shils, J.A. Timmons, and K.H. Vesper [eds.], *Frontiers of Entrepreneurship Research*, pp. 452-467. Wellesley, MA: Center for Entrepreneurial Studies, Babson College.
- Begley, T.M., and Boyd, D.P. (1987), "Psychological Characteristics Associated with Performance in Entrepreneurial Firms and Smaller Businesses", *Journal of Business Venturing*, Vol. 2, No. 1, pp. 79-93.
- Bird, B.J. (1989), *Entrepreneurial Behavior*. Glenview, IL: Scott, Foresman & Co. Publishers.
- Bird, B.J. (1995), "Toward A Theory of Entrepreneurial Competency", in J.A. Katz and R.H. Brockhaus [eds.], *Advances in Entrepreneurship, Firm Emergence, and Growth*, Vol. 2, pp. 51-72. Greenwich, CT: JAI Press.
- Bird, B.J. (1993), "Demographic Approaches to Entrepreneurship: The Role of Experience and Background", in J.A. Katz and R.H. Brockhaus [eds.], *Advances in Entrepreneurship, Firm Emergence, and Growth*, Vol. 1, pp. 11-48. Greenwich, CT: JAI Press.
- Boswell, J. (1972), *The Rise and Decline of Small Firms*. London: Allen and Unwin.
- Brenner, R. (1987), *Rivalry: In Business, Science, Among Nations*. Cambridge, MA: Cambridge University Press.
- Brockhaus, R.H. (1980), "Psychological and Environmental Factors which Distinguish the Successful from the Unsuccessful Entrepreneur: A Longitudinal Study". *Academy of Management Proceedings*, 40th Annual Meeting, pp. 368-372.
- Brockhaus, R.H., and Horwitz, P.S. (1986), "The Psychology of the Entrepreneur", in D.L. Sexton and R.W. Smilor [eds.], *The Art and Science of Entrepreneurship*, pp. 25-48. Cambridge, MA: Ballinger Publishing Co.

- Brüderl, J., Preisendörfer, P., and Ziegler, R. (1992), "Survival Chances of Newly Founded Business Organizations", American Sociological Review, Vol. 57, No. 2, April, pp. 227-242.
- Carroll, G.R., and Mosakowski, E. (1987), "The Career Dynamics of Self-Employment", Administrative Science Quarterly, Vol. 32, No. 4, pp. 570-589.
- Chandler, G.N., and Hanks, S.H. (1991), "How Important is Experience in a Highly Similar Field?", in N.C. Churchill, W.B. Bygrave, J.G. Covin, D.L. Sexton, D.P. Slevin, K.H. Vesper, and W.E. Wetzel, Jr. [eds.], Frontiers of Entrepreneurship Research, pp. 1-10. Babson Park, MA: Center for Entrepreneurial Studies, Babson College.
- Collins, O.F., Moore, D.G., and Unwalla, D.B. (1964), The Enterprising Man. East Lansing, MI: Michigan State University Business Studies.
- Cooper, A.C. (1979), "Strategic Management: New Ventures and Small Business", in D.E. Schendel and C.W. Hofer [eds.], Strategic Management: A New View of Business Policy and Planning, Boston, MA: Little, Brown and Co., pp. 316-327.
- Cooper, A.C., and Dunkelberg, W.C. (1987), "Entrepreneurial Research: Old Questions, New Answers, and Methodological Issues", American Journal of Small Business, Vol. 11, No. 3, pp. 11-23.
- Cooper, A.C., and Gimeno-Gascón, F.J. (1992), "Entrepreneurs, Processes of Founding, and New-Firm Performance", in D.L. Sexton and J.D. Kasarda [eds.], The State of the Art of Entrepreneurship, pp. 301-340. Boston, MA: PSW-KENT Publishing Co.
- Cooper, A.C., Gimeno-Gascón, F.J., and Woo, C.Y. (1994), "Initial Human and Financial Capital as Predictors of New Venture Performance", Journal of Business Venturing, Vol. 9, No. 5, pp. 371-395.
- Covin, J.G., and Covin, T.J. (1990), "Competitive Aggressiveness, Environmental Context, and Small Firm Performance", Entrepreneurship Theory and Practice, Vol. 14, No. 4, pp. 35-50.
- Dahlqvist, J., Davidsson, P., and Wiklund, J. (2000), "Initial Conditions as Predictors of New Venture Performance: A Replication and Extension of the Cooper et al. Study", Enterprise and Innovation Management Studies, Vol. 1, No. 1, pp. 1-17.
- Duchesneau, D.A., and Gartner, W.B. (1988), "A Profile of New Venture Success and Failure in an Emerging Industry", in B.A. Kirchoff, W.A. Long, W.E. McMullan, K.H. Vesper, and W.E. Wetzel, Jr. [eds.], Frontiers of Entrepreneurship Research, pp. 372-386. Wellesley, MA: Center for Entrepreneurial Studies, Babson College.
- Dunkelberg, W.C., Cooper, A.C., Woo, C.Y., and Dennis, W. (1987), "New Firm Growth and Performance", in N.C. Churchill, J.A. Hornaday, B.A. Kirchoff, O.J. Krasner, and K.H. Vesper [eds.], Frontiers of Entrepreneurship Research, pp. 307-321. Wellesley, MA: Center for Entrepreneurial Studies, Babson College.
- Eisenhardt, K.M., and Schoonhoven, C.B. (1990), "Organizational Growth: Linking Founding Team, Strategy, Environment, and Growth Among U.S. Semiconductor Ventures, 1978-1988", Administrative Science Quarterly, Vol. 35, No. 3, pp. 504-529.
- Fiorito, S.S., and LaForge, R.W. (1986), "A Marketing Strategy Analysis of Small Retailers", American Journal of Small Business, Vol. 10, No. 4, pp. 7-17.
- Fritsch, M. (1989), Einzelwirtschaftliche Analyse der Arbeitsplatzdynamik (Microeconomic Analysis of Job Growth). Paderborn, Germany. Unpublished Manuscript.
- Flynn, D.M. (1995), "A Preliminary Examination of Organizational and other Factors Affecting Performance in New Ventures: The View of Venture Capitalists", Entrepreneurship and Regional Development, Vol. 7, N.º. 1, pp. 1-20.
- Gasse, Y. (1982), "L'entrepreneur moderne: Attributs et fonctions", Revue Internationale de Gestion, Vol. 7, N.º. 4, pp. 3-10.
- Gupta, A.K. (1987), "SBU Strategies, Corporate-SBU Relations, and SBU Effectiveness in Strategy Implementation", Academy of Management Journal, Vol. 30, No. 3, pp. 477-500.
- Gupta, A.K., and Govindarajan, V. (1984), "Business Unit Strategy, Managerial Characteristics, and Business Unit Effectiveness at Strategy Implementation", Academy of Management Journal, Vol. 27, No. 1, pp. 25-41.

- Hall, R.H. (1996), Organizations: Structure and Process, 6th ed. Upper Saddle River, NJ: Prentice Hall.
- Hannan, M.T., and Freeman, J.H. (1977): "The Population Ecology of Organizations", American Journal of Sociology, Vol. 82, No. 5, March, pp. 929-964.
- Hébert, R.F., and Link, A.N. (1989), "In Search of the Meaning of Entrepreneurship", Small Business Economics, Vol. 1, N.º 1, pp. 39-49.
- Hisrich, R.D., and Brush, C. (1984), "The Woman Entrepreneur: Management Skills and Business Problems", Journal of Small Business Management, Vol. 22, No. 1, pp. 30-37.
- Hood, J.N., and Young, J.E. (1993), "Entrepreneurship's Requisite Areas of Development: A Survey of Top Executives in Successful Entrepreneurial Firms", Journal of Business Venturing, Vol. 8, No. 2, pp. 115-135.
- Hornaday, R.W., and Wheatley, W.J. (1986), "Managerial Characteristics and the Financial Performance of Small Business", Journal of Small Business Management, Vol. 24, No. 2, pp. 1-7.
- Hunger, J.D., and Wheelen, T.L. (1996), Essentials of Strategic Management. Reading, MA: Addison-Wesley.
- Jennings, D.F., and Zeithaml, C.P. (1983), "Locus of Control: A Review and Directions for Entrepreneurial Research", Academy of Management Proceedings, 43rd Annual Meeting, Dallas, TX, August 14-17, 1983, pp. 417-421.
- Kalleberg, A.L., and Leicht, K.T. (1991), "Gender and Organizational Performance: The Determinants of Small Business Survival and Success", Academy of Management Journal, Vol. 34, No. 1, pp. 136-161.
- Klandt, H. (1984), Aktivität und Erfolg des Unternehmensgründers (Activity and Success of Business Founders). Bergisch-Gladbach: Verlag Josef Eul.
- Lawrence, P.R., and Lorsch, J.W. (1967), Organization and Environment: Managing Differentiation and Integration. Cambridge, MA: Harvard University Press.
- Lerner, M., and Haber, S. (2001), "Performance Factors of Small Tourism Ventures: The Interface of Tourism, Entrepreneurship and the Environment", Journal of Business Venturing, Vol. 16, No. 1, pp. 77-100.
- Litzinger, W.D. (1965), "The Motel Entrepreneur and the Motel Manager", Academy of Management Journal, Vol. 8, N.º 4, pp. 268-281.
- Lumpkin, G.T., and Dess, G.G. (1996), "Clarifying the Entrepreneurial Orientation Construct and Linking It to Performance", Academy of Management Review, Vol. 21, No. 1, pp. 135-172.
- Lumpkin, J.R. (1985), "Validity of a Brief Locus of Control Scale for Survey Research", Psychological Reports, Vol. 57, pp. 655-659.
- March, J.G., and Olsen, J.P. (1976), Ambiguity and Choice in Organizations. Bergen: Universitetsforlaget.
- Mayer, K.B., and Goldstein, S. (1961), The First Two Years: Problems of Small Firms' Growth and Survival. Washington, DC: Small Business Administration.
- McClelland, D.C. (1961), The Achieving Society. Princeton, NJ: Van Nostrand.
- McDougall, P.P., Covin, J.G., Robinson, R.B., and Herron, L. (1994), "The Effects of Industry Growth and Strategic Breadth on New Venture Performance and Strategy Content", Strategic Management Journal, Vol. 15, No. 7, pp. 537-554.
- Miller, D. (1983), "The Correlates of Entrepreneurship in Three Types of Firms", Management Science, Vol. 29, No. 7, July, pp. 770-791.
- Miller, D., and Toulouse, J.M. (1986), "Strategy, Structure, CEO Personality and Performance in Small Firms", American Journal of Small Business, Vol. 10, No. 3, pp. 47-62.
- Min, P.G. (1984), "From White-Collar Occupations to Small Business: Korean Immigrants' Occupational Adjustment", Sociological Quarterly, Vol. 25, Summer, pp. 333-352.
- Miner, J.B. (1996), "Evidence for the Existence of a Set of Personality Types, Defined by Psychological Tests, that Predict Entrepreneurial Success", in P.D. Reynolds, S. Birley, J.E. Butler, W.D. Bygrave, P. Davidsson, W.B. Gartner, and P.P. McDougall [eds.], Frontiers of Entrepreneurship Research, pp. 62-76. Babson Park, MA: Center for Entrepreneurial Studies, Babson College.

- Naffziger, D. (1995), "Entrepreneurship: A Person Based Theory Approach", in J.A. Katz and R.H. Brockhaus [eds.], Advances in Entrepreneurship, Firm Emergence and Growth, Vol. 2, pp. 21-50. Greenwich, CT: JAI Press.
- Nunnally, J.C. (1978), Psychometric Theory, 2nd ed. New York: McGraw-Hill.
- Ostgaard, T.A., and Birley, S. (1993), "Competitive Strategies and New Venture Performance", in N.C. Churchill, S. Birley, W.D. Bygrave, J. Doutriaux, E.J. Gatewood, F.S. Hoy, and W.E. Wetzel, Jr. [eds.], Frontiers of Entrepreneurship Research, pp. 73-87. Babson Park, MA: Center for Entrepreneurial Studies, Babson College.
- Pfeffer, J. (1982), Organizations and Organization Theory. Boston, MA: Pitman.
- Pfeffer, J., and Salancik, G.R. (1978), The External Control of Organizations: A Resource Dependence Perspective. New York: Harper and Row.
- Robinson, K.C. (1999), "An Examination of the Influence of Industry Structure on Eight Alternative Measures of New Venture Performance for High Potential Independent New Ventures", Journal of Business Venturing, Vol. 14, No. 2, pp. 165-187.
- Robinson, K.C., and McDougall, P.P. (1998), "The Impact of Alternative Operationalizations of Industry Structural Elements on Measures of Performance for Entrepreneurial Manufacturing Ventures", Strategic Management Journal, Vol. 19, No. 11, pp. 1079-1100.
- Robinson, P.B., and Sexton, E.A. (1994), "The Effect of Education and Experience on Self-Employment Success", Journal of Business Venturing, Vol. 9, No. 2, pp. 141-156.
- Romanelli, E. (1989), "Environments and Strategies of Organization Start-Up: Effects on Early Survival", Administrative Science Quarterly, Vol. 34, No. 3, pp. 369-387.
- Ronstadt, R. (1984), Entrepreneurship. Text, Cases and Notes. Boston, MA: Lord Publishing, Ltd.
- Ronstadt, R. (1988), "The Corridor Principle", Journal of Business Venturing, Vol. 3, No. 1, pp. 31-40.
- Rotter, J.B. (1966), "Generalised Expectancies for Internal Versus External Control of Reinforcement", Psychological Monographs: General and Applied, Vol. 80, No. 1, Whole No. 609, pp. 1-28.
- Sandberg, W.R. (1984), The Determinants of New Venture Performance: Strategy, Industry Structure and Entrepreneur. Unpublished Doctoral Dissertation, University of Georgia, Athens, GA.
- Sandberg, W.R. (1986), New Venture Performance: The Role of Strategy and Industry Structure. Lexington, MA: Lexington Books.
- Sandberg, W.R., and Hofer, C.W. (1987), "Improving New Venture Performance: The Role of Strategy, Industry Structure, and the Entrepreneur", Journal of Business Venturing, Vol. 2, No. 1, pp. 5-28.
- Sapienza, H.J., Smith, K.G., and Gannon, M.J. (1988), "Using Subjective Evaluations of Organizational Performance in Small Business Research", American Journal of Small Business, Vol. 12, No. 3, pp. 45-53.
- Schere, J.L. (1982), "Tolerance of Ambiguity As a Discriminating Variable Between Entrepreneurs and Managers", Proceedings of the National Academy of Management Conference, New York, pp. 404-408.
- Schüssler, R., and Voss, T. (1988), Bedingungen des Überlebens von Kleinbetrieben (Conditions of Survival of Small Businesses). Institute of Sociology, Munich, Germany. Unpublished Manuscript.
- Shapiro, A., and Sokol, L. (1982), "The Social Dimensions of Entrepreneurship", in C.A. Kent, D.L. Sexton, and K.H. Vesper [eds.], Encyclopedia of Entrepreneurship, pp. 72-90. Englewood Cliffs, NJ: Prentice-Hall, Inc.
- Shepherd, D.A., and Shanley, M. (1998), New Venture Strategy: Timing, Environmental Uncertainty and Performance. London: SAGE Publications, Inc.
- Stanworth, J., Stanworth, C., Granger, B., and Blyth, S. (1989), "Who Becomes an Entrepreneur?", International Small Business Journal, Vol. 8, No. 1, pp. 11-22.
- Stearns, T.M., Carter, N.M., Reynolds, P.D., and Williams, M.L. (1995), "New Firm Survival: Industry, Strategy, and Location", Journal of Business Venturing, Vol. 10, No. 1, pp. 23-42.

- Steers, R.M., and Braunstein, D.N. (1976), "A Behaviorally-Based Measure of Manifest Needs in Work Settings", Journal of Vocational Behavior, Vol. 9, October, pp. 251-266.
- Stuart, T.E., Hoang, H., and Hybels, R.C. (1999), "Interorganizational Endorsements and the Performance of Entrepreneurial Ventures", Administrative Science Quarterly, Vol. 44, No. 2, pp. 315-349.
- Swaminathan, A. (1996), "Environmental Conditions at Founding and Organizational Mortality: A Trial-By-Fire Model", Academy of Management Journal, Vol. 39, No. 5, pp. 1350-1377.
- Szyperski, N., and Nathusius, K. (1977), Probleme der Unternehmensgründung (Problems of Foundings of New Firms). Stuttgart: Proeschel.
- Thompson, J.D. (1967), Organizations in Action: Social Science Bases of Administrative Theory. New York: McGraw-Hill.
- Timmons, J.A. (1994), New Venture Creation: Entrepreneurship for the 21st Century, Fourth Edition. Homewood, IL: Irwin.
- Venkatapathy, R. (1984), "Locus of Control Among Entrepreneurs: A Review", Psychological Studies, Vol. 29, No. 1, pp. 97-100.
- Venkataraman, S., Van de Ven, A.H., Buckeye, J., and Hudson, R. (1990), "Starting Up in a Turbulent Environment: A Process Model of Failure Among Firms with High Customer Dependence", Journal of Business Venturing, Vol. 5, No. 5, pp. 277-295.
- Vesper, K.H. (1980), New Venture Strategies. Englewood Cliffs, NJ: Prentice-Hall, Inc.

