



1042-2587
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Separated by a Common Language? Entrepreneurship Research Across the Atlantic

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While recent inventories and assessments of the entrepreneurship field examine the focus, purpose, and methods, one area receiving less attention is the outcome or dependent variable. The outcome variable is of critical importance in scholarship, as it is a leading indicator of the cumulative nature of the scholarship in our field. This paper reviews 389 articles published over the past 3 years in four top entrepreneurship journals; two published in the United States and two published in Europe. It classifies the scholarship by theoretical underpinnings, independent variables, dependent variables, and then looks at the variation in these by origin of the journal. Results indicate that entrepreneurship researchers are using a wide variety of dependent variables, that the most popular unit of analysis is the firm, and that performance, broadly defined, is the most popular dependent variable. Implications for future research are discussed.

Introduction

Thomas Kuhn (1970) offered a theory of the development of scientific fields suggesting that they progress through identifiable stages. In most fields, these stages are characterized by an accumulation of reliable empirical results and the derivation of replicable tools and general principles (VanderWerf & Brush, 1989). Often there is no consensus on definition, so disagreements arise because of scholars' roots in different disciplinary areas (Hagstrom, 1965). However, a lack of consensus is not necessarily a hindrance to achieving empirical progress in a field. History shows that an emerging field often converges on a few distinct populations that are narrowed over time. After a period of accelerated research on a particular topic, the empirical field broadens again (VanderWerf & Brush, 1989).

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But as a field moves forward, accelerating and decelerating at various times, there is tension as it broadens or narrows in focus. To account for the variation in scholarship, social scientists suggest that a domain definition must be both comprehensive and parsimonious (Dubin, 1978; Whetten, 1989). Emergent fields are frequently characterized by competition and debates as different dimensions are explored (Ritzer, 1975). In Entrepreneurship, one of our main institutions, the Academy of Management Entrepreneurship Division has endorsed a broad definition of the domain of entrepreneurship:

[Entrepreneurship is] the creation and management of new businesses, small businesses and family businesses, and the characteristics and special problems of entrepreneurs. Major topics include: new venture ideas and strategies; ecological influences on venture creation and demise; the acquisition and management of venture capital and venture teams; self-employment; the owner-manager; management succession; corporate venturing and the relationship between entrepreneurship and economic development (*Revised 4/95*).¹

This broad definition permits scholars to focus on different areas, levels, and populations, defining entrepreneurship in a way that fits their research (Davidsson, Low, & Wright, 2001). On the other hand, this statement also suggests it is difficult to have a comprehensive theory and the inclusive nature of the topics of study runs the risk of becoming a field that is a *potpourri* (Gartner, 2001).

Other scholars argue for a narrow domain definition and research that focuses on what is distinctive about entrepreneurship (Gartner, 2001; Shane & Venkataraman, 2000). They suggest developing a domain that predicts a set of empirical phenomena not explained by other fields, for example newness, novelty or creation (Brush et al., 2003; Busenitz et al., 2003; Dailey, McDougall, Covin, & Dalton, 2002; Sharma & Chrisman, 1999). A narrow focus on stable characteristics permits scholars the opportunity to compare and contrast studies; however it limits the breadth of topics studied.

As these debates continue, from time to time reviews and assessments identify whether we are making progress, what we are studying and what the new research directions might be (Aldrich, 1992; Aldrich & Baker, 1997; Davidsson et al., 2001; Low & MacMillan, 1988). But, the definition of progress is not always clear. Aldrich (1992) noted that the field had expanded its repertoire of research designs and analytical techniques, and he proposed that research directions depend on the assumptions we make about the scientific and normative structure of the field. First, the unified or normal science view holds that progress is achieved when there is an accumulation of empirically tested hypotheses and well grounded generalizations, developed through quantitative data, rigorous design, and statistical techniques (Kuhn, 1970). Researchers test theories using hypotheses to replicate and confirm previous findings, working to achieve continuity (Aldrich & Baker, 1997). Second, an alternative perspective suggests that researchers should emphasize diversity of theories and methods, where subgroups of entrepreneurship researchers develop communities with varying methods and standards (Gartner, 2001). Third, a pragmatic view suggests that the issues addressed assume more prominence than the methods, which can change as the researcher's purpose and conditions change. In the pragmatic view, the pursuit of uniqueness is valued more than continuity (Mone & McKinley, 1993). This could be considered to be of practical relevance where investigations might be more phenomena driven, seeking to obtain results which have implications for education, practitioners, or policy (Hoy, 1997).

1. <http://www.aomonline.org/>

Several assessments of the field have addressed the question of progress. Some focused on the context and process of entrepreneurship, while others examined different aspects of the field, notably the purpose of research (Low, 2001), assumptions in theory development (Gartner, 2001), new perspectives (Aldrich & Martinez, 2001), level of analysis (Davidsson & Wiklund, 2001), and research design and construct measurement (Chandler & Lyon, 2001). Empirical literature reviews have examined domain boundaries, by determining the extent to which entrepreneurship articles are published in other management journals (Busenitz et al., 2003); reviewed empirical studies to examine how firm level performance was measured (Murphy, Trailer, & Hill, 1996); examined the topics of inquiry used in empirical studies (Thornhill & Celly, 2006); and considered the source of data and measurement techniques (Chandler & Lyon, 2001).

While recent inventories and assessments provoked our thinking, we found two areas that received less attention. First, despite the rapid internationalization of our scholarly community, trends emerging from different areas of the world have not been comprehensively captured in prior literature reviews. The field of entrepreneurship is truly a global community if we consider that the International Council for Small Business currently has 11 country-based or regional affiliates containing 2,400 members from over 70 countries. The Academy of Management Entrepreneurship Division has more than 2,000 academic members, a significant percentage of whom are from international business schools. Finally, the Babson College Entrepreneurship Research Conference receives upwards of 600 submissions each year and nearly 50% are from scholars from outside the U.S. The expansion of European research, scholarly conferences, publications, and participation raises the question as to whether or not there are any differences in perspectives or research cross-nationally.

Second, the dependent variable received less attention in previous reviews. Previous literature reviews in entrepreneurship examined performance measurement (Brush & VanderWerf, 1992; Murphy et al., 1996) focusing on firm-level outcomes, but fewer assessments of the entrepreneurship literature considered the outcomes or dependent variable more broadly (Thornhill & Celly, 2006). A better understanding of the dependent variable, the theories employed in entrepreneurship research and the inference approaches taken to study those theories and variables, might well inform us as to whether the field is broadening or narrowing, and hence the progress we are making. To examine the entrepreneurship scholarship in general, the dependent variable in particular, and the differences in European/U.S. trends in research, we address three broad research questions in this paper:

1. What are the different approaches in entrepreneurship research?
2. What are the outcomes/dependent variables most often employed by entrepreneurship researchers?
3. What are the variations in approaches and outcomes/dependent variables across origin of journal?

In the next sections we describe our methodology, present and then discuss our findings, and offer future research directions and conclusions.

Methodology

Data Collection

To collect our data we systematically read and classified every article published between 2003 and 2005 (3 years) in four journals, two published in the U.S., and two

published in Europe. In particular we examined the *Journal of Business Venturing* (JBT), *Entrepreneurship Theory and Practice* (ETP), *International Small Business Journal* (ISBJ), and *Small Business Economics* (SBE). The four journals' mission statements are presented in Appendix 1. We chose these journals because they are well-regarded outlets for entrepreneurship publication. Specifically, according to the Social Science Citation Index, *Journal of Business Venturing* and *Entrepreneurship Theory and Practice* have factor impact scores of 1.846 and 1.537, respectively, making them the highest ranked U.S. entrepreneurship journals, while *Small Business Economics* has a factor impact score of 0.526 and *International Small Business Journal* is rated at 0.273, indicating that they are well regarded European-based entrepreneurship journals (<http://www.slu.edu.eweb>).

Data Coding

To code the data initially, we used two independent raters for each journal in order to ensure the accuracy of our classification system. Each rater classified the journal article by author; journal; article title; research question or premise; theoretical premise; independent variables and their operationalization and measurement; dependent variable(s) and their operationalization and measurement; sample size and unit of analysis (e.g., individual, firm, country); research method(s); statistical analysis; findings; and any comments that the rater might have about the quality of the method or the accuracy of the findings. To further organize our data, and to verify the accuracy of our raters, the three principal investigators each took one set of journal data (one investigator examined two journals) and compared the raters' coding. When there was missing data or discrepancies between the raters, the principal investigator went back to the original article for clarification. Overall, the raters achieved a very high level of inter-rater reliability (>90%), thus ensuring the reliability of our data. In light of our interest in conceptual and empirical articles only, we deleted the articles that presented other forms of scholarship (e.g., book reviews, editorials, opinion pieces, introductions to special issues, teaching case studies, and accompanying teaching notes) from our spreadsheet. This reduced our initial sample size of 437 articles by 48 articles (10.98%), rendering a usable sample size of 389 articles for statistical analysis.²

Variable Grouping Procedure

To analyze our data we created a second coding table, which each principal investigator used to recode the data into analytical variables. This table used a categorical coding scheme to code the journal by origin, independent variable, unit of analysis of the dependent variable, whether or not the dependent variable was performance-based, as well as the sample size, data collection method, and analysis methodology. To augment the categorical scales, we also included qualitative assessments of the journals' theoretical foundations and dependent variables. We used two established typologies to group the papers by theory and type of dependent variable. More specifically, to group the papers by theory, we drew from Astley and Van de Ven's (1983) classic paper that outlines organizational theories in a two-by-two matrix according to four dimensions, level of analysis (macro to micro level), and assumptions of human volition (deterministic to voluntaristic). Our review showed that a number of entrepreneurship articles focused on the entrepreneur or individual characteristics as the level of analysis, thus going beyond the original Astley

2. Our analysis does not include the most recent six months of *Small Business Economics*.

Figure 1

Classification of Entrepreneurship Scholarship by Theory: An Extension of the Astley and Van de Ven (1983) Typology of Organizations

	DETERMINISTIC	VOLUNTARISTIC
MACRO-LEVEL/POPULATION	Theories: Institutional Theory, Industrial Economics, Regional Clusters, Agglomeration N = 52 (13.37%)	Theories: Network Theory, Social Embeddedness N = 18 (4.63%)
FIRM LEVEL	Theories: Systems Theory, Resource-dependence N = 17 (4.37%)	Theories: Agency Theory, Resource-based View of the Firm, Strategic Management theories, Decision Theory, Family Business, Stakeholder Analysis, Signaling Theory, Financial Theory, Transaction Cost Economics N = 134 (34.45%)
INDIVIDUAL LEVEL	Theories: Determinants of Self-employment N = 6 (1.54%)	Theories: Prospect Theory Career Choices, Human Capital, Cognition, Intentions, Leadership N = 56 (14.40%)
OTHER	Inductive Case studies, Conceptual Papers, Literature Reviews N = 35 (9.00%)	
NO THEORY	N = 71 (18.25%)	

and Van de Ven’s (1983) classification, which concentrated on the organization level. We therefore extended the original matrix to a three-by-two grid, adding two cells for deterministic or voluntaristic perspectives at the individual level. The extended framework is presented in Figure 1.

To provide a finer grained analysis of our firm-level performance-based dependent variable, we used the Venkatraman and Ramanunjam’s (1986, p. 803) concentric circle

model of the domains of business performance. Consistent with their focus on the firm as the unit of analysis, we classified each article that was at the firm level into three performance categories, financial performance, financial and operational performance, and organizational effectiveness. This allowed us to not only analyze all of the dependent variables in our sample, but also to specifically focus on performance as a dependent variable of interest.

Analytical Procedure

To address Research Question 1, we calculated the frequencies of different theoretical bases, levels of analysis, data collection methods, and inference approaches, as reported in the 389 articles that comprised our dataset. To address Research Question 2, we cross-tabulated the four different levels of analysis we investigated (e.g., no dependent variable, individual, firm, and environment level) with the three types of dependent variable (e.g., no dependent variable, performance, and outcomes other than performance). In addition, following Venkatraman and Ramanunjam's (1986) typology, we calculated the frequencies of different types of performance studied at the firm level (e.g., financial, financial and operational, and organizational effectiveness). Finally, to address Research Question 3, we cross-tabulated the various scholarship approaches reported in the papers, including theoretical bases, levels of analysis, type of dependent variable, methodology, and inference approach used, by origin of the journal (e.g., European- or U.S.-based).

Although we did run chi-square tests for all our cross tabulations, which returned highly significant statistical differences across cell, the large number of cells and the large number of cells with an expected count of less than five preclude the meaningful interpretation of the statistical significance of the variance. Therefore our assessments are qualitative.

Results

Sample Description

As noted in the previous section, we investigated four scholarly journals over 3 years (2003–2005), with the number of articles per year approximately equally distributed. More specifically, 32.6% of the articles we reviewed were published in 2003, 35.4% in 2004, and 32.1 in 2005. Out of the 389 articles that constituted our final sample, JBV provided 26.9%, ETP provided 19.5%, ISBJ provided 17.4%, and SBE provided the remaining 36.2%. The relatively high number of articles coming from SBE, an economics oriented journal, may partly account for the prevalence of secondary data sources and regression statistical techniques we find in our analysis, and thus the results we report next should be interpreted accordingly.

Research Question 1. What are the different approaches in entrepreneurship research?

As the frequencies reported in Table 1 illustrate, at present the entrepreneurship field is characterized by a multitude of theoretical perspectives ranging from population-level deterministic theories such as industrial economics or population ecology to individual-level voluntaristic theories such as cognition. Notably, the firm-level voluntaristic theories, such as strategic management theories, account for over a third of the theoretical approaches we tallied, whereas the deterministic theories at the individual level were least

Table 1

Entrepreneurship Research Approaches (n = 389)

Approaches	Frequency	Percent
Theories		
Population of organizations deterministic	52	13.37
Population of organizations voluntaristic	18	4.63
Firm level deterministic	17	4.37
Firm level voluntaristic	134	34.45
Individual deterministic	6	1.54
Individual voluntaristic	56	14.40
Other	35	9.00
No theory	71	18.25
Levels of analysis		
Individual only	43	11.03
Firm only	114	29.23
Environment only	25	6.41
Individual + firm	20	5.13
Individual + environment	12	3.08
Firm + environment	43	11.03
Individual + firm + environment	22	5.64
No independent variable	111	28.46
Methods		
Case study	7	1.79
Comparative case study	15	3.85
Interviews	20	5.13
Survey	99	25.38
Secondary database	116	29.74
Experiment	2	0.51
Mixed method	29	7.44
Other	69	17.69
Not mentioned	33	8.46
Inference approach*		
Grounded theory	22	5.80
Conceptual	66	17.41
Descriptives	66	17.41
Analysis of variance	25	6.60
Regression	145	38.26
Structural equation modeling	14	3.69
Other	38	10.03
None	3	0.79

* n = 379.

well represented (in slightly over 1% of the studies). Also of note is the relatively large number of studies (18.25%), which are not anchored in a theoretical base.

With respect to the levels of analysis, firm-level studies predominated at close to 30%, whereas studies investigating individuals only or a combination of firm and environmental level variables both stood at 11.03%. Interestingly, a very small number of studies (5.64%) looked at the combined influence of factors at the individual, firm, and environmental level.

Secondary databases were the most popular sources of data, providing data for close to 30% of the studies, followed by surveys at 25.38%. Of note is the relatively sparse

Table 2

Outcomes by Level of Analysis (n = 389)

Level of analysis	Type of dependent variable						Total
	No DV		Performance		Other than performance		
	Count	Percent	Count	Percent	Count	Percent	
Individual	0	0.00	1	3.57	27	96.43	28
Firm	0	0.00	111	55.50	89	44.50	200
Environment	0	0.00	20	46.51	23	53.49	43
No DV	118	100.00	0	0.00	0	0.00	118
Total	118	30.33	132	34.74	139	36.58	

usage of experiments and case studies, including comparative case studies (22 studies or slightly over 5%). Almost 20% of the studies reported methods “other” than the traditional data collection approaches, which included original and non-conventional methodologies such as theatrical analysis or phenomenology.

With respect to the preferred inference approach, close to 40% of the studies utilized regression as a statistical procedure, including very sophisticated econometric and event history analysis regression techniques. At the same time, a considerable number of the scholarly papers we reviewed (close to 20%) were conceptual in character. Another 20% of the studies relied on descriptive statistics to present trends and patterns.

In sum, among the great variety of approaches taken to entrepreneurship research, we observed a preference for large-scale, secondary data driven firm-level studies, influenced by strategic management theories and a tendency to test regression models.

Research Question 2. What are the outcomes/dependent variables most often employed by entrepreneurship researchers?

The dependent variables employed by entrepreneurship research show interesting tendencies when cross-tabulated by level of analysis, as presented in Table 2.

Almost all studies at the individual level (96.43%) investigated outcomes other than performance. The studies at the firm level and the environment level were considerably more balanced. Slightly over half of the studies at the firm level (55.5%) looked at performance, whereas slightly over half of the studies at the environment level (53.49%) were interested in outcomes other than performance.

A finer-grained look at the measures of performance at the firm level presented in Table 3 suggests that, based on Venkatraman and Ramanunjam’s (1986) typology, financial measures of performance, such as accounting returns, profits, sales growth, stock performance, and market value account for over 51% of the firm performance measures and far surpass other measures of performance, such as measures of business performance (innovation, technological efficiency, or manufacturing value added) or organizational effectiveness (such as legitimacy or stakeholder satisfaction). Overall, the entrepreneurship field seems to be focused on the financial outcomes of firm-level performance.

Table 3

Performance at the Firm Level (n = 111)

Measure	Count	Percent
Financial	57	51.35
Financial + operational	30	27.03
Organizational effectiveness	24	21.62

Research Question 3. What are the variations in approaches and outcomes/dependent variables across origin of journal?

As the cross-tabulations by origin of the journal presented in Table 4 illustrate, there is a significant variation in terms of both approaches to research and interest in the outcome variables in entrepreneurship research by origin of journal.

With respect to theoretical underpinnings, studies in both U.S. and European journals focus on firm-level voluntaristic perspectives and frameworks. However, U.S. journals also publish a considerable number of studies anchored in individual-level voluntaristic theories (21.55%), whereas European studies demonstrate preference for deterministic theories at the population level (17.79%). Also of note is that over one quarter of the studies published in European journals did not use a theoretical anchor for their investigation.

Consequently, about a third of the studies published in both U.S. and European journals focused on the firm level of analysis. Interestingly, almost half (43.09%) of the studies published in U.S. journals had no measurable independent variables, compared with slightly over 15% (15.79%) among the studies published in European journals. These were often descriptive studies. With the exception of the combined “firm + environment” level of analysis, other levels of analysis received scant attention among scholars publishing in European journals (single digit coverage).

The type of dependent variable revealed further interesting variations. While 46.11% of the studies published in U.S. journals had no dependent variable, 44.50% of the studies published in European journals were interested in outcomes other than performance. With respect to methods, U.S. and European scholars tend to converge on their preference for survey and secondary data based research, as well as on their preference for regression as an inference approach.

In sum, while the majority of entrepreneurship scholars publishing on both sides of the Atlantic tend to coalesce in their primary scholarly interest in firm-level phenomena, several distinct communities of scholars study other important phenomena using different theoretical anchors and methodological tools.

Discussion

Our original interest in this study was to examine current entrepreneurship scholarship in general, the dependent variable in entrepreneurship research, and comparisons across country of origin. Our systematic analysis of 389 scholarly articles published in the past

Table 4

Entrepreneurship Research Approaches by Journal Origin (n = 389)

Approaches	Origin			
	Europe		U.S.	
	Count	Percent	Count	Percent
Theories				
Population of organizations deterministic	37	17.79	15	8.29
Population of organizations voluntaristic	11	5.29	7	3.87
Firm-level deterministic	3	1.44	14	7.73
Firm-level voluntaristic	65	31.25	69	38.12
Individual deterministic	6	2.88	0	0.00
Individual voluntaristic	17	8.17	39	21.55
Other	13	6.25	22	12.15
No theory	56	26.92	15	8.29
Levels of analysis				
Individual only	17	8.13	26	14.36
Firm only	64	30.62	50	27.62
Environment only	17	8.13	8	4.42
Individual + firm	13	6.22	7	3.87
Individual + environment	11	5.26	1	0.55
Firm + environment	35	16.75	8	4.42
Individual + firm + environment	19	9.09	3	1.66
No independent variable	33	15.79	78	43.09
Type of dependent variable				
No DV	35	16.75	83	46.11
Performance	81	38.76	51	28.33
Other than performance	93	44.50	46	25.56
Methods				
Case study	4	2.02	3	1.67
Comparative case study	8	4.04	7	3.89
Interviews	13	6.5	7	3.89
Survey	57	28.79	42	23.33
Secondary database	61	30.81	55	30.56
Experiment	1	0.51	1	0.56
Mixed method	27	13.64	2	1.11
Other	26	13.13	43	23.89
Not mentioned	1	0.51	20	11.11
Inference approach				
Grounded theory	7	3.54	15	8.29
Conceptual	14	7.07	52	28.73
Descriptives	42	21.21	24	13.26
Analysis of variance	17	8.59	8	4.42
Regression	89	44.95	56	30.94
Structural equation modeling	0	0.00	14	7.73
Other	29	14.65	9	4.97
None	0	0.00	3	1.66

3 years in two European and two U.S. journals allowed us to evaluate the trends in current research, the nature of the dependent variable, as well as the progress of the field. Each of these three findings will be discussed next.

Trends Observed

As previously noted, there are several earlier reviews of entrepreneurship topics, methods, and journals. Previous examinations of the methods and approaches to research showed that entrepreneurship research (1991–1995) was characterized by survey and interview methods, and empirical more than conceptual approaches (Aldrich & Baker, 1997). Chandler and Lyon (2001) in their study of 416 articles from nine journals (1989–1999) found the majority were empirical studies, using primary data, conducted on individuals (35%) employing regression and statistical techniques. Our sample shows fewer studies using surveys (25.38%) with the highest percentage being secondary databases (29.74%). We believe that it is much easier to obtain secondary databases today, given the rise in technology, and the large scale collaborative studies (e.g., the Panel Study of Entrepreneurial Dynamics or the Global Entrepreneurship Monitor); while at the same time it is increasingly difficult to garner a reasonable response rate with traditional survey techniques. Further, case-based methods account for 5.9% of the studies, a rate approximately the same as in the Aldrich and Baker (1997) survey.

In examining statistical techniques, our findings show that some form of regression (e.g., Ordinary Least Squares, Cox regression, or Logistical regression), was the most popular statistical technique (38.3%), however conceptual approaches (17.4%) were also often utilized. This is an increase over findings by Aldrich and Baker (1997) but similar to Thornhill and Celly (2006) who found 52% of the studies in their sample utilized regression.

The Dependent Variable

Similar to our study, Thornhill and Celly (2006) examined 10 years of *Entrepreneurship Theory and Practice* and *Journal of Business Venturing* (N = 284 papers) concentrating exclusively on empirical studies and the dependent variable. They found that for recent years (2001–2005) the majority of the studies focused on the firm level of analysis (more than 50%) and utilized economic and financial measures. Further, they found about 26% of the studies had individual-level dependent variables. Our results are similar in that firm-level dependent variables dominated (51.5% of the articles reviewed), but individual-level dependent variables were much lower in our assessment (10.33%). Environmental-level variables were 15.87% of the total sample of papers examined, which may be a reflection of the inclusion of an economics-based journal (*Small Business Economics*) in our sample. Murphy et al. (1996) in their examination of 52 empirical studies published in the 1987–1993 period found more than 71 different measures of performance, again with the majority (>50%) utilizing economic and financial measures. While our sample was not limited to empirical papers, our categorization of those studies that examined firm-level phenomena (111 papers) showed that over half of these used financial measures, with the rest composed of operational and organizational effectiveness measures. This is actually not surprising, given that of the 2,081 members of the Entrepreneurship Division, 996 (47.86%) are also members of the Business Policy and Strategy Division (<http://www.aom.pace.edu>), and the predominant dependent variable in strategic management research is firm performance, which is typically operationalized using financial measures.

Table 5

Classification of Dependent Variables by Topic Frequency (Counts)

Dependent variable topic [†]	Number of articles: European journals	Number of articles: U.S. journals	Total number of articles
Firm performance	25	13	38
Survival/failure	18	10	28
Business growth/market share	17	8	25
Internationalization	18	3	21
Family/start-up team	1	6	7
Innovation	13	2	15
Financing/venture capital	18	8	26
Business infrastructure/resources	8	1	9
Decision making	3	1	4
Alliances/networks	7	3	10
Entrepreneurial orientation	5	2	7
Knowledge/learning	5	2	7
Self-employment	10	2	12
Other [‡]	26	43	69
No DV	34	77	111
Total	208	181	389

[†] Each of the topical areas is broadly defined and includes many different operationalizations of the stated dependent variable. For example, Firm Performance not only included traditional financial ratios but also sales figures, profitability, and market share.

[‡] There were less than three papers per topical area in each of the categories grouped under Other, and more typically, there was only one paper using a unique dependent variable.

Notably, in our study research published in U.S. journals showed greater dispersion in the usage of dependent variables, whereas research published in European journals was more focused on dependent variables measuring firm performance, survival, financing, and internationalization. Table 5 summarizes in 15 broad categories the numerous dependent variables utilized by the studies in our sample.

Progress in the Field

In their 1997 review, Aldrich and Baker conclude that the field has made limited progress on dimensions of normal science, diversity of theories and pragmatic research. In the years since the Aldrich and Baker (1997) and Davidsson et al. (2001) reviews, we might expect that the improved communications—expanded networking at conferences, and rise in the number of entrepreneurship members in the Academy of Management both in the U.S. and around the world—would result in a broadening of the research domain. On the other hand, with easier access to electronic journals through Google and other sources, we might have reason to believe that there would be some convergence on topics, and in terms of similarity between U.S. and European research, where researchers would build on each others' work.

Our analysis shows there is evidence of increased hypothesis testing, which is manifested by the prevalence of empirical/data base and statistical analyses. *Journal of Business Venturing* and *Small Business Economics* were more likely to publish this type of article. On the other hand, what is less clear is whether the empirical studies in the field

have used the same measures and dependent variables. The fact that there was an increase in theory-driven articles and more rigorous inference methods suggests that the study of entrepreneurship is becoming more of a science, however, the lack of convergence in dependent variables suggests that there is little comparability of findings and results. If we are triangulating on a phenomenon by examining it from different perspectives (Jick, 1979) this would be considered appropriate, but if we are not systematically testing theories to confirm or disconfirm previous work, then there is less progress in moving the entrepreneurship field forward. Is the entrepreneurship field emulating the methods of the mature sciences without exploring the nuances of the complexity of the phenomena under investigation (Daft & Lewin, 1990)? Or are we pressured by what Kaplan (1964) called, the “law of the instrument,” give a small child a hammer and he will find that everything he encounters needs pounding? Differences by journal of origin are relevant here. As Table 4 reflects, European research is less likely to identify a theory and more likely to focus on descriptive statistics than U.S. research. Alternatively, U.S. research shows a higher incidence of grounded theory development and theory testing. The accumulation of scientific knowledge does involve a continuous cycle of theory generation and theory testing (Eisenhardt, 1989), but at the same time, studies need to be additive and interrelated. Our analysis suggests we still need to consider how our research builds on previous studies, test or develops theories, especially when selecting questions to research.

There appears to be significant progress in the formation of multiple research perspectives. We observed a number of special issues on topics such as cognition, entrepreneurial teams, family business, technological entrepreneurship, internationalization, regional development, firm and industry demography, as well as evolutionary perspectives in entrepreneurship research and entrepreneurship theory. This suggests that there is an active dialogue going on around similar research interests. There is evidence of theory testing, replication, and convergence on methods in the particular areas where populations or sub-communities are somewhat well defined. This supports Gartner’s (2001) contention that the field of entrepreneurship may be evolving into informal homogeneous communities.

In contrast to the convergence of sub-communities around topics across journals, we observed variation in theoretical approach based on origin of the journal. European journals are more likely to publish articles adopting a natural selection or collective action approach while U.S. journals publish articles grounded in an individual/voluntaristic view. Relatedly, articles in European journals more often employed multilevel analyses (firm and environment, individual and firm) while U.S. studies overwhelmingly studied either individuals or firms. This variation might be attributed to cultural perspectives where collectivism is more valued in Europe and individualism is more valued in the U.S. (Hofstede, 2001). Similarly, a collective perspective assumes multiple actors; hence the multilevel analysis reflected in the studies is consistent with this view.

Progress according to a pragmatic approach suggests that research theory and methods would take a secondary role, and that the research would focus on topical questions. We observed that approximately 20% of the articles published in all journals put theory second, while roughly 30% had no dependent variable. This might imply that there is progress being made in the arena of pragmatic research as well.

Implications for Future Research and Conclusions

While our study critically assessed a comprehensive number of scholarly studies in four premier journals for entrepreneurship research over 3 years, it is not without limitations, which need to be kept in mind when interpreting these findings. First, our research

was a snapshot in time, exploring patterns over a relatively short, 3-year time period. Our review took inventory of current research and therefore our findings need to be compared to prior literature reviews in order to critically assess long-term trends. Further, our study is far from presenting a comprehensive picture of current research in the field of entrepreneurship. Notably, research published in non-English language outlets was beyond the scope of our review. Finally, although we did run chi-square tests for all our cross tabulations, which returned highly significant statistical differences across cell, the large number of cells, and the large number of cells with an expected count of less than five preclude the meaningful interpretation of the variance. Limitations notwithstanding, our study does indicate to several directions in which the field of entrepreneurship research can fruitfully evolve. These areas will be discussed next.

Measures

Given the continued proliferation of new measures for performance, researchers would be well served to adopt previously developed measures for studies that test similar concepts or theories. At the same time, the narrow focus on financial and economic measures of performance should be reconsidered. Entrepreneurial performance may have subjective dimensions that are not captured in financial and economic measures due to personal expectations, aspirations, skills, and decisions of the entrepreneur or team (Ucbasaran, Westhead, & Wright, 2001). There is an array of theoretical perspectives that might be employed, such as goal achievement (Etzioni, 1964), systems resource (Yuchtman & Seashore, 1967), and multiple constituencies (Connolly, Conlon, & Deutsch, 1980) that might yield a more comprehensive understanding of entrepreneurial performance and the phenomenon. For those scholars focusing on the firm level of analysis, expanding measures to include non-economic performance (e.g., team satisfaction and performance, market share, operational effectiveness, successful new product introduction) would also yield a fuller understanding of the study's outcome of interest (Venkatraman & Ramanujam, 1986). An extension of this paper would be to examine the nature of the measures for each of these categories of performance in order to better determine the extent to which we are replicating our work.

Diffusion of Theory

Another extension of this research would be to examine the degree to which new ideas and theories proposed in conceptual papers are being examined empirically (Fichman, 1992). In other words, are new theories being diffused into empirical work? For example, it would be of interest to know the extent to which conceptual work by Katz and Gartner (1988) on emerging organizations, Sarasvathy (2001) on effectuation, or Shane and Venkataraman (2000) on opportunity exploitation is making its way into empirical entrepreneurship research. In exploring the diffusion of ideas from conceptual to empirical work, we would gain a better understanding of the cumulative progress that is being made in the entrepreneurship field as well as where the gaps are for future theorizing.

Distinctiveness

It is argued that entrepreneurship is distinguished from its neighbor, strategic management, by a focus on newness, creation, and innovation (Brush et al., 2003; Busenitz et al., 2003; Dailey et al., 2002; Davidsson & Wiklund, 2001; Sharma & Chrisman, 1999).

What is less clear is to what degree we are researching appropriate samples or applying methods that permit an understanding of new firms, creative ideas, or innovations. While we did find that 16 of the papers in our sample did use some type of innovation as the dependent variable, it seems this is an area that is relatively underexplored in both theory and empirical studies. Given that creativity is a concept that does not lend itself to being measured using traditional financial performance measures as dependent variables, if factors distinctive to the entrepreneurial domain are newness, innovation, and creation, then research needs to be expanded or refocused to explore these concepts using appropriate samples and methods.

In conclusion, our paper illustrates how difficult it is to manage the dual tension of producing interesting and distinctive theoretically driven scholarship while at the same time achieving convergence so as to achieve a cumulative body of work in a particular area. While special issues go a long way in addressing this tension, there needs to be a move towards convergence in all of our scholarship, not just in those papers focused on a defined topic of interest. As a final thought, we would like to reiterate Davidsson, Low, and Wright's (2001) recommendation for progress in the entrepreneurship field, which we fully share:

the challenge is to create a community of scholars who bring insights from multiple disciplines to investigate a set of phenomena that are neither too broad as to defy the notion of intellectual community, nor so narrow we lose sight of our goal (Davidsson et al., 2001, p. 7).

Appendix 1

Journal Mission Statements

Small Business Economics Entrepreneurship is increasingly important as a scholarly field. Small Business Economics (SBE) provides an invaluable forum for research and scholarship focusing on the role of entrepreneurship and small business. The journal has a broad scope and focuses on multiple dimensions of entrepreneurship, including entrepreneurs' characteristics, new ventures and innovation, firms' life cycles; as well as the role played by institutions and public policies within local, regional, national and international contexts. *Small Business Economics* publishes theoretical, empirical, and conceptual papers and encourages interdisciplinary and cross-disciplinary research from a broad spectrum of disciplines and related fields, including economics, finance, management, psychology, regional studies, sociology and strategy.

International Small Business Journal

The *International Small Business Journal* (ISBJ) is a truly global, multi-disciplinary forum for the dissemination and discussion of research on the small business. The emphasis of the journal is on high quality, research based studies which contribute to theory, critical understanding and policy formulation on small firms. Papers published in the ISBJ cover theoretical, methodological, and empirical studies of small firms from a broad range of disciplines and perspectives. The emphasis is on research excellence in the field of enquiry, as the journal endeavors to provide a critical forum for world class contributions on the analysis of small firms. This refereed journal is of relevance to academics, policy makers, and analysts, in government and business, seeking to understand the sector, trade and business institutions, small business representative bodies, and those in support agencies.

Journal of Business Venturing

The *Journal of Business Venturing: (JBV) Entrepreneurship, Entrepreneurial Finance, Innovation and Regional Development* provides a scholarly forum for sharing useful and interesting facts, theories, narratives, and interpretations of entrepreneurship and consequences of entrepreneurship.

The journal aspires to publish ideas that deepen our understanding of, and ultimately impact, the entrepreneurial phenomenon in its myriad forms. We seek papers (1) that are grounded in the practice of entrepreneurs, innovators, and their support systems; and (2) that address issues useful to scholars, educators, enablers, and practitioners of the entrepreneurial phenomenon. The journal welcomes pluralism in approach, methods, and disciplines.

Entrepreneurship Theory and Practice

Entrepreneurship Theory and Practice (ETP) is a leading scholarly journal in the field of entrepreneurship studies. The journal's mission is to publish original papers which contribute to the advancement of the field of entrepreneurship. ETP publishes conceptual and empirical articles of interest to scholars, consultants, and public policy makers. Most issues also feature a teaching case. Article topics include, but are not limited to:

- National and International Studies of Enterprise Creation
- Small Business Management
- Family-Owned Businesses
- Minority Issues in Small Business and Entrepreneurship
- New Venture Creation
- Research Methods
- Venture Financing
- Corporate and Non-Profit Entrepreneurship

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We would like to thank Julie Brush, Kevin Eagan, Meric Kirmizi, and Rachel Stafford for their invaluable assistance in collecting and classifying the articles reviewed in this paper.