

Taking Stock and Moving Forward: Independence of Entrepreneurship as a Discipline and the Intellectual Structure of Entrepreneurship Research in Strategy Venue

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Entrepreneurship has grown into a full-fledged, vibrant discipline, not only drawing on but also spawning a spectrum of research streams with various theoretical perspectives and empirical evidence. However, strategy journals had traditionally been home to many earlier entrepreneurship research insights. How has the intellectual structure of the entrepreneurship research published in strategic outlets evolved, given the disciplinary maturity of entrepreneurship? To answer this question, we performed a visual bibliometric analysis on the full archive of 25 years' research on entrepreneurship published in a leading strategy journal. Our results uncover the intellectual development trajectory around entrepreneurship research targeted at strategy venue, and reveal the key elements such as research methods, level of analysis, variables, and correlations about such a body of research. This study provides an important starting point for reflecting on the particularities of boundary-crossing entrepreneurship research, and for identifying further avenues of theoretical and empirical inquiries.

INTRODUCTION

Entrepreneurship, a process that leads to social, economic, and political innovation (O'Neill, 1977, Eisenstadt, 1980, Libecap, 1996) has attracted ever growing scholarly attention (Baron and Henry, 2010). Today, it has grown into a full-fledged research domain spawning a spectrum of research streams, as evidenced by the proliferation of influential publications, specialized journals, and research conferences.

In light of such proliferation, researchers have begun to map the key dynamics of entrepreneurship scholarship, and generated important in-field findings on the trajectory of disciplinary development (Carragher & Paridon, 2008), especially since its “new beginnings” in 1999 (Gregoire et al., 2006). However, there has been little research devoted to presenting the panorama of entrepreneurship research in extra-field outlets before and after the disciplinary maturity of entrepreneurship. This is important, because given the pulling force of entrepreneurship journals, as well as the fact that strategy journals had traditionally been home to many earlier entrepreneurial insights, triangulating with entrepreneurship research published in extra-field venues could not only allow for a better understanding of the intellectual development of the discipline, but also could shed light on the particularities of boundary-crossing entrepreneurship research, uncovering unexplored areas for contributions.

This study is one of the earliest attempts to look over the disciplinary “fence” both before and after the disciplinary boundary was clear. Specifically, the authors explore the evolution of entrepreneurship research in strategy venue. Entrepreneurship and strategy research share certain topical preoccupations, e.g. wealth creation, innovation, growth, and flexibility (Alvarez, 2003). Since the turn of the century, tremendous interests have been shown to the intersection of both fields (Droege & Dong, 2008, Luke et al., 2011, Harms et al., 2012).

What, then, are the dominant features of entrepreneurship research in strategy venue before and after the disciplinary maturity of entrepreneurship?

To answer this question, in this article, the authors report a visualized bibliometric of entrepreneurship research published in, *Strategic Management Journal (SMJ)*, a representative venue of strategy scholarship (Niemi et al., 1988, Franke et al., 1990, Baum et al., 1998, Podsakoff et al., 2005) with long term and constant inclusion of entrepreneurship research before and after entrepreneurship has been established as an independent discipline. Our approach is an integration of bibliometrics, a mathematical and statistical analysis (Diodato and Gellatly, 2013) with qualitative content analysis. The visualizations center on influential authors, dominant themes, and the evolutions of these indicators, as well as strategic entrepreneurship, and this study also put forth a model that groups the antecedents, performance and process outcomes, moderators, mediators, and new variables associated with said research.

This study makes a few important contributions to our field. First, with the help of bibliometric visualizations, the authors provide a panorama of the changing intellectual structural of entrepreneurship research in strategy venue. While the question of entrepreneurship’s maturity as a field of study (Shane and Venkataraman, 2000, Shane and Venkataraman, 2001) is largely settled, evidence of this maturity has rarely been explored in an extra-field venue. This paper attempts to provide the missing link, inventorying and organizing the literature in said venue to construct a repository of extant insights on which new theorizations and empirical inquiries may be built.

Second, this paper takes one step further than portraying the development of our field. Our highlighting of the central topics, major publications and citations, influential authors, and dominant theoretical perspectives as well as our model that summarizes the key concerns of extant research provides researchers with important indicators for further research (Low & MacMillan, 1988).

Methodologically, our analytical approach boasts the advantages of both quantitative bibliometrics and qualitative content analysis. While bibliometric software provides algorithmic results in general covers citation and co-citation analyses, they do not provide in-depth thematic analysis. At the same time, qualitative content analysis, which entails human coding, while allowing researchers to better focus at most relevant themes of inquiry, is susceptible to the theme omission and/or error of codes. The integration of the human coding and text-mining greatly enhances coding reliability.

This study conclude that entrepreneurship scholarship witnessed continued expansion in strategy venue, and exhibits a pattern of increased coherence in terms of theoretical perspectives, and enhanced efforts in framework building. In addition, entrepreneurship research in strategy venue exhibits certain particularities in terms of methods, level of analysis, and variables, which, in our view, provides clear clues for future theorization and empirical testing.

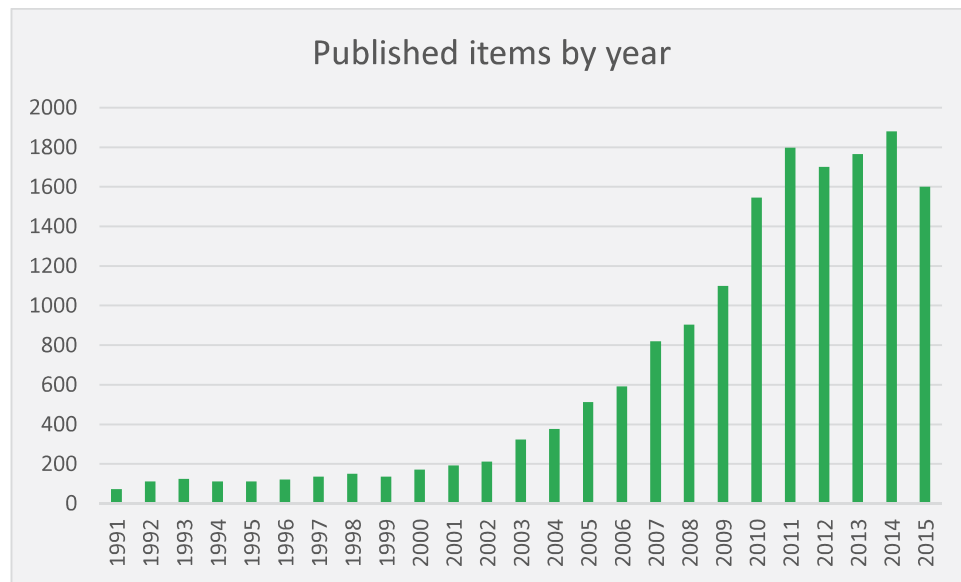
The remainder of the paper is organized as follows. This paper first presents the background for this research, reviewing important development in entrepreneurship scholarship. The authors then discuss in detail the data and methods utilized in our analysis. After that, both quantitative and qualitative results result of analysis are presented and discussed. Finally, this study highlights some possible directions for future research.

RESEARCH BACKGROUND: ESTABLISHMENT OF ENTREPRENEURSHIP AS A DISCIPLINE

Entrepreneurship Research on the Rise: Publications, Major Venues, and Research Conferences

Since the insights on entrepreneurship by Joseph Schumpeter (Schumpeter, 1934), entrepreneurship research has experienced a tremendous development, spawning a diversity of theoretical perspectives and empirical examinations. The momentum was further enhanced over the last fifteen years, as evidenced by the proliferation of publications.

FIGURE 1
NUMBER OF PAPERS ON ENTREPRENEURSHIP PUBLISHED



(Source: Web of Science; Topic: "Entrepreneurship")

Underlying this proliferation is the emergence or re-emergence of major entrepreneurship-oriented venues, such as *Journal of Small Business Management* (est.1963), *Entrepreneurship: Theory and Practice* (ETP, est. 1976, known as *American Journal of Small Business* prior to 1988), *International Small Business Journal* (est.1982), *Journal of Business Venturing* (est.1985), *Family Business Review* (est. 1988), *Small Business Economics* (est. 1989), *Entrepreneurship & Regional Development* (est.1989), and *Strategic Entrepreneurship Journal* (est. 2007). Notably, the term Entrepreneurship began to feature in major journal titles around 1990, as evidenced by the renaming of American journal of small business into Entrepreneurship: Theory and Practice, and the appearance of Entrepreneurship & Regional Development in 1989. Undoubtedly, this development in academic venues for entrepreneurship paved the way for entrepreneurship's becoming a semantic focus, which subsequently stimulated the proliferation of academic efforts.

Also fueling this maturity of entrepreneurship scholarship (Shane and Venkataraman, 2000, Bruyat and Julien, 2001, Shane, 2012, Venkataraman et al., 2012) are leading research conferences on entrepreneurship, such as the Babson College Entrepreneurship Research Conference (BECER, est 1981), Research in Entrepreneurship and Small Business conference (RENT, est 1987) and workshops organized by the Entrepreneurship Division of the Academy of Management (AoM), and by the SMS' Interest Group for Entrepreneurship and Strategy. Conferences and workshop facilitate exchange of ideas and interaction among the stakeholders of entrepreneurship, and are therefore conducive to the fostering and strengthening of entrepreneurship community.

Inventorying Knowledge: The Emergence of Co-Citation Analyses on Entrepreneurship Research

On the literature aspect, the “come of age” of entrepreneurship research is marked by the efforts to consolidate extant knowledge, evidenced by the appearance of systematic analysis of the knowledge roadmaps of this scholarship. Bibliometric analysis tracks the trajectory of knowledge evolution, and helps identify dominant trends (Chen, 2004, Chen, 2006). Déry and Toulouse (1996) offered a detailed co-citation analysis of papers published in *the Journal of Business Venturing* between 1986 and 1993. Reader and Watkins (2006) performed a cluster analysis on co-citation patterns associated with 78 authors of entrepreneurship. Gregoire et al. (2006) provided an excellent co-citation analysis of *Frontiers of Entrepreneurship Research*, highlighting entrepreneurship moving beyond its status as a subfield of strategy (between 1994 and 1998).

As a vibrant young field with inputs of insights from various theoretical and disciplinary perspectives, entrepreneurship needs constant knowledge map updating in strategy venue, in the form of a comprehensive synthesis and organization of its subject matter, theoretical perspectives, publications, and influential authors. This motivates our attempt to visualize the knowledge landscape of entrepreneurship in the strategy venue.

Believing the value of visualization in social analysis (Grady, 2011), this study seeks to construct visualizations of such knowledge development which inventories existing insights and on which new theoretic insights may be gained (Corley and Gioia, 2011). Next, this paper would turn attention to the methods, including analytical procedures.

METHODS

The overall empirical goal of this study is two-fold: 1) to quantify and qualify, with bibliometric and content analyses, notable trends of entrepreneurship research in strategy venue, e.g. influential publications and authors by citations, predominant themes over time, and 2) to highlight key elements of entrepreneurship research in strategy venue, such as research methods, level of analysis, variables and correlations.

Data Collection

The time frame of our inquiry is between 1991 and 2015. Covering research in these 25 years allows us 1) to cover the shift of field status of entrepreneurship in 1998 (Gregoire et al., 2006), 2) to have at least two times as many years after the status change than the number of years before the change, which would allow us to observe potential changes in the number and themes of entrepreneurship papers appearing in the strategy venue of focus.

Our dataset covers the title, abstract, keywords, cited frequency, citing references, authors' information, and so forth. The data collection is a two-step process. First, to have an overall understanding of the strategy-entrepreneurship connection, this study collected all the paper dealing with both “strategy” and “entrepreneurship” from Web of Science (publication N=2741). Second, the authors collected the full sample of entrepreneurship research from SMJ in our time frame (publication N=145). SMJ was chosen not only for its leading role in strategy scholarship and its constant inclusion of entrepreneurship but also for the fact that a number of important theoretical perspectives and frameworks (Porter, 1980, Burgelman, 1983, Porter, 1997, Teece et al., 1997, Eisenhardt and Martin, 2000) applied in entrepreneurship first came from SMJ.

Data Analysis

This study first contextualizes our inquiry with an overall picture of the strategy-entrepreneurship connection in research. This is done with our “Web of Science” dataset on research with both entrepreneurship and strategy as topics. The authors then choose SMJ as the proxy journal to examine what entrepreneurship scholarship looks like in strategy venue. This then allows the authors to summarize key elements of entrepreneurship research in strategy venue and to identify emerging trends of said research.

TABLE 1
ANALYTICAL APPROACH

Step Number	Description
1	Context analysis – quantitative analysis and visualization of the evolution of research with both strategy and entrepreneurship as topics.
2	Strategy venue analysis - quantitative analysis and visualization of the evolution of entrepreneurship research in strategy venue (proxy: SMJ)
3	Research element analysis – qualitative analysis and summary of the key elements of entrepreneurship research in strategy venue
4	Identification of emerging trends and directions for future contributions

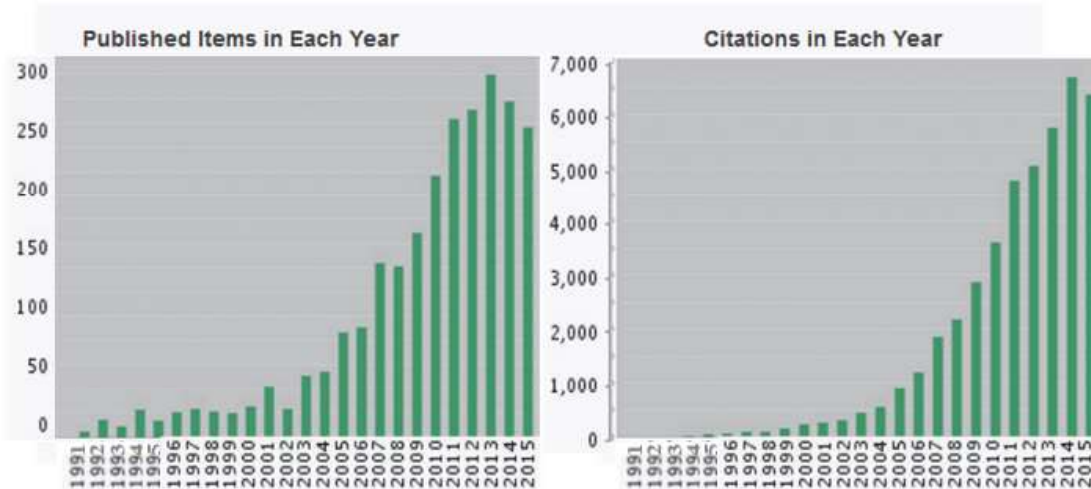
Research software utilized for this study includes CitespaceIII for the quantitative analysis and Nvivo 10 for the qualitative analysis. Specifically, CitespaceIII is used to visualize the evolution of entrepreneurship research in our sample. Endnote is used together with Nvivo 10 for thematic review purposes (Johnston, 2006, Bazeley and Jackson, 2013). To present a more accurate landscape of entrepreneurship scholarship in strategy venue, this study integrate the computer-aided quantitative results with findings from qualitative content analysis, which lead to bibliometric visualizations of key characteristics of extant knowledge, and their trajectories.

CONTEXT FIRST: ENTREPRENEURSHIP RESEARCH IN STRATEGY VENUE

Expansion in Publication and Citation

Research connecting entrepreneurship and strategy has been found to be growing steadily from 1991 onwards. Figure 2 presents respectively the numbers of papers published and cited on entrepreneurship in strategy venue by year. It indicates that the citations on entrepreneurship have increased rapidly over the past two decades, with a steep increase since the year 2005. To a less yet important extent, publications on entrepreneurship went through a significant increase, especially when comparing years 2003-2015 with years 1996-2002. It is possible that the sharp increase in 2003 is due to the special issue stressing the importance of research in entrepreneurship (Hitt et al., 2001). The introduction of SEJ may also fuel the interaction between entrepreneurship and strategy, as shown by the upward trends after 2007.

FIGURE 2
NUMBERS OF PAPERS ON ENTREPRENEURSHIP AND STRATEGY
PUBLISHED AND CITED BY YEAR

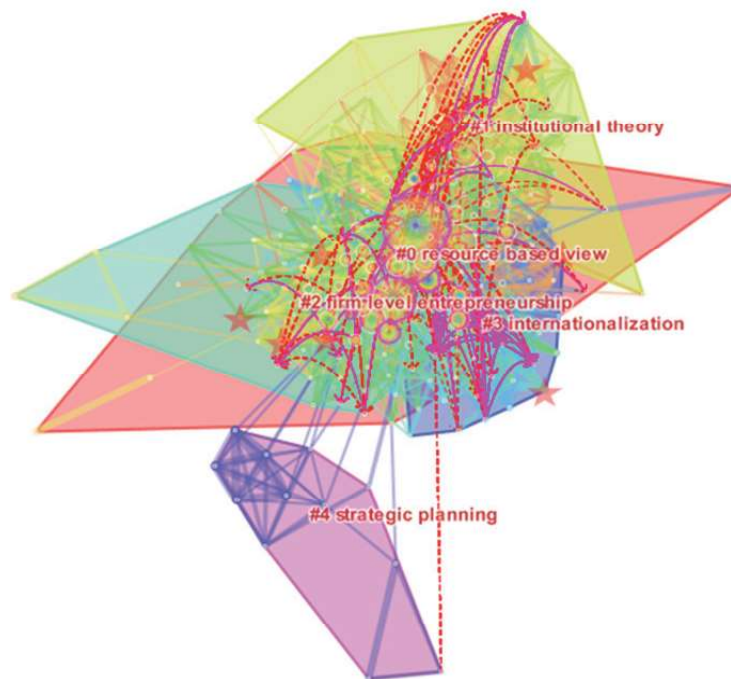


(Source: Web of Science, Topics: “strategy” and “entrepreneurship”)

Burst Analysis and the Choice of SMJ

Our analysis reveals the thematic changes involved in the above mentioned sharp increase since 2003. The post 2002 sample of research with dual foci on strategy and entrepreneurship (Key words = “entrepreneurship, strategy”, Publication N=2274, Cited reference N=78080) generates five clusters as shown in Figure 3. The different colors correspond to different clusters. Color encodings show clearly the newness of network regions. Each node represents a cited reference in the network. The clusters are numbered in the descending order of the cluster size, starting from the largest cluster #0.

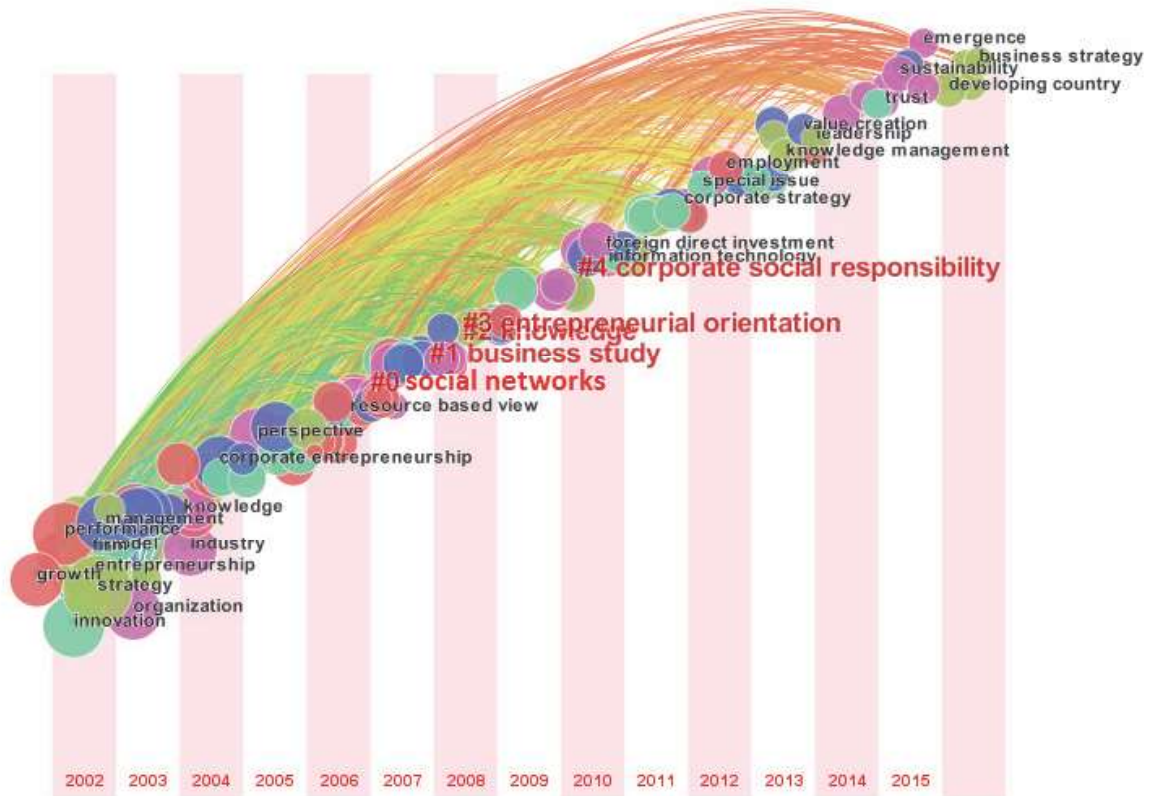
FIGURE 3
CITED REFERENCE CLUSTERS (2002-2015, CLUSTER VIEW)



(Tips: Cluster0: Resource based view (color: red); Cluster1: Institutional theory (color: yellow); Cluster2: Firm level entrepreneurship (color: bright blue); Cluster3: Internationalization (deep blue); Cluster4: Strategic planning (color: purple))

The red and pink lines in Figure 3 indicate the novel links that the papers in question add to the network formed prior to their publications. Novel links added by a paper to the existing network of cited references are shown in red dashed lines. The star marks the position of the citing paper itself, which itself was cited by other papers. This sample shows that connections exist between the largest cluster is *Resource based view* and other three main clusters are *Institutional theory*, *Firm level entrepreneurship* and *Internationalization*. Based on the time line analysis, it is clear that the *Resource based view* cluster is the fundamental cluster, while the *Institutional theory* cluster was the most recent.

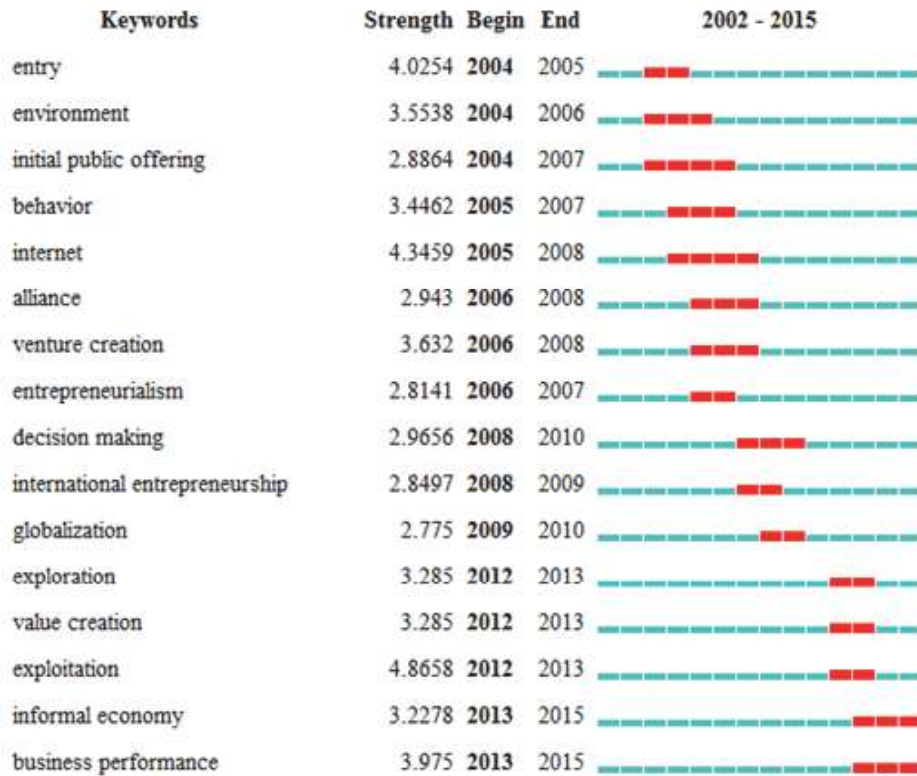
FIGURE 3
KEYWORDS CLUSTERS (2002-2015, TIME-ZONE VIEW)



(Tips: Cluster0: Social networks (node color: red); Cluster1: Business study (node color: green); Cluster2: knowledge spillover (node color: bright blue); Cluster3: Entrepreneurial orientation (node color: deep blue); Cluster4: Corporate social responsibility (node color: purple)

The cluster analysis based on keywords network in the time-zone view shows the evolution of research topic from *social networks* to *knowledge spillover* and *entrepreneurial orientation*, and then to *corporate social responsibility*. “Business study” exists in the whole research period. Figure 5 shows the 16 burst keywords sorted by beginning year (Citation burst is an indicator of a most active area of research. Meanwhile, keyword burst is a detection of a burst keyword, which can last for multiple years as well as a single year.). In the first stage (year 2002-2008), the most active research is in *entrepreneurial entry*, *strategic alliance* (networks), and *environment* (contingency theory) area. In the second stage (year 2008-2013), it is the *international entrepreneurship* and *value creation* that active in this domain. For the last and most recent stage (year 2012-2015), the active research areas are *informal economy* and *business performance*.

FIGURE 4
KEYWORDS WITH STRONGEST CITATION BURST



Based on the most cited journals (c.f. Table 2), SMJ is the second most cited journal among all the top cited journals. These differences in citations lend extra support to our choice of SMJ as the proxy for an extra-field venue, considering the fact AMR and AMJ are relatively generic in research topics and theories, while ETP and JBV are specialized entrepreneurship journals.

Post 1991 Evolution of Entrepreneurship Research in Strategy Venue

Influences: Major Work

Network centrality, an indicator of the most important vertices, helps us identify the most influential publications in our SMJ sample (Time period 1991-2015, Publication N=133, Cited reference N=6606). Our results suggest that all major publications were produced after 1998. It reflects the vibrancy of entrepreneurship research in strategy venue, and shows that top strategy journal remained an important venue for entrepreneurship scholarship.

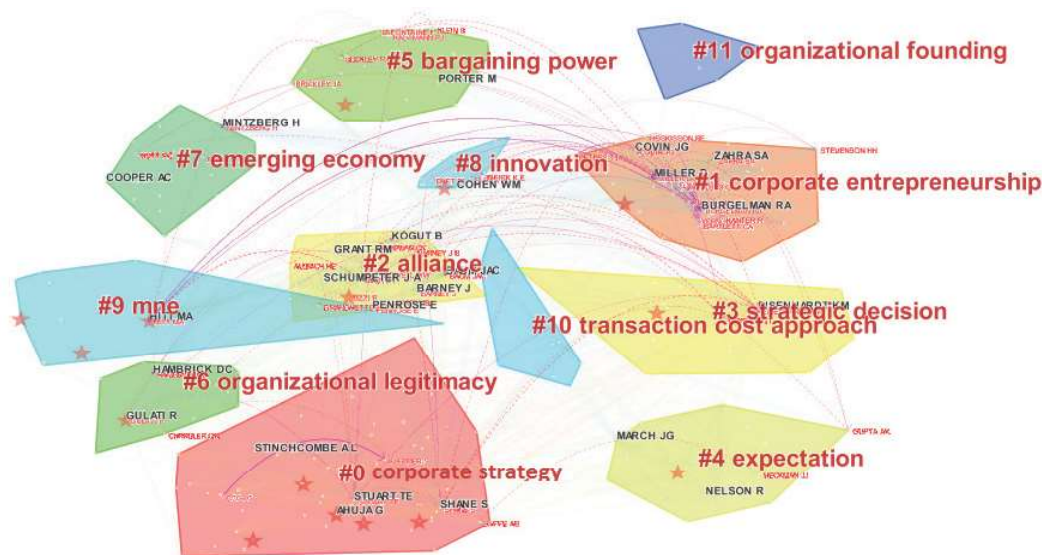
This result also highlights important research topics in entrepreneurship. For instance, performance of firms, especially those in high-tech industry and/or engaging in knowledge creation and transfer activities, attracts major academic attention. In terms of temporal dynamics, the focus has been changing from performance of high-tech firms (Yli-Renko et al., 2001, Wiklund and Shepherd, 2003, Dushnitsky and Lenox, 2005, Nerkar and Shane, 2007) to that of venture firms (Dushnitsky and Shaver, 2009, Arora and Nandkumar, 2012).

TABLE 2
TOP FIVE CITED JOURNALS

Rank	Frequency	Cited Journal
1	1217	Academy of Management Review (AMR)
2	1097	Strategic Management Journal (SMJ)
3	1039	Journal of Business Venturing (JBV)
4	1039	Academy of Management Journal (AMJ)
5	886	Entrepreneurship Theory and Practice (ETP)

Cluster Analysis

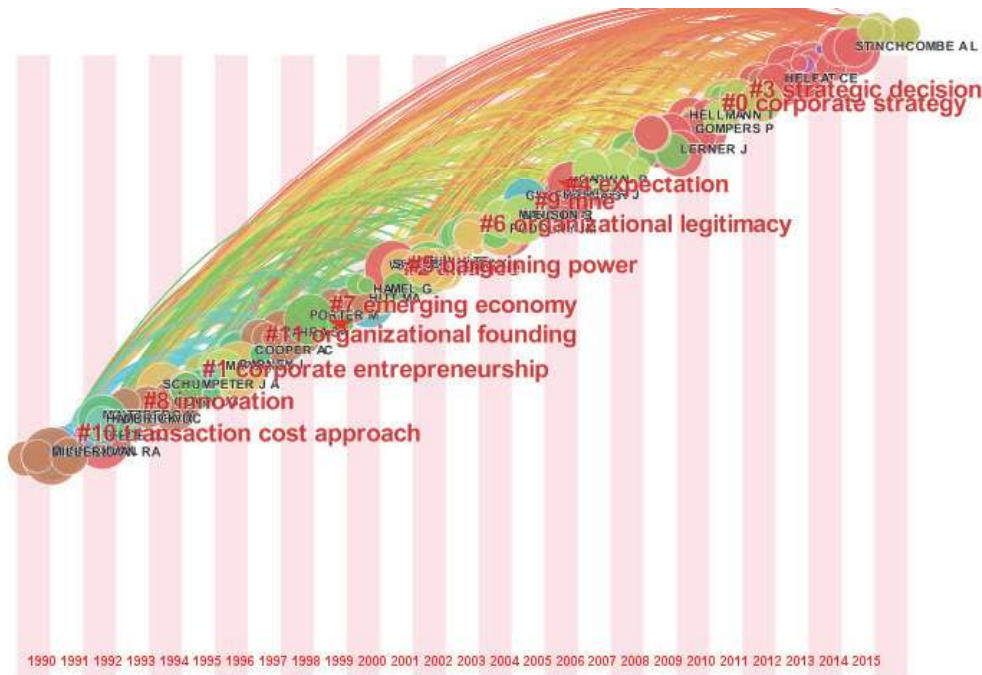
FIGURE 5
CLUSTER BASED ON CITED AUTHORS (CLUSTER VIEW, 1990-2015)



A number of clusters are identified for the research in entrepreneurship in SMJ from 1990 to 2015, as shown in Figure 6. This classification was based on the abstracts of papers in our dataset. The different colors represent different clusters: the largest cluster *entrepreneurship* in red and the smallest cluster *organizational founding* in deep blue. Each node represents a cited author in the network.

The clusters were created based on co-occurrence network, and allow us to identify major areas of research. Figure 7 depicts the decrease of the research area with the increase of cluster number from 0 onwards. The largest research area is the cluster0 *corporate strategy* (turnover; self-employment; turnover; horizontal acquisition; strategic human capital), the second largest one is cluster1 *corporate entrepreneurship* (strategic fit; context; corporate governance), and then followed by *alliance* (strategic alliance; interorganizational relationship), *strategic decision*, *expectation* (overoptimism; planning ;rationality; cognitive perspective), *bargaining power* (franchising; vertical integration; industry analysis), *organizational legitimacy* (upper echelon; endorsement; CEO power; leadership structure), *emerging economy*, *innovation*, *MNE* (subsidiary entrepreneurship; globalization), *transaction cost approach*, and *organizational founding* (organizational ecology). The pink lines show clear bridge between cluster *corporate entrepreneurship* and other three clusters *innovation*, *MNE*, and *bargaining power*, and the bridge between cluster *alliance* and *strategic decision*.

FIGURE 6
CLUSTER BASED ON CITED AUTHORS (TIME-ZONE VIEW, 1990-2015)



Two important observations can be made for these two figures. First, the node color provides clues to tell the evolution of the cluster from time-zone view. In this case, the relative young cluster is *strategic decision* and *corporate strategy*, followed by *expectation*, *MNE*, *organizational legitimacy*, and *bargaining power*; the relative old cluster is *transaction cost approach*, *innovation*, and *corporate entrepreneurship*. Secondly, two types of nodes are especially noteworthy. The first type is the high cited nodes in the network, such as Shan S., Eisenhardt KM, Teece DJ, Stuart TE, Barney J, and Ahuja (Shan et al., 1994, Ahuja and Lampert, 2001, Amit and Zott, 2001, Lu and Beamish, 2001, Teece, 2007). They are representative nodes in their cluster. The second type of nodes is the nodes which connect two or more clusters, such as Hitt M.A. and Miller D. connect cluster *MNE* and *corporate entrepreneurship*, Miller D. and Eisenhardt K.M. connect cluster *corporate entrepreneurship* and *innovation* (Miller and Friesen, 1982, Eisenhardt and Schoonhoven, 1990, Eisenhardt and Schoonhoven, 1996). The analysis of top 30 influential authors and keywords of their work shows that Agarwal, R, Ziedonis, RH, Ganco, M. enjoy the highest centrality in our sample. Central research topics include performance or firm performance, decision-making, venture capital firms, new venture. This figure also depicts the most influential perspectives, Noteworthy is that, organization or firm level studies (node: organizations; venture capital firms; new venture) are by far dominant among the papers analyzed, with the key phrases firm and industry being the largest phrase nodes in the network, enjoying highest centrality compared to other nodes.

EVOLUTION OF ENTREPRENEURSHIP RESEARCH IN STRATEGY VENUE AS THE BOUNDARY TAKES SHAPE

In this section, the study separate the time period from 1991 to 2015 into three time frames: 1990-1998, 1999-2006, 2007-2015. The authors did this for two reasons: first, the analysis of this study and the insights in Grégoire et al (2006) on entrepreneurship’s disciplinary formation prompt the authors to bisect the time period around 1998. Second, the journal SEJ started in year 2007; the authors suspect that its

“pulling” force, though proved less significant in affecting the number of entrepreneurship paper being published, might affect the themes of entrepreneurship research in SMJ.

Cross-Disciplinary Inspirations

To decide the main fields from which the entrepreneurship research receives inspiration, this study categorized the most cited journals into five fields:

Management and strategic journals include *Strategic Management Journal*, *Administrative Science Quarterly*, *Academy of Management Journal*, *Academy of Management Review*, *Management Science*, *Organization Science*, and *Journal of Management Studies*;

Economics and finance journals are *American Economic Review*, *Journal of Finance*, *Journal of Financial Economics*, *Quarterly Journal of Economics*, *Econometrica*, *Bell Journal of Economics*, and *Journal of Political Economy*;

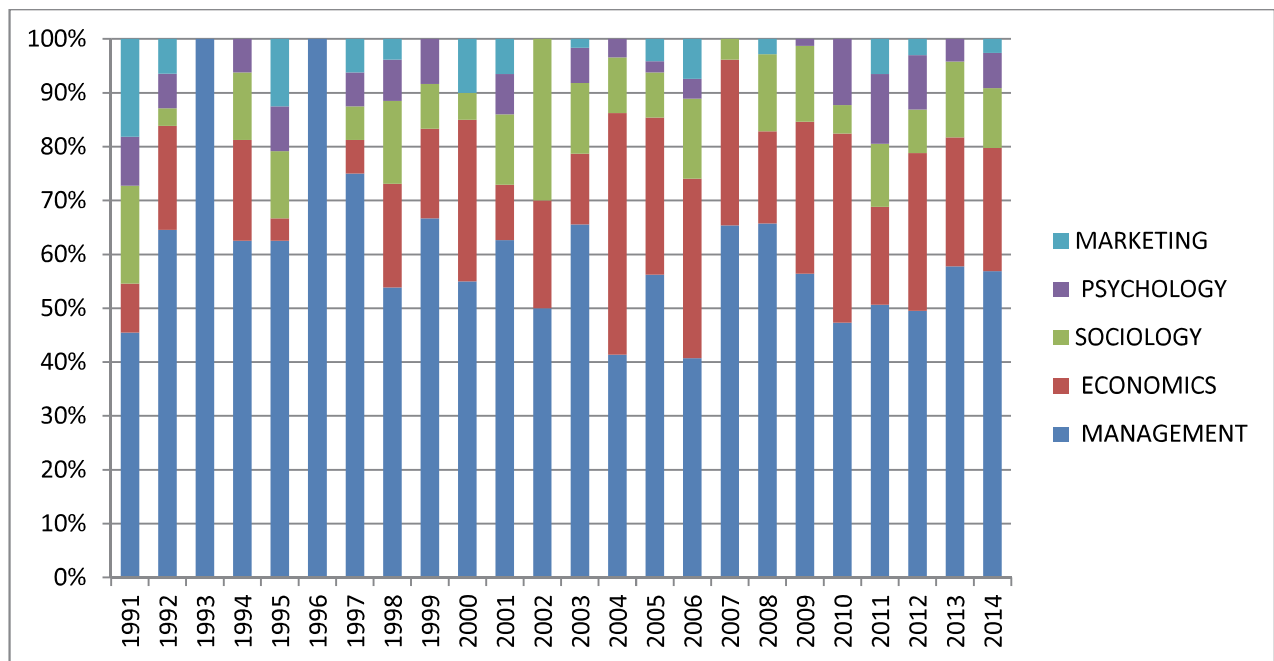
Sociology journals include *American Journal of Sociology* and *American Sociological Review*;

Psychology journals are *Journal of Applied Psychology*, *Psychological Bulletin*, *Psychometric Theory*, *Psychological Review*, and *Journal of Personality and Social Psychology*;

Marketing journals include *Journal of Marketing Research*, *Journal of Marketing Research*, and *Journal of Consumer Psychology*.

In the time frame of our study, entrepreneurship research in SMJ has increasingly drawn upon theories, and/or methods from Economics and Finance as well as Psychology, while decreasingly so for Marketing (c.f. Figure 8). Management remains the most important field from which entrepreneurship scholarship gain insights.

FIGURE 7
PERCENTAGE OF CITED DOMAIN (CLASSIFIED BY JOURNAL)



Inspiring Authors and Perspectives

Figure 9 show the citation bursts for major references. A publication with high burst degree is one that has attracted an extraordinary degree of attention from its scientific community. This figure also reveals the clear difference in citation burst before and after year 1998. Before year 1998, the strongest citation burst are Mintzberg and McHugh (1985) and Burgelman (1983). After year 1998, the strongest

citation burst becomes Agarwal et al. (2004), Hellmann (2007), Hoetker and Agarwal (2007), and Lerner and Gompers (1999).

FIGURE 8
MAJOR REFERENCES WITH STRONGEST CITATION BURSTS IN SMJ (1990-2015)



Major Pre-1998 Inspirations

The most cited work before 1998 are Mintzberg and McHugh (1985), Miller and Friesen (1984), Porter (1980), and Burgelman (1983). Porter (1980) systematically deals with competitive strategy. Porter raised two important questions: 1) the attractiveness of industries for long term profitability and the factors that determine it; 2) the determinants of relative competitive position within an industry. Porter's work has exhibited great influence both empirically (Robinson and McDougall, 1998, Michael, 2000) and theoretically (Keyhani et al., 2015).

Burgelman (1983) focuses on the concept "Corporate entrepreneurship", which has significant influence for the early time of entrepreneurship study in SMJ. Based on the previous theoretical and empirical studies, Burgelman presented a model of the strategic process concerning entrepreneurial activity in large, complex organizations. He considered the activities of both middle managers and top managers' team when he examined the diversity. This work has been widely cited in the research on multiple companies (Birkinshaw, 1997, Birkinshaw et al., 1998) or from process perspective (Dougherty, 1992, McGrath et al., 1995).

Mintzberg and McHugh (1985) is more interested in the strategy formation in an adhocracy. In contrast to planning, he believed that organization strategies can "form" in a variety of different ways. His paper was also high cited in entrepreneurship research concerning organizational strategy (Dougherty, 1992).

Miller and Friesen (1984) informs corporate life cycle with the considerations of organizational growth and increasing environmental complexity. Therefore, his work has been widely cited in studies of firms in complexity environment (Mosakowski, 1991, Garud and Vandeven, 1992, Dess et al., 1997, Kaufman et al., 2000).

Major Post-1998 Inspirations

The most cited reference after 1998 are Eisenhardt (1989), Eisenhardt and Martin (2000), Barney (1991), Stuart (2000), Shane and Venkataraman (2000), Teece (1981), Teece et al. (1997), and Zahra et al. (1999). In terms of theoretical perspectives, entrepreneurship research in SMJ reflected an increasing focus on the relations between the environment and the entrepreneur, as evidenced by 1) the movement from Resource-based view (RBV) to Dynamic Capabilities (DC) and 2) the emergence of new conceptual framework.

From Resource-Based View to Dynamics Capabilities

Barney (1991) argues that firm resource is the foundation of sustainable competitive advantage. Stuart (2000) studies the relationship between inter-corporate technology alliances and firm performance in the framework of RBV. Three important authors wrote on the theory of dynamic capabilities, in many ways a further development of RBV (Teece et al., 1997, Zahra et al., 1999, Eisenhardt and Martin, 2000). Eisenhardt and Martin (2000) defines dynamic capabilities as a set of specific and identifiable processes such as product development, strategic decision making, and alliance. Teece et al. (1997) regards the dynamic capabilities framework is superior in analyzing the sources and methods of wealth creation and capture by private enterprise firms operating in environments of rapid technological change than traditional resource-based framework. Zahra et al. (1999) focuses on the dynamic organizational capabilities of corporate entrepreneurs competing in a dynamic and global economy.

New Framework of Entrepreneurship

Shane and Venkataraman (2000) provides a conceptual framework of entrepreneurship based on the previous study and empirical phenomenon. They define the field of entrepreneurship as “the scholarly examination of how, by whom, and with what effects opportunities to create future goods and services are discovered, evaluated, and exploited”. Believing that the field involves the study of “sources of opportunities, the processes of discovery, evaluation, and exploitation of opportunities, and the set of individuals who discover, evaluate, and exploit them, they define entrepreneurship around the function of human (entrepreneurs, managers, or employee), an perspective often overlooked in the previous studies.

**FIGURE 9
CHANGES IN KEYWORDS: 1991-2015 (WITH CONNECTIONS)**

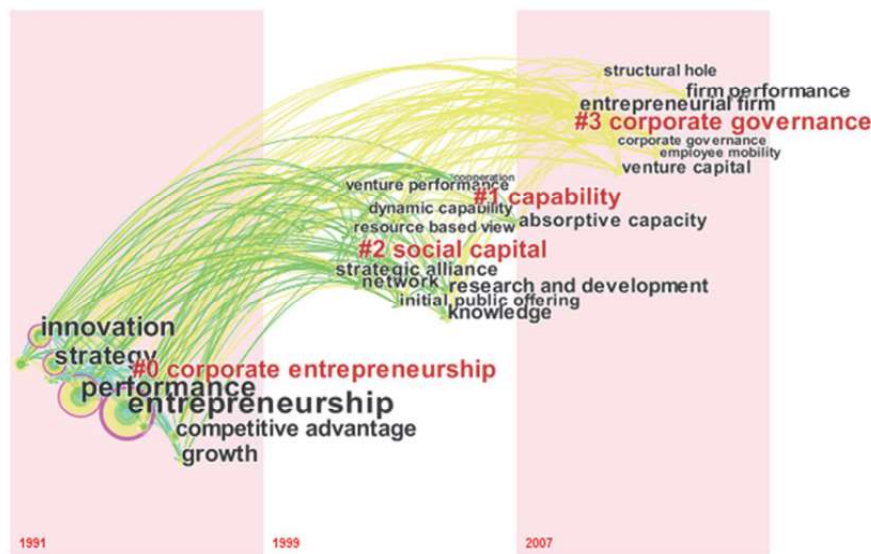


Figure 10 shows the change in the entrepreneurship research in SMJ from year 1991 to 2015. Notably, the dominant keywords changed from “growth” and “competitive advantage” to “dynamic capability”, “strategic alliance”, “venture performance”, “R&D”, and “network” to “corporate governance”, “structural hole”, and “employee mobility”, except for keywords “entrepreneurship” and “innovation”, which naturally remained central. Notably, later research cluster concerned multinational corporations (connected to keyword “corporate governance”) and uncertainty (“venture capital”). Connected with keywords “knowledge”, “diversification”, and “embeddedness”, “structural holes” rose in

predominance in 2007-2015, where a group of papers study entrepreneurship from the “network” perspective (Vissa and Chacar, 2009, Ma et al., 2011).

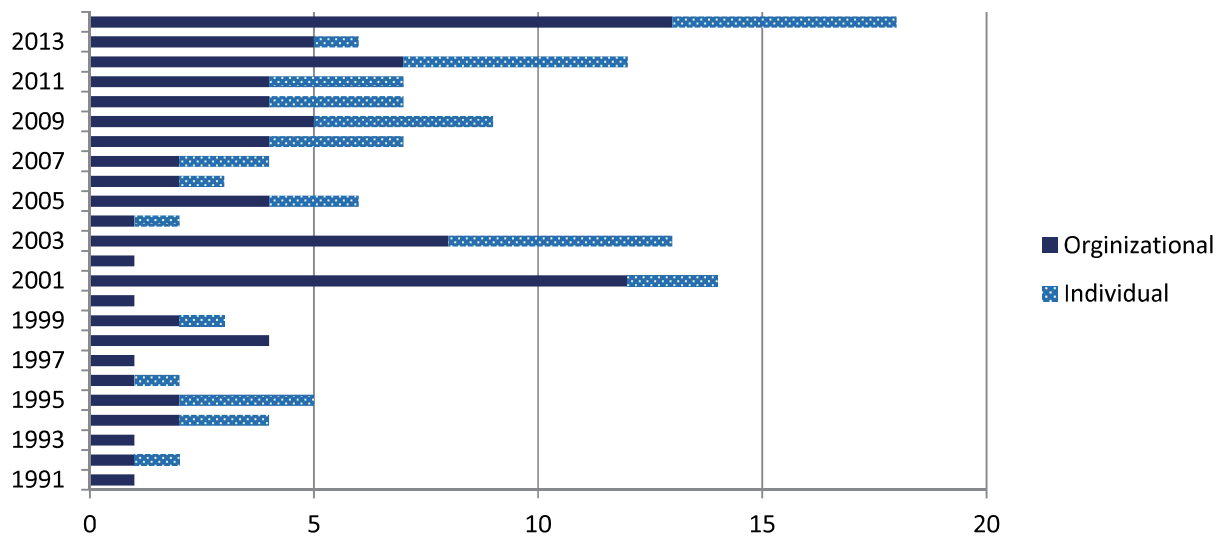
What Was It Like? - Key Elements of Entrepreneurship Research in Strategy Venue

In this section, the authors present the key elements of entrepreneurship research in SMJ that our analysis yields, such as research methods, level of analysis, variables and correlations.

Level of Analysis

Research at organizational level prevails. Although the number of research at the individual level (e.g. managers, CEOs, or top manager teams) rose after year 2000, its percentage remains relative low. Nonetheless, individuals featured more in 2007-2015 – possibly associated with the rise of the network perspective in 1999-2015.

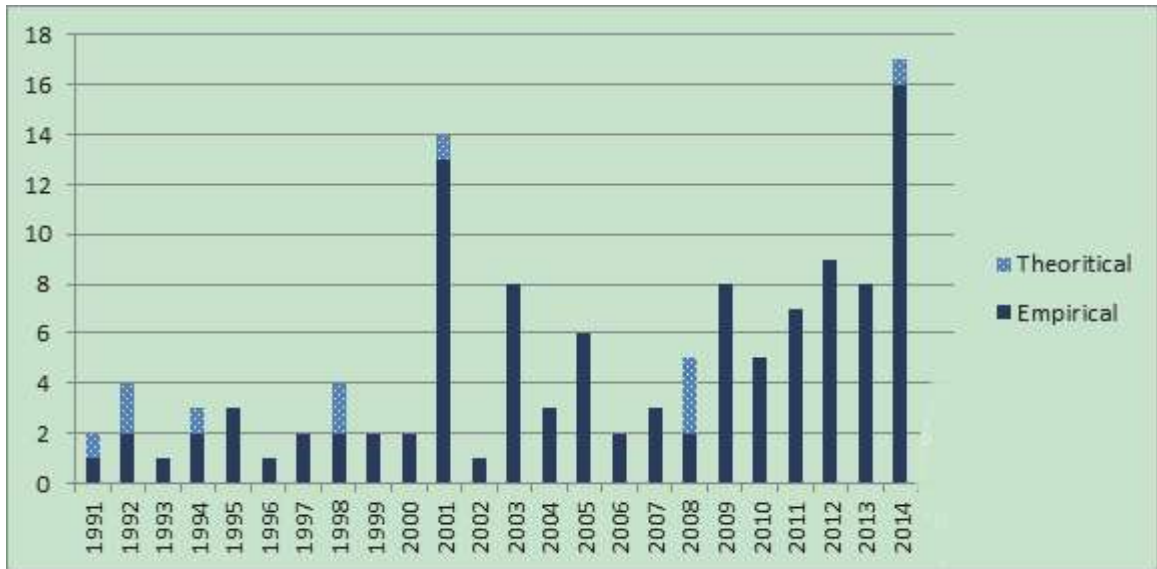
**FIGURE 10
INDIVIDUAL VS. ORGANIZATIONAL AS THE LEVEL OF ANALYSIS**



Research Methods

Our reading of the data reveals that the most popular empirical method has been econometrics. Other empirical methods also be applied include laboratory experiments and archival study (Cain et al., 2015), computer simulations (Keyhani et al., 2015), case study (Amit and Zott, 2001, Paroutis and Heracleous, 2013), or the combination of quantitative and qualitative method (Uzzi and Gillespie, 2002).

**FIGURE 11
RESEARCH METHOD (1980-2015)**



Among the 111 empirical papers shown in Table 3, 35 of them consider the moderate effect and 10 of them consider the mediating effect.

**TABLE 2
SUMMARY OF RESEARCH BY VARIABLES**

Empirical study	Moderator V	Mediator V	New V identified	Instrument V
111	35	10	9	2

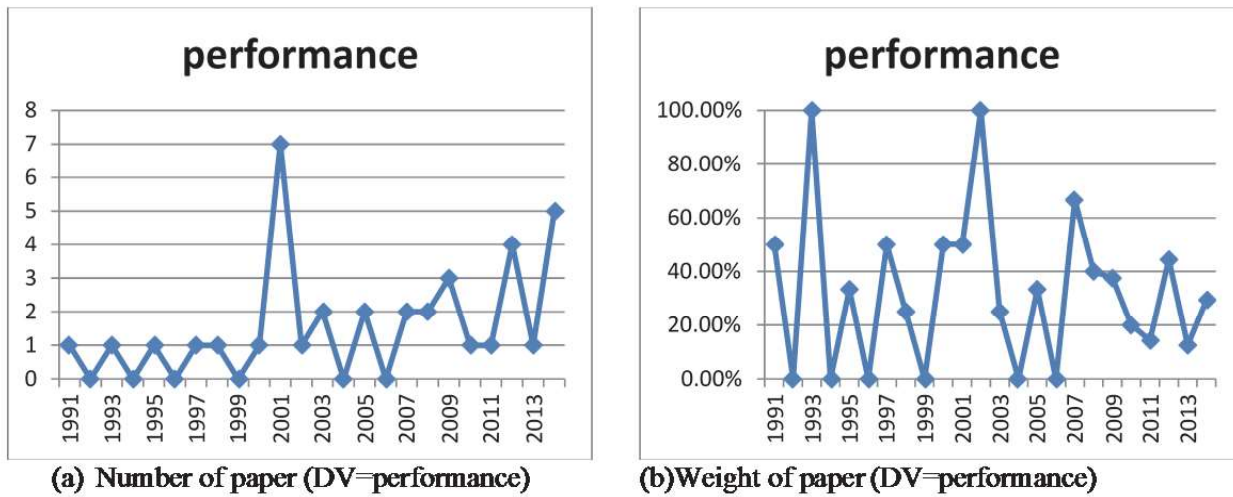
Variables

Our content analysis also generates information on the number and dominance of variables. In terms of moderators and mediators, most common variables include the environment (markets or industry) of firms, the experience or other characteristics of entrepreneurs or managers, and specific strategies. Among them, an increasing number of papers account for the dynamic environment as a moderator of firm performance or benefits (Simsek et al., 2010, Ma et al., 2011, Matusik and Fitza, 2012, Milanov and Shepherd, 2013, Eesley et al., 2014, Walter et al., 2014). Research with mediators appeared in 2001. Common mediators include the knowledge creating process, such as *knowledge acquisition* and *absorptive capacity* (Hull and Rothenberg, 2008, Arora and Nandkumar, 2012, Arend et al., 2014), and the decision of the firms or individuals (managers, entrepreneurs, or employees) in the examination of performance (McGee et al., 1995, Kor and Mahoney, 2005).

Nine studies in our sample utilized new variables. McGrath et al. (1995) defines *competence* as a strategic process paradigm when studying competitive advantage; Birkinshaw (1997) understands *initiative* as a key manifestation of corporate entrepreneurship, which has been widely cited in corporate entrepreneurship study; Lounsbury and Glynn (2001) sets forth the concept of *cultural entrepreneurship*, defined as the process of storytelling that mediates between extant stocks of entrepreneurial resources and subsequent capital acquisition and wealth creation; Uzzi and Gillespie (2002) examines *network transitivity* in their qualitative study of knowledge spillover in corporate financing networks; Nelson (2003) looks at the term *founder* in his study on the effect of individuals on venture performance; Teece

(2007) explains *dynamic capabilities* on the basis of his 1997 paper. Mirabeau and Maguire (2014) develops a model of *emergent strategy* formation at a large telecommunications firm. Lazzarini (2015) introduces the concept of support-adjusted sustainable competitive advantage (SASCA).

FIGURE 12
PUBLICATIONS WITH “PERFORMANCE” AS DEPENDENT VARIABLE

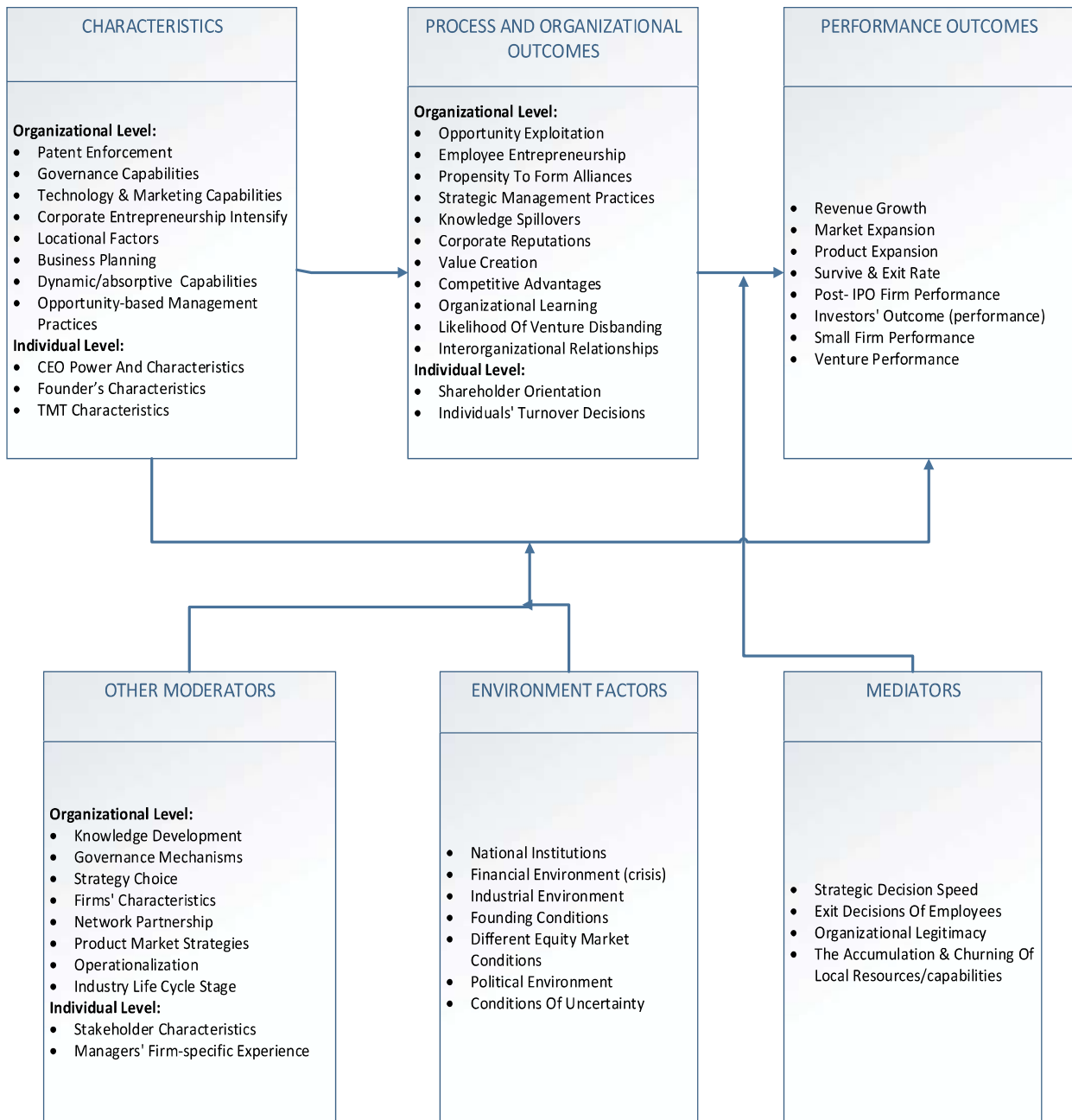


To better capture the change in variables, the authors performed a new analysis for “firm”, “industry”. The resultant figure captures the change in keywords. Notably, performance has always been an important theme in the past two decades, being a highly utilized dependent variable. The two main types of performance include high-tech firm performance and venture performance. Researchers studied both entrepreneur’s firms themselves, and venture capital firms which invest in the former. The overall attention to performance shifted from venture performance to high-tech firms’ performance. In addition, between 2001 and 2010, the environment of the firms, such as the market conditions, industry context, or networks of the firms became a focus.

Correlations

The model in Figure 14 is formulated with information derived from analysis and classification of various variables (e.g. outcomes, mediators, moderates) to synthesize the findings as to what relations we know about entrepreneurship research in strategy venue. This study includes 1) the characteristics and traits that are often the dependent variable, 2) process and organizational outcomes which typically correlate with the characters and which at times lead to performance outcomes, 3) performances outcomes which could result from the characteristics and process and organizational outcomes, 4) environmental factors, 5) other moderators, and 6) mediators. This Figure is by no means exhaustive but rather meant as an integrative framework for understanding the flourishing body of literature.

FIGURE 13
A MODEL OF ENTREPRENEURSHIP RESEARCH IN STRATEGY VENUE



What Is On? – Emerging Trends of Entrepreneurship Research in Strategy Venue

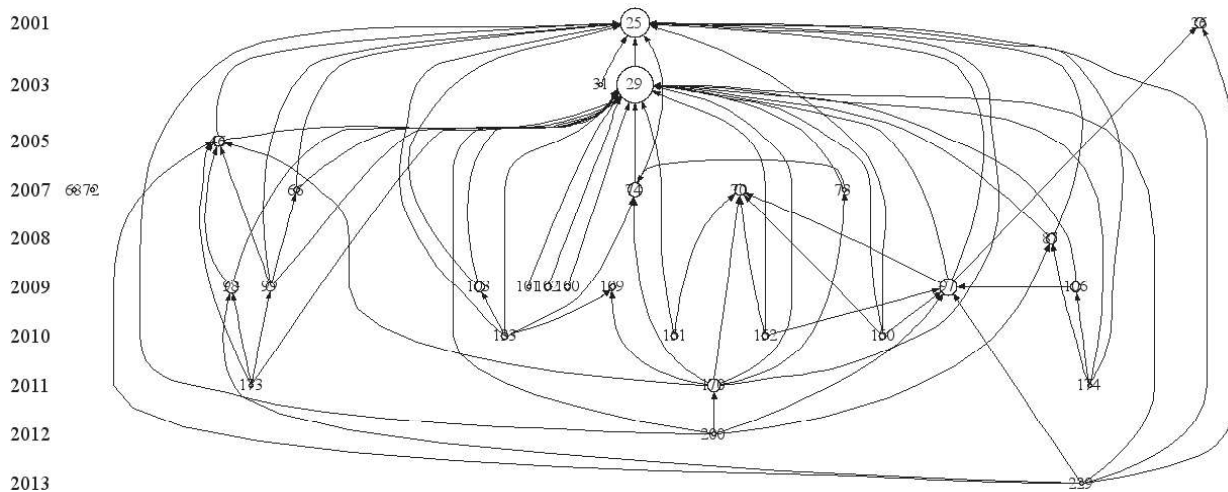
We now offer some general remarks on the few promising directions for future research that we have identified based on our analyses.

Topics Gaining Momentum

Our reading of the existing literature suggests that entrepreneurship research in strategy venue stresses more on economic issues than social issues, viz. studies of entrepreneurship are indeed with an orthodox strategic perspective. This finding is in line the visionary proposition of “strategic

entrepreneurship” by Hitt et al. (2001), where the concept is understood as “the integration of entrepreneurial (i.e., opportunity seeking behavior) and strategic (i.e., advantage seeking) perspectives in developing and taking actions designed to create wealth”. Hitt et al. (2001) lists several important domains of strategic entrepreneurship, including external networks and alliances, resources and organizational learning, innovation and internationalization, all of which are in line with the results from our bibliometric analysis.

FIGURE 14
“STRATEGIC ENTREPRENEURSHIP” CITATION GRAPH



(Tips: Record 25:Hitt et al. (2001); Record 29:Ireland et al. (2003))

Figure 15 is based on the top 50% cited references. It is clear that Hitt M.A. is the most influential author in the domain of strategic entrepreneurship. In Ireland et al. (2003), strategic entrepreneurship is understood as involving “simultaneous opportunity-seeking and advantage seeking behaviors and results in superior firm performance”. A wealth creation model for strategic entrepreneurship is promoted on the basis of the foundation of entrepreneurs’ characteristics, resource management, and firm environment (culture and leadership). The foundation affect the creativity and innovation process, which then shape the competitive advantages, and finally realize wealth creation. Our research framework validates and complements their model. Specifically in addition to the entrepreneurial culture and leadership mentioned in their model, this paper found that researchers have been granting systematic attention to industrial environment, financial environment, and uncertainty as the environment factors which would affect the process and performance outcomes. In addition, recent research has examined most individual level (CEOs, founders, and TMT) characteristics, such as CEOs’ power and founders’ experience. Furthermore, this study identified some mediators between process outcomes (e.g. innovation) and performance outcomes, such as strategic decision speed and the accumulation & churning of local resources or capabilities.

Level of Analysis

While firm and/or industry level remained the main research level of analysis in entrepreneurship study in SMJ, more recent research began to embrace about individual level variables (Fitza et al., 2009, Wang and Bansal, 2012, Cain et al., 2015). We welcome the “come-back” of the individual, especially when neighboring fields are actively embracing the micro-foundation and individual-based insights. An entrepreneur is an economic agent assuming an innovative and active behavior. “The attempt to understand the entrepreneurship without the entrepreneur is like the attempt to understand Shakespeare

without Hamlet.” (Baumol, 1996). We contend that this presents rich potential with clearly indicated avenues for the influence of entrepreneur-oriented theoretical and empirical development in the strategy field.

Another important trend is studying entrepreneurship with a “multi-level” lens. Research with this level of analysis (Koka and Prescott, 2008, Vissa and Chacar, 2009, Xavier Molina-Morales and Teresa Martinez-Fernandez, 2009, Ma et al., 2011, Milanov and Shepherd, 2013, Walter et al., 2014, Lazzarini, 2015) continue to appear, closely linked to the network perspective and the emergence and development of knowledge-based theory and strategic alliance.

Research Methods

Empirical methods have become increasingly diversified, and we expect such a trend to continue. Most of the papers published before 2010 were conducted with econometrics, while in more recent papers other methods began to be mobilized, e.g. laboratory experiments & archival study (Cain et al., 2015), computer simulations (Keyhani et al., 2015), case study (Amit and Zott, 2001, Paroutis and Heracleous, 2013). We believe more methods will feature in entrepreneurship research in strategy venue, including established ones such as narrative, and newer one that can incorporate big data and visuals.

Related to this, empirical research still dominates entrepreneurship research in SMJ, while theoretical pieces on entrepreneurship have been scarce. While the field represents a pattern of increased coherence in terms of theoretical perspectives, and enhanced efforts in framework building, the current study shows a delay of the theoretical expansion in SMJ. It is perhaps time to direct attention to develop sound theorization for entrepreneurship in strategy venue, given the plethora of theoretical perspectives this venue is typically associated with.

Variables

A number of new defined variables began to appear in entrepreneurship research in SMJ *strategy* from year 2000 on, e.g. *cultural entrepreneurship*, *network transitivity*, *dynamic capabilities*, and *emergent. Performance* has always been one of the most popular dependent variables in all of the three studied time frames, while independent variables, mediator variables and moderator variables changed remained largely constant. Complex relationships between the internal and external variables of the firms are examined in recent research (Eesley et al., 2014, Jia, 2014, Kulchina, 2014, Sundaramurthy et al., 2014, Walter et al., 2014, Lazzarini, 2015).

CONCLUDING REMARKS

This study contributes to the ongoing debate about what the field of entrepreneurship is, or should be, about (Shane and Venkataraman, 2000). Our evidence shows the continued expansion of entrepreneurship research in strategy venue, which represents an increasing body of knowledge on complex phenomena at the intersection of entrepreneurship and strategy.

Today, while the question of entrepreneurship’s maturity as a field of study is largely settled (Shane and Venkataraman, 2000, Gregoire et al., 2006), evidence of this maturity has rarely been triangulated with insights from an extra-field venue. This study, as our humble attempt to contribute to knowledge accumulation on entrepreneurship in influential non-entrepreneurship venue, provides an over-the-fence and supplementary view on the state of art of research on entrepreneurship. This supplement is not definitive nor is it intended to be. In mapping out the evolution of impactful work and authors, and predominant themes, our visual-rich bibliometric analysis also makes a methodological contribution by providing a fully replicable, integrated approach to examining the knowledge development in entrepreneurship and other fields.

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