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Venture Capital Research: A Bibliometric Analysis

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Abstract

Venture capital research is becoming very significant during the last decades. The aim of this study is to present a general overview of the leading journals, articles and authors in venture capital research between 1990 and 2014. Different analyses were performed, all of them at a general level for the described period. In order to do so, as is usual in bibliometric analysis, this work uses the Web of Science database. The article provides several bibliometric indicators, that includes the total number of publications, the total number of citations, and the *h*-index. The main contribution of this work is to develop a general overview of the leading journals, authors, universities in venture capital research, which leads to the development of a future research agenda for bibliometric analysis, such as the review of the most productive and influential authors, universities, and countries in venture capital research.

Keywords: Venture Capital; Bibliometrics; Journals; Authors, Universities; Web of Science.

1. Introduction

Venture Capital (VC) is an instrument for supporting the development and growth of new enterprises through the provision of financial resources and also offers business expertise, customer networks and good management practices (Hochberg et al., 2010). According to

Cornelius and Persson (2006), venture capitalists are financial intermediaries who collect excess capital from those who have it, and provide it to those who require it for the development of a business venture. In general, in the decades, venture capital research has grown considerably in proportion to other disciplines.

This article develops a way to analyze venture capital research over the last 25 years by using bibliometric indicators. Bibliometric studies are becoming very popular in the scientific literature (Merigó *et al.*, 2016), strongly motivated by the access to bibliographic information. Some studies have developed bibliometric analyses in a wide range of fields including: entrepreneurship (Landström, 2012), innovation (Cancino *et al.*, 2017a, 2017b), health economics (Wagstaff and Culyer, 2012), among others.

The article develops a journal and authors analysis identifying the leading ones in the field. In particular, this work describe that there are certain specialized journals that publish more in venture capital research with respect to other journals, for example, Journal of Business Venturing, Entrepreneurship Theory and Practice, and Small Business Economics. It also highlights other journals for having a high number of citations, even if they publish a large number of articles in VC research, such as the Journal of Finance, Journal of Financial Economics, Research Policy, Strategic Management Journal, Academy of Management Journal, Administrative Science Quarterly, among others. Moreover, a temporal analysis is developed in order to see which journals have been the most influential ones throughout time.

2. Literature Review

According to Gompers *et al.* (2008), Venture Capital (VC) research explores different steps, which involve the pre-investment phase of VC, the management of VC, and the exit strategies of VC. In the first step, pre-investment phase, VC research explores how changes in public market signals affected VC, or the conditions to facilitate the creation of greater firm value after receiving VC (Dushnitsky and Lenox, 2006). Research in this stage also analyses the process of creating relationships between venture capitalists and entrepreneurs (Hochberg *et al.*, 2010). In the second step, research in the management stage focused its attention on companies when they receive VC. For examples, researchers have explored the

links between the influence and control of VC firms (Bottazzi, Da Rin & Hellmann, 2008) and the management skills and expertise of entrepreneurs and new ventures, such as entrepreneurial orientation (Stam & Elfring, 2008). Finally, research in the exit step reviews how firms can develop either their initial public offering (IPO) or their buyout. Nahata (2008) suggests that companies backed by more reputable VCs by initial public offering (IPO) capitalization share, are more likely to exit successfully, access public markets faster, and have higher asset productivity at IPOs.

Even though VC research has three stages of analysis, VC research encompasses wide range of academic areas, without a particular discipline leading scientific research in this field. Academics from disciplines such as Finance, General Management, Innovation, Law, Public Policy, Sociology and Economics present a wide range of research on venture capital, which is very valuable because it brings different perspectives to analyze the problem of financing new businesses.

The above shows that the analysis of VC research is varied and can derive from different disciplines. It could be positive to have different perspectives to try to understand the problem.

3. Methods

Bibliometric research is a field that quantitatively studies bibliographic material (Broadus, 1987) providing a general overview of a research field according to a wide range of indicators. There are different ways of ranking material in a bibliometric analysis. The most common approaches use the total number of articles or the total number of citations. Another useful indicator is the h-index (Hirsch, 2005) that combines articles with cites indicating the number of studies X that have received X or more citations. Normally, the information about citations, total number of articles or h-index can be obtained from academic databases as Web of Science (WoS), Scopus or Google Scholar. WoS is one of the most popular databases for classifying scientific research worldwide. The assumption is that it only includes those journals that are evaluated with the highest quality.

In order to search for articles that have focused on venture capital research, the study uses the keywords “venture capital*” or “business venturing” or “corporate venturing” in the

title, abstract and keywords of any work available in WoS between 1990 and 2014, in order to capture as many possible combinations of terms related to venture capital. This search finds 2.086 articles that have become 1.820 studies by only considering articles, reviews, letters and notes. The search was developed in October 2015 and January 2016.

4. Results

There are many journals in the scientific community that publishes material related to venture capital research. Table 1 presents a list of the twenty journals with the highest h -index in venture capital research.

R	Journal	Venture Capital			
		TPV	TCV	HV	TP
1	Journal of Business Venturing	164	6976	48	836
2	Journal of Finance	23	2923	21	1972
3	Journal of Financial Economics	35	2884	21	1791
4	Entrepreneurship Theory and Practice	49	1070	21	515
5	Research Policy	37	1609	20	2059
6	Small Business Economics	67	833	16	1252
7	Strategic Management Journal	25	1477	15	1726
8	Journal of Management Studies	23	624	14	1252
9	Journal of Banking Finance	25	1024	13	3561
10	Journal of Corporate Finance	35	569	13	723
11	Technovation	30	396	13	1538
12	Academy of Management Journal	19	916	11	1490
13	Review of Financial Studies	26	763	10	1377
14	Harvard Business Review	26	634	10	4847
15	Management Science	14	966	9	3247
16	Entrepreneurship and Regional Development	18	300	9	381
17	Administrative Science Quarterly	8	1050	8	512
18	Organization Science	16	613	8	1301
19	Financial Management	14	494	8	832
20	Journal of International Business Studies	11	260	8	1162

Table 1: Most influential journals in venture capital research according to WoS

R means rank, **HV** means *h*-index in venture capital research, **TPV** means the total number of publications in venture capital research, **TCV** means the total number of citations in venture capital research, and **TP** means the total number of publication of the journal.

The first journal of the Table 1, Journal of Business Venturing, publishes about 20% of the total articles on venture capital research,

Also, Table 1 show that scientific analysis on venture capital comes from many disciplines, and it is not possible to identify a specific group of journals leading the discipline. This is evident if the group of the twenty most cited papers in venture capital research is analyzed (Table 2).

R	Authors	Year	Journal
1	Stuart, TE; Hoang, H; Hybels, RC	1999	Administrative Science Quarterly
2	Zucker, LG; Darby, MR; Brewer, MB	1998	American Economic Review
3	Sahlman, WA	1990	Journal of Financial Economics
4	Megginson, WL; Weiss, KA	1991	Journal of Finance
5	Powell, WW; White, DR; Koput, KW; Owen-Smith, J	2005	American Journal of Sociology
6	Krueger, NF; Reilly, MD; Carsrud, AL	2000	Journal of Business Venturing
7	Berger, AN; Udell, GF	1998	Journal of Banking & Finance
8	Lee, C; Lee, K; Pennings, JM	2001	Strategic Management Journal
9	Sorenson, O; Stuart, TE	2001	American Journal of Sociology
10	Mcdougall, PP; Shane, S; Oviatt, BM	1994	Journal of Business Venturing
11	Shane, S; Stuart, T	2002	Management Science
12	Kaplan, SN; Stromberg, P	2003	Review of Economic Studies
13	Podolny, JM	2001	American Journal of Sociology
14	Hellmann, T; Puri, M	2002	Journal of Finance
15	Black, BS; Gilson, RJ	1998	Journal of Financial Economics
16	Kortum, S; Lerner, J	2000	Rand Journal of Economics
17	Lerner, J	1995	Journal of Finance
18	Di Gregorio, D; Shane, S	2003	Research Policy
19	Zucker, LG; Darby, MR; Armstrong, JS	2002	Management Science
20	Barry, CB; Muscarella, CJ; Peavy, JW; Vetsuypens, MR	1990	Journal of Financial Economics

Table 2: Most cited articles in venture capital research according to WoS

For this group it is possible to identify 12 different journals: Administrative Science Quarterly, American Economic Review, American Journal of Sociology, Journal of Banking & Finance, Journal of Business Venturing, Journal of Finance, Journal of Financial Economics, Management Science, Rand Journal of Economics, Research Policy, Review of Economic Studies and Strategic Management Journal. Among this group, three journals (Journal of Financial Economics, Journal of Finance and American Journal of Sociology) present three articles each on the list of the 20 most cited papers in venture capital research.

Some leading authors in venture capital research stand out in this discipline, not only because of the large number of publications which they develop but also because of their high influence on the rest of the researchers of the world. Table 2 presents a ranking with 20 leading authors in venture capital research, which are classified according to their h-index, which allows us to analyse their influence on other researchers.

R	Name	University	Country	TP	TC	H
1	Lerner J	Harvard University	USA	27	2821	21
2	Wright M	Imperial College Business School	UK	42	1368	20
3	Shepherd DA	Indiana University	USA	22	966	17
4	Cumming D	York University	Canada	29	657	16
5	Lockett A	University of Nottingham	UK	16	604	13
6	Sapienza HJ	University of Minnesota	USA	13	925	12
7	Mason CM	University of Strathclyde	UK	12	311	12
8	Harrison RT	University Belfast	UK	11	296	11
9	Gompers P	Harvard University	USA	10	860	10
10	Busenitz LW	University of Oklahoma	USA	10	591	10
11	Manigart S	School and Ghent University	Belgium	20	481	10
12	Hellmann T	University of British Columbia	Canada	8	1003	8
13	Keil T	Aalto University	Finland	8	266	8
14	Schwiebacher A	University of Amsterdam	Netherlands	11	180	8
15	Bruton GD	Christian University	USA	8	411	7
16	Dushnitsky G	London Business School	UK	7	383	7
17	Keuschnigg C	University of St. Gallen	Switzerland	8	358	7
18	Pollock TG	The Pennsylvania State University	USA	7	344	7
19	Zahra SA	University of Minnesota	USA	8	296	7
20	Dimov D	Newcastle University Business School	UK	8	158	7

Table 3: The most influential authors in venture capital research according to WoS

The results shown in Table 3 are that researchers from the USA and UK lead the ranking of the most influential authors in venture capital research. Among the first 10 authors, 50% works in USA universities and 40% works in UK universities. Also, from the total of 20 leading authors 60% works in USA and UK universities. Following the USA and UK, researchers from Belgium, Canada, Finland, Netherlands and Switzerland are present in our rankings. Another important highlight is that the most influential authors come from different universities; the generation of the most influential knowledge on venture capital research is not gathered in any particular university. In fact, among U.S. universities, only Harvard University presents two authors in our rankings.

5.- Conclusions

This work presents a general overview of the leading journals, articles and authors in venture capital research between 1990 and 2014. Different analyses were performed, all of them at a general level for the described period.

First, the analysis focused on studying a ranking of 20 leading journals that present a greater *h*-index in the discipline. In this ranking, it is possible to observe an interesting discussion that reveals that the most productive journals, i.e., those who have a greater quantity of published work, are not necessarily the most influential, i.e. those who have a greater number of citations by the scientific community. Only one case, Journal of Business Venturing which is the most productive, is also the most influential journal. Evidently, this is the only specialized journal in venture capital research. Interestingly, some cases, such as Journal of Finance, Strategic Management Journal and Journal of Banking & Finance, present an important number of citations (more than 1000) in fewer than 25 papers. These three journals, despite not being specialized in venture capital research, publish very influential papers. The work also develops ranking of the more cited articles in venture capital research and a list with most influential authors in the discipline under study.

Clearly, venture capital research will continue growing and it is necessary to deepen the analysis of the authors, countries and universities that lead research in this discipline, who are not only the most productive players but also the most influential actors.

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