Venture Capital and Private Equity: Trends and Challenges using Bibliometric and Bibliographic Tools

THIS VERSION: 27 June 2024

João Caldeira*
Caixa Capital – Sociedade Capital de Risco, S.A., Portugal; ISCAL – Instituto de Contabilidade e Administração de Lisboa, Instituto Politécnico de Lisboa

Carlos Manuel Pinheiro

Universidade Europeia, Lisboa, Portugal; Instituto Universitário de Lisboa (ISCTE-IUL) Business Research Unit (BRU-IUL), Lisboa, Portugal; ISCAL – Instituto de Contabilidade e Administração de Lisboa, Instituto Politécnico de Lisboa; Center for Transdisciplinary Development Studies (CETRAD), Portugal

ABSTRACT

Drawing on an extensive analysis of 2,386 research papers, this study elucidates the primary themes prevalent in past studies on venture capital and private equity. Our comprehensive analysis of a significant number of papers facilitates a quantitative analysis yielding fundamental metrics such as citation scores, influential authors, and seminal publications. By combining both bibliometric and bibliographic methodologies, our paper provides an integrate overview of findings from diverse studies, unveiling predominant themes in the discourse on venture capital and private equity. Augmented by insights into financial market innovations sourced from pertinent literature, we extrapolate future research directions in these domains. The implications of our results extend to borrowers, lenders, and stakeholders within the venture capital and private equity landscape, offering insights for informed decision-making and strategic planning.

JEL Classification: C80; G10; G14, G24

Keywords: Venture Capital; Private Equity; Bibliometric Review; Bibliographic Review

* Corresponding author: João Caldeira; Quinta do Bom Nome, Estrada da Correia, nº53 - 1500-210 Lisboa – Portugal; Phone: +(351) 914 837 523; e-mail: joao.caldeira@caixacapital.pt

Venture Capital and Private Equity: Trends and Challenges using Bibliometric and Bibliographic Tools

1. Introduction

Venture capital and private equity (VC&PE) are fundamental components of financial markets, attracting significant attention from researchers over the past few decades, due to their robust growth trajectory on global markets and their transformative impact on businesses (Metrick & Yasuda, 2011). The number of published papers has increased by a factor of 10 in the last 25 years.

Modern venture capitalism is often traced back to the formation of American Research and Development Corporation (ARDC) around 1946. Following its inception and exponential expansion in the U.S. fostered by success stories of large companies and underpinned by technological advances and innovation, VC&PE expanded in the 1990s to the more developed economies in Europe with economic potential targeting especially mature companies. The formation of NASDAQ also fuelled the growth of the VC&PE markets, enabling Initial Public Offerings (IPOs) as an exit route for investors, making it easier for them to liquidate their investments by selling shares to the public (Coakley et al., 2017; Matanova et al., 2022).

Private equity involves investing in private companies not listed in public exchanges and often targets more mature companies, to facilitate turnarounds and restructuring. Private equity firms often take a controlling interest in these companies, implementing changes

to improve efficiency, profitability, and growth prospects before eventually exiting the investment, usually through a sale or public offering. On the other hand, venture capital focuses on early-stage companies, namely in the technology and innovation sectors. These companies are typically in the initial phases of their development and may not yet have substantial revenue. Venture capitalists provide the necessary funding to help these start-ups develop their products, enter the market, and scale their operations. In addition to financial support, venture capitalists often offer strategic guidance, industry connections, and operational expertise to help young companies navigate the challenges of early growth. The goal is to nurture these companies until they reach a stage where they can achieve significant growth or become attractive acquisition targets.

The depth and breadth of research on VC&PE, their mechanisms, effects, and implications, have mirrored the dynamic nature of these fields and their growing influence on the global economy (Li, 2024). From early explorations into their role in fostering innovation and entrepreneurship to more recent investigations into their financial intricacies and societal ramifications, the evolution of research in VC&PE reflects the evolving contours of modern finance and entrepreneurship. Given the heterogeneity and breadth of the topics addressing VC&PE, we believe it is useful to apply an approach that allows for identifying the seminal works and the core areas of research.

Using bibliometric techniques, this paper analyses the intellectual structure of scholarly research in the field of VC&PE. Specifically, we map and connect the development of individual keywords and thematic clusters in all academic journal publications covered by the Web of Science platform since the year 2009. In contrast to literature reviews—which typically provide very detailed overviews but are necessarily focused on specific

topics or subfields of the literature—we are able to identify themes that bind together the different sub streams of the literature and act as the core of the discipline.

We thereby provide a systematic overview of the literature and pursue three main objectives. First, we identify the key thematic clusters that serve as the foundation of VC&PE research since 2009 and provide a brief overview of the literature of each cluster. Second, we analyse keyword occurrences and their interrelations, allowing for a deeper look into subtopics, time trends in their importance, and connections between thematic keywords. Third, we identify the topics that have been at the forefront of recent developments in the academic literature. To fulfil these objectives, we use methods of bibliometric analysis that enable us to handle large amounts of publication data (Donthu et al., 2021; Ramos-Rodríguez & Ruíz-Navarro, 2004). Specifically, we use co-citation to find themes that have served as building blocks for academic VC&PE research since 2009 and keyword co-occurrence to identify major topics in the field. To identify thematic clusters and topics currently being pursued in research, we follow Andersen (2021) and apply bibliographic coupling to articles published within the last 3 years (2021–2023).

We start by presenting the methodology. In Section 3 we provide a source analysis. Section 4 addresses the structure of the field using co-citation analysis. In Section 5 we propose future directions of VC&PE and Section 6 concludes.

2. Methodology

This study uses bibliometric methodologies to analyse the field of VC&PE research. The bibliometric method is the application of quantitative tools to bibliographic data (Broadus, 1987). Bibliometric analysis has been considered a legitimate method of

scientific review in many fields of study, e.g., management, finance and related topics (Donthu et al., 2021; Ellegaard & Wallin, 2015; Kumar, Sureka, et al., 2021; Pandey et al., 2023). Due to its quantitative nature, it facilitates the analysis of large quantities of bibliographic data while minimizing potential biases (Burton et al., 2020). With the use of bibliometric methods, authors can summarize the literature using quantitative tools and minimize interpretation bias.

We use co-citation analysis, keyword co-occurrence, and bibliographic coupling to fulfil our research objectives. The co-citation technique is based on the idea that papers cited together are similar in content (Donthu et al., 2020). This analysis is useful in finding major themes in a body of work (Liu et al., 2015) and thereby identifying the intellectual structure of a field (Rossetto et al., 2018). Our analysis uses co-citation to find themes that have served as building blocks for academic VC&PE research in the period 2009-2023.

Keyword co-occurrence analysis (Callon et al., 1983) assumes that the appearance of certain words together across different documents indicates their relatedness on a conceptual level. Author-chosen keywords in any publication are the set of words that are used to express its central themes (Zou et al., 2018). These words are considered important by the authors (Pesta et al., 2018) and thus represent what the authors aim to convey as the core of their research (Comerio & Strozzi, 2019). The analysis of keywords and their co-occurrence can be instrumental in understanding a field of study (Castriotta et al., 2019). We use keyword co-occurrence to identify more specific research topics. The approach is similar to that of Hutton et al. (2021) who analyse research trends in corporate finance by reviewing articles published in the Journal of Corporate Finance based on keyword analysis. Doing so their study presents the development of research

trends over the journal's 25-year history while outlining fruitful directions for future research in the area of corporate finance.

Bibliographic coupling, or co-referencing, analysis assumes that the similarity between two documents will depend upon their shared literature references (Kessler, 1963; Kumar et al., 2020; Mukherjee et al., 2021; Weinberg, 1974). The development of any scientific field depends on the knowledge that precedes it (Samiee et al., 2015), and the contributions of any study are based on the literature accessed to conduct it (Hoffman & Holbrook, 1993). The prior knowledge generated in the field is often acknowledged in the form of literature references. Therefore, two documents accessing the same sources of knowledge, that is, that share literature references, must have similarities in themes and topics. We use bibliographic coupling for the analysis of more recent research articles (2021–2023) to identify topics that are currently of interest to researchers. The reason for this methodological choice is that the number of articles is much smaller than the overall corpus, facilitating the creation of article clusters. In addition, the focus of the third part of our study is on articles that have been published fairly recently. These articles might thus not yet have appeared in reference lists, which is a necessary requirement for co-citation analysis. In the case of keyword co-occurrence[1], some keywords are very general (e.g., performance) and are used in multiple contexts, requiring an examination of the articles they appear in to derive any meaning (Chang et al., 2015). Bibliographic coupling focuses on the articles themselves and is therefore preferable if a relatively smaller number of articles are to be linked and summarized.

[1] We also use the keywords provided by Web of Science database.

The articles considered in our analysis are obtained using the keywords "private equity", "venture capital" and "buyout" in the Web of Science database in December 2023[2]. This choice is motivated by the coverage of high-quality sources in Web of Science and prior research (e.g., Baker et al., 2020; Kurzhals et al., 2020; Linnenluecke, 2017; Lu et al., 2012; Mas-Tur et al., 2020; Poje & Groff, 2021; Soto-Simeone et al., 2020). The search is restricted to articles published between 2009 and 2023, with the language restricted to English. This search results in 4,110 documents (called articles hereafter). We further apply subject area filters with results restricted to the Web of Science categories of management, business, business finance, and economics, which results in 3,044 articles. We then apply a quality filter and consider only articles published in journals listed in the Academic Journal Guide (2021, hereafter AJG)[3], published by the Chartered Association of Business Schools. This step leads to a final set of 2,386 articles.

In the co-citation analysis (Section 4), which is used to identify major research themes, we consider only articles with at least 50 citations. There are no methodological guides for choosing a specific citation threshold, the network visualization being the sole concern behind the threshold choice (Eom, 2009; Hota et al., 2020). Previous studies have used the stress value to determine the goodness of fit for their network (e.g., Hota et al., 2020),

[2] We search Web of Science database for the terms private equity, venture capital and buyout in titles, abstracts, and keyword fields. Even though this search strategy yields a very large number of results (to be filtered on a later stage), it is also a potential disadvantage for journals that do not publish keywords. Therefore, some of the journals that are generally considered high-quality sources of research on VC&PE may also be underrepresented in the resulting corpus. By analysing the most cited references and by using co-citation as a bibliographic technique, we overcome this potential constraint and thereby include these high-quality sources in our analysis. In addition, we follow Hutton et al. (2021) and analyse abstracts.

[3] While a listing in the academic journal guide can be regarded as a mark of quality, it should be pointed out that the different ratings express a broad range of quality and prestige. While the ratings of 4* and 4 are often described as denoting "journals of distinction" and "world leading journals" (4*), those with a rating of 1 are described as having a "more modest standard in their field" (Methodology 2021 of the Academic Journal Guide).

but, as noted by Chabowski et al. (2013), stress values can be influenced by the removal and/or addition of studies, which may make the configurations less meaningful. In the resulting network, after merging duplicate entries, we obtain a network containing 214 articles that represent the most impactful publications in the field.

3. Source Analysis

We use Web of Science as the only database of our study to ensure consistency and to avoid confounding effects as different databases use different criteria and data formats.

We use the default threshold of five occurrences in VOSviewer (van Eck & Waltman, 2010) to generate the keyword co-occurrence network (Section 5), and we exclude keywords that are the plural form or abbreviations of others (e.g., top management team, top management teams, and TMT are merged). Network matrices are calculated for the resulting network of 673 keywords. For the analysis of recent research fronts (Section 6), we focus on articles published between 2021 and 2023 and cluster them using bibliographic coupling. Figure 1 illustrates the research design.

Figure 2 shows the number of publications in the field of venture capital (VC) and private equity (PE) from 2009 to 2023. The number of publications more than doubled up to 2022, indicating an increasing trend. However, this trend reverses from 2022 to 2023, likely due to several factors: the slowdown in economic activity, aftershocks from the COVID-19 pandemic, rising interest rates, and increased market volatility driven by geopolitical tensions and armed conflicts. In a similar vein, Figure 3 provides the number

of citations and the recent evolution parallels that of the number of publications illustrated in Figure 2.

Although Figure 1 shows that reductions in the number of publications from one year to the next are not uncommon, the decrease from 2022 to 2023 is notably more significant than previous periods. This is particularly striking given the overall rise in publications in management sciences each year. The increase in the number of publications from 2018 to 2022 was reversed in the period from 2022 to 2023. The number of publications in 2023 is less than the same number in 2019. Figure 2 corroborates the previous considerations, in number of citations revealing that VC&PE appears to be a less topical issue in 2023 than it was on the previous 5 years.

Table 1 presents the most prolific journals in VC&PE with a striking variation between the top journal in terms of total citations – Journal of Corporate Finance with 2,390 citations – and Management Science ranking 15 with solely 845 total number of citations. The top 3 journals are Journal of Corporate Finance, Small Business Economics and Journal of Financial Economics and none of those that might be natural candidates as e.g. Journal of Business Venturing (ranking 4), Venture Capital (ranking 5) or Entrepreneurship Theory and Practice (ranking 9), and Strategic Entrepreneurship Journal (ranking 10). The rankings of less specialized journals on VC&PE might be explained by the diversity of themes as we later analyse.

Table 2 complements the previous analysis by presenting the distributions of publications across Academic Journal Guide (AJG) rankings. ABS 4 and ABS 3 journals represent more than two thirds of the volumes in terms of number of publications, total number of citations, and number of citations per publication.

These findings highlight the relevance of VC&PE research attracting the top journals in the fields of management and finance.

4. Structure of the Field

Table 3 presents the most prolific authors and Table 4 the top authors by their influence proxied by the number of citations. The networks of researchers are illustrated in Figure 4 and Figure 5 presents the co-citation network of journals.

In a similar vein, Tables 5 and 6 list the institutions also by prolificness and influence.

Figure 6 illustrates the clustering and the topics they encompass based on the cooccurrence of terms.

Tables 7 and 8 examine the prolificness and influence of venture capital and private equity on a country-by-country basis. U.S. stands out as the country harbouring 35% of all publications. Published papers in the U.S., U.K. and China represent two thirds of all scientific production in the field. The U.S. and U.K. stand out with more than half of the total number of publications and citations per publication as illustrate in Table 8.

Our analysis of the final sample of 2,386 articles results in four clusters, as we briefly address in the following sections.

4.1 Investment Strategies and Allocation

The literature on Investment strategies and allocation forms a large thematic cluster, touching a number of topics:

- Allocation – Gompers et al. (2008) analyse venture capital investment cycles. Gompers et al. (2009) investigate the impact of organizational structure on

behavior and outcomes by analysing the performance of various types of venture capital organizations. Their findings suggest that suboptimal performance is attributable to both an inefficient allocation of funds across different industries and poor investment choices within those industries.

- Performance – Phalippou and Gottschalg (2009) explore the factors that influence performance, addressing various misleading aspects of performance reporting and highlighting some side benefits as an initial step towards providing an explanation. Harris et al. (2014) study the performance of 1,400 U.S. buyout and venture capital funds and their findings document that venture capital funds outperformed public equities in the 1990s, but underperformed in the 2000s.
- Typology of funds (pension funds, hedge funds, private equity funds, venture capital funds), venture capitalists and business angels - related to the previous topic and using a database of 224 matched IPOs (112 in UK and 112 in UK) Bruton et al. (2010) find that two types of private equity investors (venture capitalists and business angels) have a differential impact on performance.

4.2 Ownership Structures and Profitability

Another strand of literature encompasses:

- Ownership - in a cross-country analysis, Bena et al. (2017) find that greater foreign institutional ownership encourages long-term investment in tangible, intangible, and human capital. Badertscher et al. (2013) examine the influence of ownership structures on corporate tax avoidance.
- LBOs – Boucly et al. (2011) analyse the change in corporate behaviour following a leveraged buyout (LBO) for a data set of 839 French deals. Cao et al. (2015)

examine cross-border, private equity sponsored LBOs in 43 countries and find that cross-border LBO investment are more common from strong creditor rights countries to weak creditor rights countries. Nikoskelainen and Wright (2007) study the influence of corporate governance mechanisms on leveraged buyouts. Kaplan (1989) is a seminal paper on buyouts.

- M&As - Ben Amor and Kooli (2020) analyse a large sample of U.S. IPOs and M&As from 1996 to 2015 to determine whether merger and acquisition (M&A) exits impact venture capital (VC) reputation as significantly as initial public offering (IPO) exits. They find that M&A exit strategies are equally important as IPO exit strategies in motivating young venture capital firms to enhance their reputation.
- Profitability – Uddin and Chowdhury (2021) investigate private equity exit strategies and profitability during the Covid-19 pandemic around the world, highlighting that private equity exit strategy is important for investors as a planned and effective exit strategy. Caporale et al. (2024) model profitability of private equity applying fractional integration.

4.3 Strategic Alliances and Innovation

- Strategic Alliances – Wang et al. (2012) explore whether venture capital firms use strategic alliances as a substitute for or complement to capital infusion, and how these firms utilize alliances to mitigate various types of risk. Their findings reveal that venture capital firms consider alliance formation as a substitute for capital infusion. Furthermore, the breadth of the network of syndication partners investing in a start-up increases the number of its strategic alliances. Specifically, firms in industries characterized by technical risk are more likely to form alliances

with partners that can mitigate technical risks, while firms in environments characterized by market risk tend to ally with partners that can mitigate market risks. Kim et al. (2022) investigate the effects of buyouts in intermediate coalition among players and their results contradict earlier studies, which view the ability to form an intermediate coalition as a valuable asset for non-veto players in increasing their bargaining power.

- Innovation - A recent study by Li et al. (2023) examines the impact of venture capital's tolerance for technological innovation failure on the technological innovation performance of Chinese invested companies. Recognizing the heterogeneity of venture capital, their results indicate that a higher tolerance for technological innovation failure by venture capitalists leads to improved technological innovation performance in these companies. Xiao et al. (2023) investigate which type of venture capital is more advantageous for product innovation in entrepreneurial ventures. The authors examine the drawbacks and various impacts of corporate venture capital (CVC), finding that while CVC enhances the effectiveness of product innovation in entrepreneurial ventures, it also reduces their efficiency.

4.4 Entrepreneurship, Technology and VC Funding

Entrepreneurship - Levasseur et al. (2022) present a number of possible mixed methods avenues for future research, aiming to stimulate scholars' interest in their proposed and underutilized methods. Bustamante et al. (2021) highlight the crucial role of venture capital (VC) markets for the development of high-growth entrepreneurship, highlighting

the role of institutions in creating venture capital markets. Zhang et al. (2023) deploy a comprehensive bibliometric review of early-stage entrepreneurial equity financing. Tian, (2012) examines the role of venture capital syndication in entrepreneurial firms.

- Technology - Galbraith et al. (2012) examine 271 expert assessments on the potential of early-stage technologies and find that evaluation of commercial potential is related to obtaining subsequent private equity investment. Wang et al. (2019) examine the impacts of corporate venture capital (CVC) and independent venture capital (IVC) on technological innovation and value creation in Chinese listed companies. Their study documents that CVC investment can generate higher firm value[4] compared to IVC investment.
- VC Funding - Alakent et al. (2020) examine how corporate social responsibility (CSR) is influenced by ownership history, particularly focusing on whether a company has received venture capital (VC) funding. Uzuegbunam et al. (2019) investigate the impact of CVC funding on new firms' subsequent intellectual property (IP) outcomes (i.e., patents[5], copyrights, and trademarks). They posit that CVC encourages the development of technology-centric IP outcomes.

[4] Acharya et al. (2013 is a seminal contribution on value creation pertaining to private equity.

[5] Lerner et al. (2013) study the impact of Private Equity on innovation, from evidence provided from patents.

5. Future Directions

To navigate the future of venture capital and private equity, several key topics should be considered.

5.1 Market sentiment

Amidst increasing uncertainty across the markets, future research should consider sentiment (optimism and pessimism measures) both from the lending side and the borrowing side. The intuition that capitalists' sentiment plays a role in deal activity builds on the assumption that lenders expecting economic growth and a positive evolution of their companies should be more prone to consider new deals and the opposite might also be true. Does sentiment influence VC&PE deal activity? This is a question still requiring empirical analysis.

5.2 Advanced analytics and technology

The continuous advancements in technology necessitate an in-depth analysis of their impact on deal activity and the transfer of knowledge from venture capitalists and private equity funds to the companies they support. This support extends beyond financial backing, emphasizing organizational development and strategic guidance.

Technologies such as block chain and cryptocurrencies, while often viewed with scepticism, are increasingly integral across various sectors and funding mechanisms. These innovations are reshaping traditional business models and creating new opportunities for value creation and operational efficiency. Venture capitalists and private equity firms play a crucial role in facilitating the adoption of these technologies, providing

not just capital but also expertise and strategic direction to help companies navigate the complexities of technological integration.

5.3 ESG Considerations

Although “ESG is both extremely important and nothing special” (Edmans, 2023), VC&PE firms cannot be excluded from the burgeoning body of literature on environmental, social, and governance (ESG) issues. The previous assertion underscores the paradoxical nature of ESG: while it is fundamental to sustainable business practices, its principles should be inherent and unremarkable in modern investment strategies.

VC and PE firms should increasingly recognize the significance of ESG factors, integrating them into their investment processes not merely as compliance requirements but as strategic imperatives that drive long-term value. This integration involves a thorough assessment of potential investments based on ESG criteria, ensuring that the companies they back are aligned with sustainable and ethical practices. The pressure from stakeholders on firms ESG performance is the new normal.

5.4 Managerial practices

Whether the impact of VC&PE is beneficial for corporate governance and managerial practices is an avenue of research that can shed light on how venture capitalists and private equity firms influence the companies they invest in, particularly over the medium term.

In what ways do VC&PE firms influence managerial practices? This includes operational efficiencies and leadership development (often denoted managerial abilities), and strategic decision-making processes.

Is the influence of VC&PE firms on corporate governance and managerial practices enduring? Do the changes they implement persist after they exit their investment, or do companies revert to pre-investment practices?

5.5 Miscellaneous

Other important research fronts to consider in the context of VC&PE include:

- Research on the diversification effects across sectors, jurisdictions and deal structuring can uncover how spreading investments across varied industries and geographical regions can mitigate risks and enhance returns. Additionally, understanding the nuances of deal structuring can provide insights into optimal investment strategies.
- Investigating market segmentation in terms of high-growth versus medium-growth firms can yield valuable insights. This involves examining market premium, which can inform policies aimed at fostering growth in different segments. High-growth firms often require different support mechanisms compared to medium-growth firms, and recognizing these distinctions can help tailor more effective investment and regulatory strategies.
- A deep dive into regulatory impacts and tax policies through state-of-the-art frameworks is essential. This research can assess how different regulatory environments and tax regimes influence VC&PE activities. Understanding these impacts can guide policymakers in creating favourable conditions for investment while ensuring compliance and sustainability.
- Investigating exit strategies, particularly the dependence on an active IPO market, is another critical area. This research can explore alternative exit mechanisms and their effectiveness. Understanding the dynamics of the IPO market and other exit

avenues can help VC&PE firms plan their investment lifecycle more effectively and maximize returns.

6. Conclusions

This study presents a comprehensive analysis of the trends and networks in VC&PE research, focusing on articles, authors, institutions, and countries since 2009. Utilizing co-occurrence and co-citation techniques, we have identified major themes and proposed avenues for future research.

Our analysis highlights the relevance of VC&PE from both financial and managerial perspectives. The findings suggest that firms increasingly adopt a strategic and managerial approach when engaging with venture capital or private equity, not only to fuel growth but also to drive value creation. This managerial style involves leveraging the expertise and strategic guidance provided by VC&PE firms, which goes beyond mere financial support.

Our study makes a number of contributions by addressing trends in research, showing that the proliferation of research articles over the past two decades underscores the growing academic and practical interest in VC&PE. The identification of prominent authors, institutions, and countries provides a map of the leading contributors to VC&PE research. This network analysis helps in understanding the collaborative efforts and intellectual hubs that drive the field forward.

Departing from published research and co-occurrence and co-citation patterns, we have unveiled possible themes in VC&PE future research. These include a deeper analysis on the role of VC&PE in corporate governance, managerial practices, diversification strategies, market segmentation, regulatory impacts, and exit strategies.

By providing a detailed overview of the current state of research and suggesting future directions, this study aims to contribute to the ongoing development and enhancement of VC&PE practices, ultimately supporting more informed decision-making and policy formulation in the field.

Acknowledgements

We acknowledge administrative and financial support from Instituto Politécnico de Lisboa.

References

Acharya, V. V., Gottschalg, O. F., Hahn, M., & Kehoe, C. (2013). Corporate Governance and Value Creation: Evidence from Private Equity. The Review of Financial Studies, 26(2), 368–402. https://doi.org/10.1093/rfs/hhs117

Alakent, E., Goktan, M. S., & Khoury, T. A. (2020). Is venture capital socially responsible? Exploring the imprinting effect of VC funding on CSR practices. Journal of Business Venturing, 35(3), 106005. https://doi.org/10.1016/j.jbusvent.2020.106005

Andersen, N., 2021. Mapping the expatriate literature: a bibliometric review of the field from 1998 to 2017 and identification of current research fronts. The International Journal of Human Resource Management 32, 4687–4724.. https://doi.org/10.1080/09585192.2019.1661267

Badertscher, B. A., Katz, S. P., & Rego, S. O. (2013). The separation of ownership and control and corporate tax avoidance. Journal of Accounting and Economics, 56(2–3), 228-250. https://doi.org/10.1016/j.jacceco.2013.08.005

Baker, H. K., Pandey, N., Kumar, S., & Haldar, A. (2020). A bibliometric analysis of board diversity: Current status, development, and future research directions. Journal of Business Research, 108, 232–246. https://doi.org/10.1016/j.jbusres.2019.11.025

Ben Amor, S., & Kooli, M. (2020). Do M&A exits have the same effect on venture capital reputation than IPO exits? Journal of Banking & Finance, 111, 105704. https://doi.org/10.1016/j.jbankfin.2019.105704

Bena, J., Ferreira, M. A., & Pires, P. (2017). Are foreign investors locusts? The long-term effects of foreign institutional ownership. Journal of Financial Economics, 126(1), 122-146

Boucly, Q., Sraer, D., & Thesmar, D. (2011). Growth LBOs. Journal of Financial Economics, 102(2), 432-453. https://doi.org/10.1016/j.jfineco.2011.05.014

Broadus, R.N. (1987). Toward a definition of “bibliometrics”. Scientometrics 12, 373379. https://doi.org/10.1007/BF02016680

Bruton, G., Filatotchev, I., Chahine, S. & Wright, M. (2010). Governance, ownership structure and performance of IPO firms: the impact of different types of private equity investors and institutional environments. Strategic Management Journal, 31(5), pp.491-509. https://doi.org/10.1002/smj.822

Burton, B., Kumar, S., & Pandey, N. (2020). Twenty-five years of the European Journal of Finance(EJF): A retrospective analysis. European Journal of Finance, 26(18), 1817–1841. https://doi.org/10.1080/1351847X.2020.1754873

Bustamante, C. V., Mingo, S., & Matusik, S. F. (2021). Institutions and venture capital market creation: The case of an emerging market. Journal of Business Research, 127, 1-12. https://doi.org/10.1016/j.jbusres.2021.01.008

Chang, Y. W., Huang, M. H., & Lin, C. W. (2015). Evolution of research subjects in library and information science based on keyword, bibliographical coupling, and co-citation analyses. Scientometrics, 105(3), 2071–2087. https://doi.org/10.1007/s11192-015-1762-8

Callon, M., Courtial, J.-P., Turner, W. A., & Bauin, S. (1983). From transac-tion to problematic networks: An introduction to co-word analysis. Social Science Information, 22(2), 191–235. https://doi.org/10.1177/053901883022002003

Cao, J.X., Cumming, D., Qian, M., & Wang, X. (2015). Cross-border LBOs. Journal of Banking & Finance 50, 69–80. https://doi.org/10.1016/j.jbankfin.2014.08.027

Caporale, G. M., Gil-Alana, L. A., & Puertolas, F. (2024). Modelling profitability of private equity: A fractional integration approach. Research in International Business and Finance, 67(Part A), 102087. https://doi.org/10.1016/j.ribaf.2023.102087

Castriotta, M., Loi, M., Marku, E., & Naitana, L. (2019). What's in a name? Exploring the conceptual structure of emerging organizations. Scientometrics, 118(2), 407–437. https://doi.org/10.1007/s11192-018-2977-2

Chabowski, B. R., Samiee, S., & Hult, G. T. M. (2013). A bibliometric analysis of the global branding literature and a research agenda. Journal of International Business Studies, 44(6), 622–634. https://doi.org/10.1057/jibs.2013.20

Coakley, J., Hadass, L., & Wood, A. (2007). Post-IPO Operating Performance, Venture Capital and the Bubble Years. Journal of Business Finance & Accounting, 34(9–10), 1423–1446. https://doi.org/10.1111/j.1468-5957.2007.02055.x

Comerio, N., & Strozzi, F. (2019). Tourism and its economic impact: A literature review using bibliometric tools. Tourism Economics, 25(1), 109–131. https://doi.org/10.1177/1354816618793762

Donthu, N., Kumar, S., Mukherjee, D., Pandey, N., & Lim, W. M. (2021). How to conduct a bibliometric analysis: An overview and guidelines. Journal of Business Research, 133, 285-296. https://doi.org/10.1016/j.jbusres.2021.04.070

Edmans, A. (2023). Applying economics—not gut feel—to ESG. Financial Analysts Journal, 79(4), 16-29. https://doi.org/10.1080/0015198X.2023.2242758

Ellegaard, O., Wallin, J.A., 2015. The bibliometric analysis of scholarly production: How great is the impact?. Scientometrics 105, 1809–1831. https://doi.org/10.1007/s11192-015-1645-z

Eom, S. B. (2009).Author cocitation analysis: Quantitative methods for mapping the intellectual structure of an academic discipline. IGI Global.

Galbraith, C. S., DeNoble, A. F., & Ehrlich, S. B. (2012). Predicting the commercialization progress of early-stage technologies: An ex-ante analysis. IEEE Transactions on Engineering Management, 59(2), 213-225. https://doi.org/10.1109/TEM.2010.2068050

Gompers, P.A., A. Kovner, J. Lerner, and D. Scharfstein (2008). Venture capital investment cycles: the impact of public markets. Journal of Financial Economics, 87, 1–23. https://doi.org/10.1016/j.jfineco.2006.12.002

Gompers, P., Kovner, A., Lerner, J. (2009). Specialization and success: Evidence from venture capital. Journal of Economics & Management Strategy, 18, 817–844.. https://doi.org/10.1111/j.1530-9134.2009.00230.x

Hoffman, D. L., & Holbrook, M. B. (1993). The intellectual structure of consumer research: A bibliometric study of author cocitations in the first 15 years of the Journal of Consumer Research. Journal of Consumer Research, 19(4), 505–517. https://doi.org/10.1086/209319

Hota, P. K., Subramanian, B., & Narayanamurthy, G. (2020). Mapping the intellectual structure of social entrepreneurship research: A citation/co-citation analysis.J ournal of Business Ethics, 166(1), 89–114. https://doi.org/10.1007/s10551-019-04129-4

Hutton, I., Knill, A. M., & Zutter, C. J. (2021). 25 years and counting of cor-porate finance: What have we learned and where are we going? Journal of Corporate Finance, 66, 101896. https://doi.org/10.1016/j.jcorpfin.2021.101896

Harris, R.S., Jenkinson, T., Kaplan, S.N., 2014. Private equity performance: What do we know?. The Journal of Finance 69, 1851–1882. https://doi.org/10.1111/jofi.12154

Kaplan, S. (1989). The effects of management buyouts on operating performance and value. Journal of Financial Economics, 24(2), 217–254. https://doi.org/10.1016/0304-405X(89)90047-0

Kessler, M. M. (1963). Bibliographic coupling between scientific papers. American Documentation, 14(1), 10–25. https://doi.org/10.1002/asi.5090140103

Kim, C., Kim, S.-H., Lee, J., & Lee, J. (2022). Strategic alliances in a veto game: An experimental study. European Journal of Political Economy, 75, 102219. https://doi.org/10.1016/j.ejpoleco.2022.102219

Kumar, S., Pandey, N., & Haldar, A. (2020). Twenty years of Public Management Review (PMR): A bibliometric overview. Public Management Review, 22(12), 1876–1896. https://doi.org/10.1080/14719037.2020.1721122

Kumar, S., Panday, N., Burton, B., & Sureka, R. (2021). Research patterns and intellectual structure of Managerial Auditing Journal. Managerial Auditing Journal. https://doi.org/10.1108/MAJ-12-2019-2517

Kurzhals, C., Graf-Vlachy, L., & König, A. (2020). Strategic leadership and technological innovation: A comprehensive review and research agenda. Corporate Governance: An International Review, 28(6), 437–464. https://doi.org/10.1111/corg.12351

Lerner, J., Sorensen, M., & Stromberg, P. (2013). Private Equity and Investment in Innovation: Evidence from Patents. Journal of Applied Corporate Finance, 25(2), 95–102. https://doi.org/10.1111/jacf.12018

Levasseur, L., Johan, S., & Eckhardt, J. (2022). Mixed methods in venture capital research: An illustrative study and directions for future work. British Journal of Management, 33(1), 26-45. https://doi.org/10.1111/1467-8551.12514

Li, J. (2024). Venture capital investment: A full look at its history, importance, investment dynamics, effects on entrepreneurship, and outlook for the future. Advances in Economics, Management and Political Sciences 80, 313–319. https://doi.org/10.54254/2754-1169/80/20241900

Li, G., Liu, Y., Zhang, Q., 2023. Venture capital shareholding, tolerance for technological innovation failure, and technological innovation performance: evidence from China. Asia-Pacific Journal of Accounting & Economics 1–18. https://doi.org/10.1080/16081625.2023.2268140

Linnenluecke, M. K. (2017). Resilience in business and management research: A review of influential publications and a research agenda.I nternational Journal of Management Reviews,1 9(1), 4–30. https://doi.org/10.1111/ijmr.12076

Liu, Z., Yin, Y., Liu, W., & Dunford, M. (2015). Visualizing the intellectualstructure and evolution of innovation systems research: A bibliometric analysis. Scientometrics,103(1), 135–158. https://doi.org/10.1007/s11192-014-1517-y

Lu, L. Y., Lin, B. J., Liu, J. S., & Yu, C. Y. (2012). Ethics in nanotechnology: What's being done? What's missing?J ournal of Business Ethics,1 09(4), 583–598. https://doi.org/10.1007/s10551-012-1432-1

Mas-Tur, A., Kraus, S., Brandtner, M., Ewert, R., & Kürsten, W. (2020). Advances in management research: A bibliometric overview of the Review of Managerial Science. Review of Managerial Science, 14(5),933–958. https://doi.org/10.1007/s11846-020-00406-z

Matanova, N., Steigner, T., Sutton, N., & Thompson, L. (2022). The influence of private equity and venture capital on the post-IPO performance of newly-public acquirers. The North American Journal of Economics and Finance, 59, 101597. https://doi.org/10.1016/j.najef.2021.101597.

Metrick, A., & Yasuda, A. (2011). Venture capital and other private equity: A survey. European Financial Management, 17(4), 619–654. https://doi.org/10.1111/j.1468-036X.2011.00606.x

Mukherjee, D., Kumar, S., Donthu, N., & Pandey, N. (2021). Research public shed in Management International Review from 2006 to 2020: A bibliometric analysis and future directions. Management International Review, 61(5), 599–642. https://doi.org/10.1007/s11575-021-00454-x

Nikoskelainen, E., & Wright, M. (2007). The impact of corporate governance mechanisms on value increase in leveraged buyouts. Journal of Corporate Finance, 13(4), 511–537. https://doi.org/10.1016/j.jcorpfin.2007.04.002

Pandey, N., Andres, C., Kumar, S. (2023). Mapping the corporate governance scholarship: Current state and future directions. Corporate Governance: An International Review 31, 127–160. https://doi.org/10.1111/corg.12444

Pesta, B., Fuerst, J., & Kirkegaard, E. (2018). Bibliometric keyword analysis across seventeen years (2000–2016) of *intelligence* articles.J ournal of Intelligence, 6(4), 46. https://doi.org/10.3390/jintelligence6040046

Phalippou, L., & Gottschalg, O. (2008). The performance of private equity funds. The Review of Financial Studies, 22(4), 1747-1776. https://doi.org/10.1093/rfs/hhn014

Poje, T., & Groff, M. Z. (2021). Mapping ethics education in accounting research: A bibliometric analysis. Journal of Business Ethics, 1–22. https://doi.org/10.1007/s10551-021-04846-9

Ramos-Rodríguez, A.-R., & Ruíz-Navarro, J. (2004). Changes in the intellectual structure of strategic management research: A bibliometric study of the Strategic Management Journal, 1980–2000. Strategic Management Journal, 25(10), 981-1004. https://doi.org/10.1002/smj.397

Rossetto, D. E., Bernardes, R. C., Borini, F. M., & Gattaz, C. C. (2018). Structure and evolution of innovation research in the last 60 years: Review and future trends in the field of business through the citations and co-citations analysis. Scientometrics,115(3), 1329–1363. https://doi.org/10.1007/s11192-018-2709-7

Samiee, S., Chabowski, B. R., & Hult, G. T. M. (2015). International relationship marketing: Intellectual foundations and avenues for further rresearch. Journal of International Marketing, 23(4), 1–21. https://doi.org/10.1509/jim.15.0027

Soto-Simeone, A., Sirén, C., & Antretter, T. (2020). New venture survival: A review and extension. International Journal of Management Reviews, 22(4), 378–407. https://doi.org/10.1111/ijmr.12229

Tian, X. (2012). The Role of Venture Capital Syndication in Value Creation for Entrepreneurial Firms. Review of Finance, 16(1), 245–283. https://doi.org/10.1093/rof/rfr019

Uddin, M., & Chowdhury, A. (2021). Private equity exit strategies and profitability during the global pandemic: Evidence from around the world. British Journal of Management. https://doi.org/10.1111/1467-8551.12543

Uzuegbunam, I., Ofem, B., & Nambisan, S. (2019). Do corporate investors affect entrepreneurs' IP portfolio? Entrepreneurial finance and intellectual property in new firms. Entrepreneurship Theory and Practice, 43(4), 673-696. https://doi.org/10.1177/1042258717738247

Van Eck, N. J., & Waltman, L. (2010). Software survey: VOSviewer, a computer program for bibliometric mapping. Scientometrics, 84(2), 523–538. https://doi.org/10.1007/s11192-009-0146-3

Wang, L., Zhou, F., An, Y., & Yang, J. (2019). Corporate venture capital: technological innovation or value creation? A comparative study of CVC- and IVC-invested Chinese listed companies. Asian Journal of Technology Innovation, 27(3), 257–279. https://doi.org/10.1080/19761597.2019.1669470

Wang, H., Wuebker, R.J., Han, S., Ensley, M.D. (2012). Strategic alliances by venture capital backed firms: an empirical examination. Small Business Economics 38, 179–196. https://doi.org/10.1007/s11187-009-9247-x

Weinberg, B. H. (1974). Bibliographic coupling: A review. Information Storage and Retrieval, 10(5–6), 189–196. https://doi.org/10.1016/0020-0271(74)90058-8

Xiao, T., Yang, Z., & Jiang, Y. (2023). The different effects of venture capital and the trade-off between product innovation effectiveness and efficiency. European Journal of Innovation Management. https://doi.org/10.1108/EJIM-01-2023-1460-1060

Zhang, Y., Wang, D., Yang, M. M., Li, J., & Liu, S. (2023). A bibliometric review of early-stage entrepreneurial equity financing: An overview and future research agenda. Venture Capital. Advance online publication. https://doi.org/10.1080/13691066.2023.1234567

Zou, X., Long, W., & Le, H. (2018). Visualization and analysis of mapping knowledge domain of road safety studies. Accident Analysis and Prevention, 118, 131-145. https://doi.org/10.1016/j.aap.2018.06.010

Figure 1. Research design.

This figure describes and illustrates the methodological approach adopted in this paper

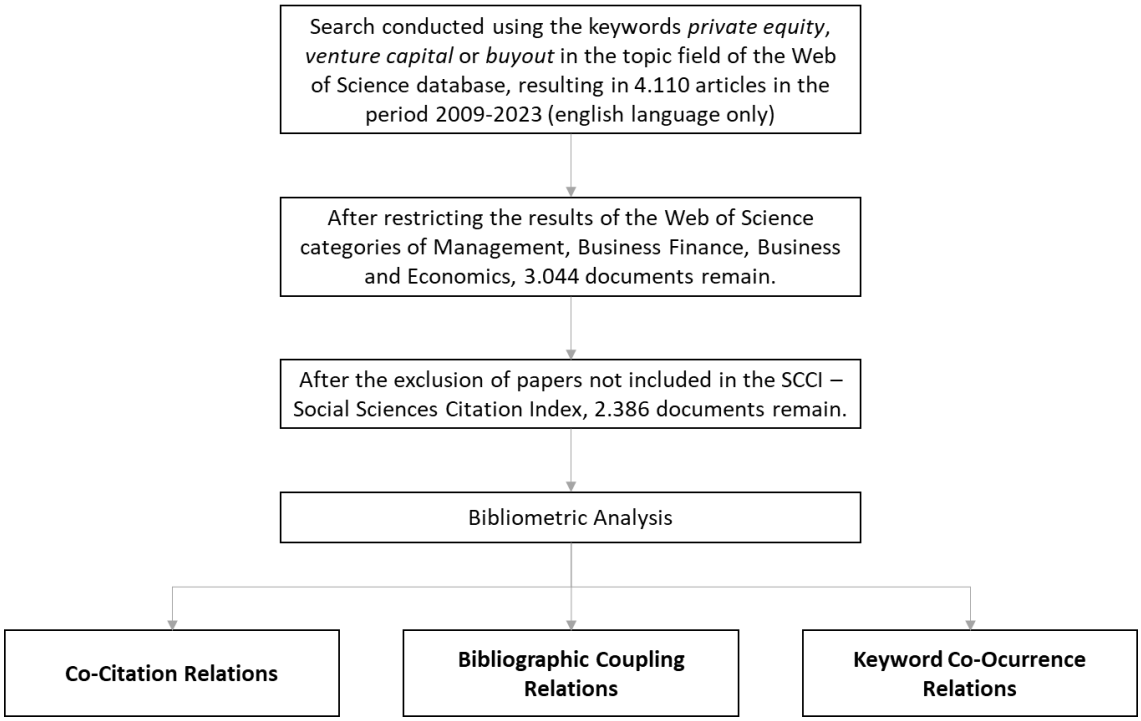
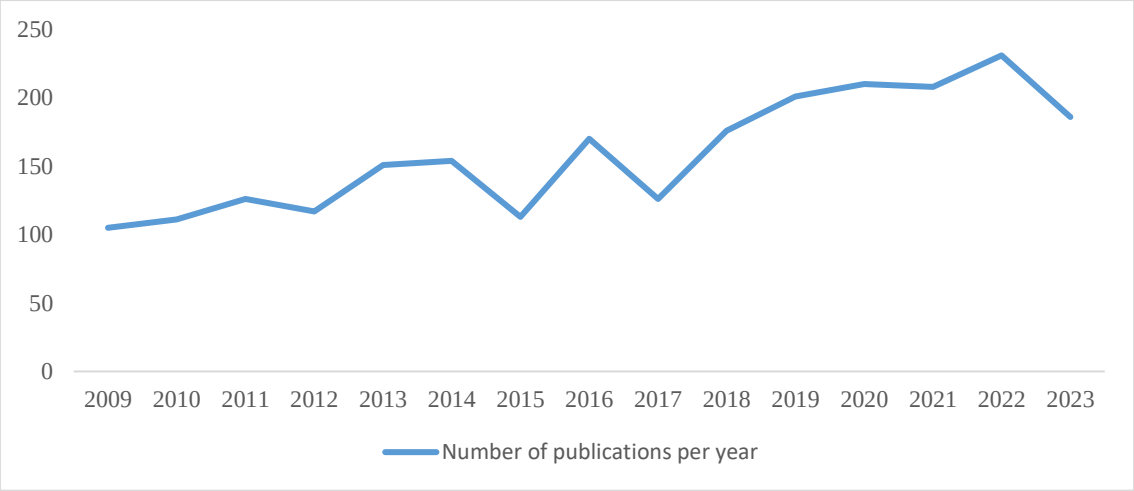


Figure 2 – Number of publications in the field of venture capital and private equity

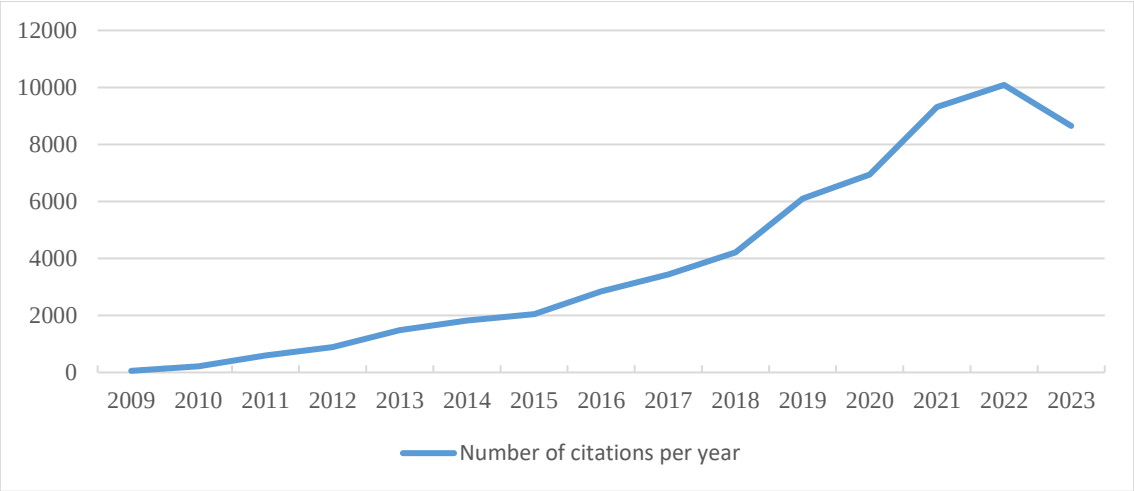
This figure illustrates the number of publications over time related to VC&PE. Notably, the number of publications experienced a decline from an all-time high of 231 to 186 publications in 2023. This decrease appears to correspond with a broader reduction in VC&PE activity globally, which has been influenced by economic slowdown, rising interest rates, and market uncertainty. These macroeconomic factors likely contributed to reduced investment activity and, consequently, a lower volume of academic and professional research publications in this field. In the case of venture capital the sharp decrease in IPOs also explains the decrease in VC&PE activity.



Source: Web of Science database

Figure 3 – Number of citations in the field of venture capital and private equity

This figure illustrates the number of citations over time related to VC&PE. Notably, the number of citations experienced a decline from an all-time high of 10,087 to 8,648 publications in 2023, turning VC&PE a less topical issue. This decrease appears to correspond with a similar reduction in publications and, most importantly to the reduced investment activity.



Source: Web of Science database

Figure 4 - Bibliographic coupling network of researchers

This figure presents the authorship network in the field of VC&PE.

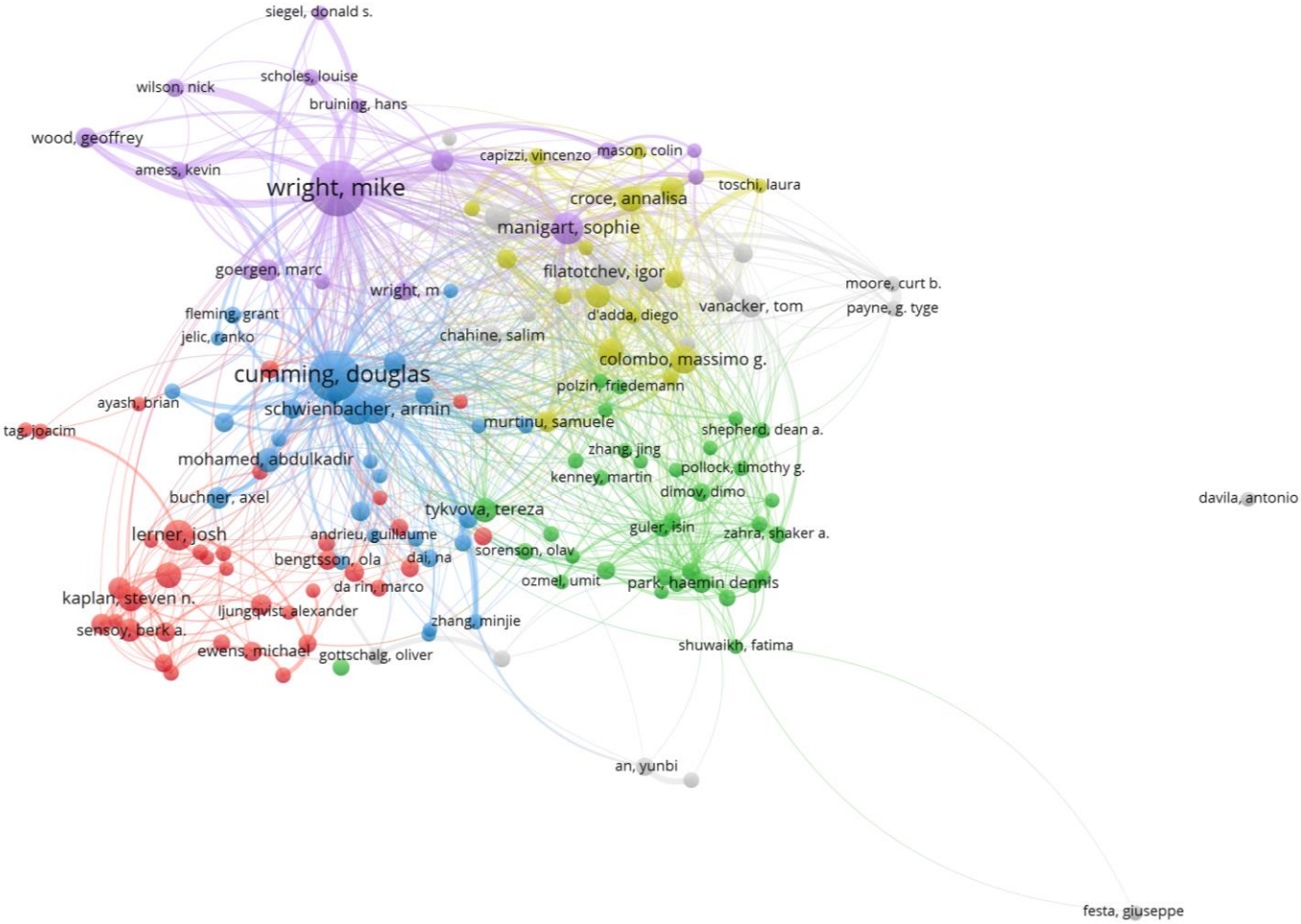


Figure 5 - Co-citation network of journals

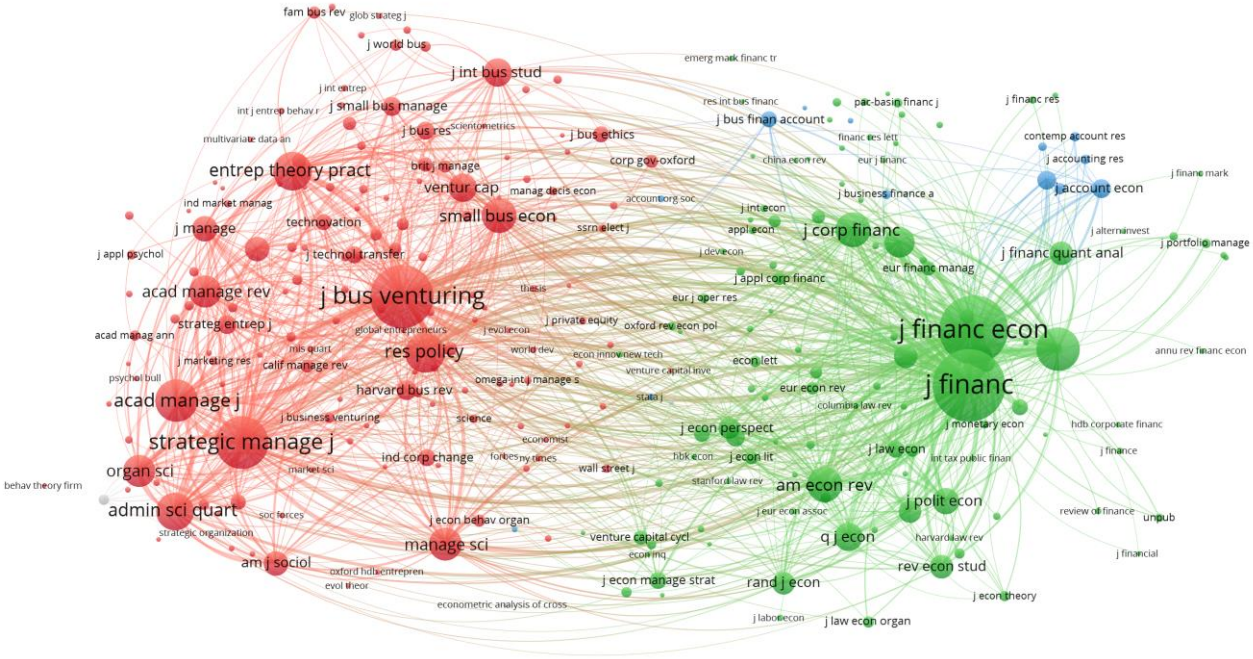


Figure 6 – Co-occurrence network of terms

This figure presents the visualization of network connections between keywords present in sampled papers. Colours identify the main research streams: (1) Investment Strategies and Allocation (Yellow); (2) Ownership structure and Profitability (Green); (3) Strategic Alliances and Innovation (Blue); (4) Entrepreneurship, Technology and Venture capital funding (Red).

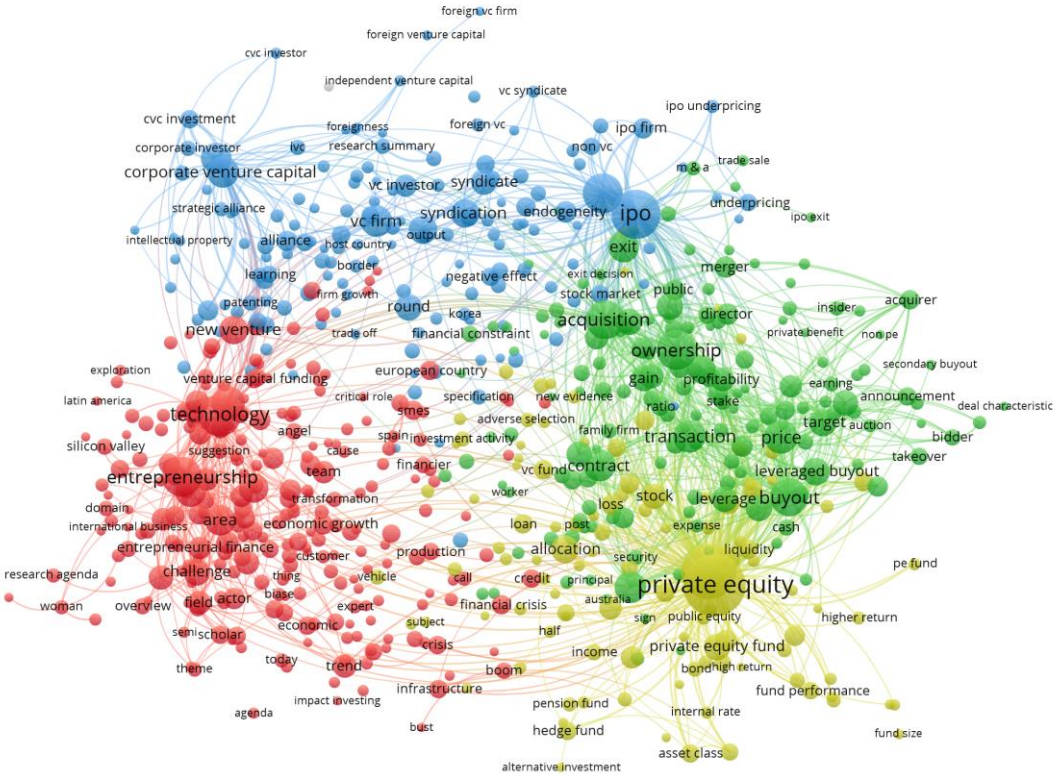


Table 1- Most Prolific Journals in Private Equity / Venture Capital (2009- 2023)

This table presents the top-15 journals ranked by the total number of citations, including the journal's name, and providing the number of citations received per year since the articles publication. TP denotes the total number of publications; TC represents the total number of citations; C/P amounts to the number of citations per publication; and Academic Journal Guide (AJG) Rating 2021 stands for the rating by the Chartered Association of Business Schools. We include Scimago Ranking both for Management and Finance disciplines, which measures the frequency with which content published in a journal was cited in other journals during the three previous years. Fourteen out of fifteen journals are ranked on the first quartile of Scimago (Q1).

Journal	TP	TC	C/P	AJG Rating	Scimago Ranking Managemeı	Scimago Ranking Finance
Journal of Corporate Finance	103	2,390	23	4	68	61
Small Business Economics	103	3,888	38	3	108	76
Journal of Financial Economics	77	4,644	60	4*	4	7
Journal of Business Venturing	66	4,694	71	4	31	n/a
Venture Capital	64	591	9	2	512	328
Journal of Banking and Finance	54	1,022	19	3	n.a.	127
Review of Financial Studies	51	4,590	90	4*	2	6
Research Policy	47	2,371	50	4*	65	n/a
Entrepreneurship Theory and Practice	45	1,464	33	4	18	29
Strategic Entrepreneurship Journal	41	1,295	32	4	47	48
Journal of Business Research	39	924	24	3	70	n/a
Journal of Finance	37	3,729	101	4*	1	3
Strategic Management Journal	36	1,938	54	4*	9	n/a
Journal of Financial and Quantitative Analysis	35	908	26	4	40	43
Management Science	34	845	25	4*	24	n/a

Table 2 - Distribution of Publications Across AJG Quality Ratings

In this table, TP denotes the total number of publications; TC represents the total number of citations; C/P amounts to the number of citations per publication. AJG rating 3 (ABS 3) and 4 (ABS 4) journals represent almost 70% of the total number of publications (TP) and roughly 80% of total citations (TC).

AJG Rating	TP	TC	C/P
4*	400	25,437	63.59
4	441	15,545	35.25
3	803	17,731	22.08
2	469	5,457	11.64
1	143	1,540	10.77
Not Rated	130	866	6.66

Table 3 - Top Authors by Number of Publications (prolificness)

In this table, TP denotes the total number of publications and TCP represents the total number of cited publications. The top 5 most prolific authors represent more than half of the production of the top15.

Author	Current Affiliation	TP	TCP
Wright, Mike	Imperial College London	54	54
Cumming, Douglas	State University System of Florida; University of Birmingham	43	43
Manigart, Sophie	Vlerick Business School; Ghent University	23	23
Lerner, Josh	Harvard University; National Bureau of Economic Research	19	19
Colombo, Massimo G.	Polytechnic University of Milan	17	17
Schwienbacher, Armin	SKEMA Business School	17	17
Grilli, Luca	Polytechnic University of Milan	15	15
Croce, Annalisa	Polytechnic University of Milan	15	15
Vismara, Silvio	University of Bergamo	15	15
Johan, Sofia	Florida Atlantic University	15	15
Bertoni, Fabio	SKEMA Business School	14	14
Mohamed, Abdulkadir	University of Leeds	14	14
Kaplan, Steven N.	University of Chicago	14	14
Phalippou, Ludovic	University of Oxford	14	14
Vanacker, Tom	Ghent University	13	13

Table 4 - Top Authors by Number of Citations (influence)

In this table, TC represents the total number of citations; and C/P amounts to the number of citations per publication. The top 5 most influential authors represent more than 50% of the total number of citations (TC) and the total number of citations per publication.

Author	Current Affiliation	TC	C/P
Cumming, Douglas	State University System of Florida; University of Birmingham	2,296	53.40
Wright, Mike	Imperial College London	2,057	38.09
Kaplan, Steven N.	University of Chicago	1,927	137.64
Lerner, Josh	Harvard University; National Bureau of Economic Research	1,872	98.53
Grilli, Luca	Polytechnic University of Milan	1,239	82.60
Colombo, Massimo G.	Polytechnic University of Milan	1,220	71.76
Tian, Xuan	Indiana University System	1,204	150.50
Vismara, Silvio	University of Bergamo	1,115	74.33
Sorensen, Morten	Copenhagen Business School; Columbia Business School	1,002	143.14
Bertoni, Fabio	SKEMA Business School	881	62.93
Chemmanur, Thomas J.	Boston College	850	106.25
Gompers, Paul	Harvard Business School; National Bureau of Economic Research	823	205.75
Kovner, Anna	Federal Reserve System - USA	822	164.40
Stroemberg, Per	Swedish Institute for Financial Research	811	270.33
Phalippou, Ludovic	University of Oxford	790	56.43

Table 5 - Top Institutions by Number of Publications (prolificness)

In this table, TP denotes the total number of publications and TCP represents the total number of cited publications.

Institution	TP	TCP
National Bureau of Economic Research	105	105
University of London	65	65
University of California System	62	62
Harvard University	59	57
Ghent University	57	57
State University System of Florida	53	53
York University - Canada	52	52
Imperial College London	50	50
Polytechnic University of Milan	50	50
University of Texas System	49	49
University of North Carolina	47	47
Erasmus University Rotterdam	45	45
Erasmus University Rotterdam – excl. Erasmus MC	45	45
University System of Georgia	42	42
Vlerick Business School	40	40

Table 6 - Top Institutions by Number of Citations (influence)

In this table, TP denotes the total number of publications and C/P amounts to the number of citations per publication.

Institution	TC	C/P
National Bureau of Economic Research	8,089	77.04
Harvard University	4,636	78.58
York University - Canada	3,010	57.88
Polytechnic University of Milan	2,606	52.12
Indiana University System	2,565	82.74
Indiana University Bloomington	2,563	85.43
University of London	2,556	39.32
University of California System	2,423	39.08
Stanford University	2,281	81.46
University of Chicago	2,186	87.44
New York University	2,129	70.97
State University of New York (SUNY) System	2,053	89.26
Columbia University	1,996	86.78
Erasmus University Rotterdam	1,821	40.47
Erasmus University Rotterdam – Excl. Erasmus MC	1,821	40,47

Table 7 - Top Countries by Number of Publications (prolificness)

In this table, TP denotes the total number of publications and TCP represents the total number of cited publications. The U.S. and U.K. publish more than 50% of all the sampled countries and the same percentage applies to the total number of cited publications.

Country	TP	TCP
U.S.	952	946
U.K.	452	451
China	285	285
Germany	195	195
Italy	179	179
Canada	174	174
France	173	173
Netherlands	125	125
Belgium	104	104
Australia	96	96

Table 8 - Top Countries by Number of Citations (influence)

In this table, TP denotes the total number of publications and C/P amounts to the number of citations per publication. The U.S. and U.K. stand out with more than half of the total number of publications and citations per publication.

Country	TC	C/P
U.S.	37,705	39.61
U.K.	12,631	27.94
Canada	6,592	37.89
Italy	5,816	32.49
Germany	5,289	27.12
France	5,099	29.47
Netherlands	4,121	32.97
China	3,292	11.55
Belgium	3,003	28.88
Spain	2,056	26.70