



A review of the literature on venture capital investments

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Abstract

This study aims to review the literature on venture capital investments. The study utilizes both content and bibliometric analyses to comprehensively examine research on venture capital investments. The content analysis uses selected literature review studies, while the bibliometric analysis uses data from 319 publications from 1982 to 2022 extracted from the Scopus database. The content analysis of literature reviews reveals significant scholarly interest, especially regarding performance determinants, decision criteria, and value creation impacts. Case study approaches leveraging analytical models prevail, though many areas remain unexplored due to evolving dynamics. The bibliometric analysis uncovers rising attention since 2007, with peaks in 2005, 2006, and 2021. Dominant topics include venture capital, investments, firms, entrepreneurship, performance, and later, collaborations and startups. Citation patterns highlight networks, spatial distributions, performance, development roles, and startup financing as crucial subjects.

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Keywords: venture capital investments, bibliometric analysis, content analysis, literature review.

1. INTRODUCTION

Emerging enterprises play a pivotal role in fostering innovation and catalyzing economic growth. However, these entities grapple with substantial financial challenges that impede their ability to thrive and sustain. Understanding the role of emerging enterprises and comprehending their financing challenges is of paramount importance to support economic development and enhance innovation in our societies. Securing funding for these ventures is hindered by various inhibiting factors, such as the lack of credit history and collateral (Colombo & Grilli, 2010); the high-risk nature of investments, as emerging enterprises are often considered high-risk investments due to their unestablished business models, lack of track record, and uncertain future prospects, making it challenging for them to attract investments (Arora et al., 2016); evaluation challenges due to the absence of financial history and comparable data (Wasserman, 2012); intense competition for funding, especially in the technology sectors (Shane, 2009); and time constraints, as emerging enterprises often require swift financing to develop and introduce their products or services to the market ahead of their competitors, making timely funding acquisition a challenging endeavor (Shane, 2000).

The world has witnessed significant developments concerning innovative solutions to this problem, with numerous innovations aligning with financing needs. Among these is venture capital, considered a specialized form of financing available to a minority of attractive industries (Callhan & Muegge, 2003, p. 642). It differs from traditional financing methods as it targets projects with high risk, distinguishing itself by focusing on new and innovative ideas (Benzouai & Djefal, 2021, p. 48).

Venture capital investment emerged in the United States, becoming a means to finance new companies, particularly those developing new technologies and opening

new markets. Venture capital investments differ significantly from securities market investments, as they involve relatively new companies with insufficient historical data. The investment in small, directly capital-contributing companies allows the investor to actively participate in the company's life, a dynamic not present in larger companies already in the financial market. Additionally, venture capital investments do not ensure short-term liquidity for the investor, as the capital remains "locked in" the company for five to ten years (Siskos & Zopounidis, 1987, p. 304).

A corpus of studies has delved into the subject of venture capital investments, treating it through a literary lens. Among these studies is the work of Siskos and Zopounidis (1987), which delves into the modeling of venture capital decision-making using the MINORA system based on the recurrent use of the ordinal regression model (UTA). Additionally, Amit et al. (1998) examines the role of venture capitalists in companies, while Zchefczyk (2001) focuses on determining the determinants of the performance of venture capital investments.

Callahan and Muegge (2003) undertake a review of the role of venture capital in innovation, and Napp et al. (2009) present preliminary results of ongoing research on venture capital investments for external companies, specifically stock investments in large projects outside the company. Fuller's study (2009) is dedicated to identifying distinctive patterns of investment behavior by venture capital firms investing in technology startups in China.

Chemmanur et al. (2010) review the role of venture capital financing in adding value to entrepreneurial companies, while Da Rin et al. (2011) examine the increasing academic work on venture capital, studying the sources of primary data used in investments, and investigating issues related to selection, contracting, post-investment services, and exits. Wu and Tangm (2018) identify the characteristics of investment capital in China and compare them with the West.

Safari's systematic literature review (2018) meticulously maps the effects of venture capital investments and intellectual property rights on innovation globally, considering other social and economic criteria. Recently, Jeon and Maula (2022) conducted a review spanning the past four decades of research on tensions in venture capital for companies.

Other studies indirectly address the topic of venture capital investments through bibliometric analysis, as evidenced by the works of Reyes Ayala et al. (2022), Cumming et al. (2022), Capizzi et al. (2022), Kumar et al. (2021), Benzouai and Djefal (2021), Cancino et al. (2018), Rohm (2018), and Cornelius and Persson (2006). Notably, there is a dearth of previous studies directly addressing bibliometric analysis of venture capital investments. Our current study addresses this gap, analyzing the topic through two fundamental approaches: content analysis to ascertain classifications and key research topics, and bibliometric analysis aimed at quantitatively analyzing studies and classifying bibliographic components, in addition to delineating the intellectual structure of the scientific field. The integration of these analyses provides an overview of research trends in venture capital investments, assisting researchers in understanding publication dimensions and identifying future research directions. The research is divided into presenting data collection details and analysis methods, summarizing the results of both content and bibliometric analyses with discussion, and finally presenting the key findings of this study.

2. DATA AND METHODS

The study relies on two types of analysis: content analysis and bibliometric analysis. The data are sourced from the Scopus database. In content analysis, selected studies addressing literature reviews on venture capital investments, as outlined in Table 01, were utilized. The analysis focused on specific classifications defined by the literature.

Table 1. The literature utilized in content analysis

Literature	Time range
Siskos & Zopounidis (1987)	undefined
Amit et al. (1998)	1991 - 1996
Schefczyk (2001)	1995
Callahan & Muegge (2003)	1980 - 2002
Napp et al. (2009)	2008
Fuller (2010)	undefined
Chemmanur et al. (2010)	1970 - 2007
Da Rin et al. (2011)	2011
Wu & Tang (2012)	1980 - 2011
Safari (2018)	1988- 2014
Jeon & Maula (2022)	1981 - 2019

Source: Prepared by researchers.

As for bibliometric analysis, the following terms were employed: "Venture capital investment," "VC Investment," "venture capital investing," "Corporate venture capital investment," and "CVC Investment" as research topics in the article title. This yielded 319 publications spanning the period from 1982 to 2022 downloaded on October 25, 2022. The extracted data were processed using Vosviewer software. The bibliometric analysis of this study focused on utilizing bibliographic data through analyzing the co-occurrence of author keywords and citation analysis of publications. Additionally, textual data analysis was employed by examining the co-occurrence of terms in the titles and abstracts.

The publications extracted from the Scopus database and used in the bibliometric analysis are predominantly related to the fields of business, management, and accounting (56.11%), economics, econometrics, and finance (42.95%), and social sciences (10.97%). In terms of publication types, the majority of publications are, in descending order, articles (75.86%), conference papers (10.65%), and book chapters (7.84%).

3. RESULTS AND DISCUSSION

After processing the aforementioned data, we arrived at the following results:

3.1 Content analysis of literature:

Content analysis is a scientific research method aimed at objectively describing the apparent content, breaking it down, and deciphering its complexity (Al-Fatlawi & Abd, 2017, p. 58). To achieve this, we relied on a selection of studies that addressed venture capital investments as a literature review. Our examination of literature revealed a focus on specific topics, categorized as illustrated in Table 02. Each study addressed a particular subject and presented a set of literature that, in turn, delved into it in detail. This enabled us to analyze the content and provide a clear overview of the various classifications of venture capital investment topics.

Table 2. Content analysis of venture capital investment publications

Category	Content of the literature
Evaluation criteria for venture capital investment	Siskos and Zopounidis (1987) developed an interactive evaluation approach identifying key factors like management team quality, market potential, industry growth, and technological innovation as central criteria for venture capitalists. Additional nuanced criteria emerge based on investment stage. Schefczyk (2001) examined success determinants in German venture capital, finding management team quality, market size, and innovation level as well as venture capitalist preferences and experience critical. Industry conditions and investment staging also impacted success.

Napp et al. (2009) proposed a framework assessing the strategic value of investments along financial, strategic, technological, learning, networking and reputational dimensions. Investment characteristics, company attributes, and external factors influenced strategic value. A subsequent survey by Siskos and Zopounidis (1987) ranked management quality, market potential, and product quality as most important investment criteria amongst venture capitalists and entrepreneurs.

**The role of
venture
capitalists**

Amit et al. (1998) highlights the crucial role of venture capitalists in the entrepreneurial ecosystem.

- Venture capitalists contribute funding, expertise, and strategic guidance to new projects.
- They excel in managing environments with asymmetric information, reducing costs associated with informational mismatches.
- Through financial support and navigating uncertainties, venture capitalists significantly contribute to fostering entrepreneurship and enhancing the success potential of new ventures.

**Determinant
s of the
performance
of venture
capital
investments**

Studied within the realm of German Venture Capital Firms (VCFs), as delineated in the investigation by Schefczyk (2001), these determinants manifest as follows:

- That managers of portfolio companies possess qualifications and emphasize their significance.
- Intensification of collaboration between venture capital funds and portfolio companies.
- Ensuring a formidable contributor's stance in transactions of traded capital (VCF) for an elevated level of success beyond the average.

**Criteria/Indi
cators for
Making
Venture
Capital
Investment
Decisions**

According to Macmillan et al (1985), who conducted a recurrent benchmark study on decision-making criteria for American venture capital firms, the most esteemed criteria were:

- The company's ability to sustain continuous efforts;
- A thorough understanding of the market;
- Achieving a minimum of 10% return within 5-10 years;
- Demonstrated leadership in the past;
- Evaluates and interacts well with risks;
- Making investments liquid;
- Achieving significant market growth;
- A track record of adventurous endeavors;
- Effectively communicates the project and possesses unique technologies.

Measuring strategic value through venture capital investments for companies	<p>According to Napp, J. J et al (2009):</p> <ul style="list-style-type: none">- Strategic value differs from exploratory value in venture capital investments by defining three subgroups: accessing complementary technology, leveraging proprietary technologies, and expanding markets.- The strategic value of venture capital investments comprises two values: company-related value, specifically for innovative companies, encompassing management advice, operational support, and reputation; and another value related to the product, involving access to complementary technology, leveraging proprietary technology, and market access.- Despite the majority of metrics for exploratory value and product-related value, it can be considered an indicator that: a) these value dimensions are of primary importance for companies and/or; b) these dimensions are easier to measure than exploratory and company-related value, and it is desirable to obtain a more complete picture of the metrics.
Investment Selection Behavior by Venture Capital Companies	<p>This behavior has been studied in China according to Fuller, D. B. (2010). It was found that China places a significant focus on investments in technology-intensive startups. Three patterns of investment behavior by venture capital firms investing in technology companies were identified:</p> <ul style="list-style-type: none">- The first pattern is service-oriented, representing a subtle technological investment behavior exhibited by foreign venture capital firms not founded by ethnically Chinese individuals.- The second pattern is technology creation investment, demonstrated by foreign companies founded by ethnically Chinese individuals and included in Chinese ethnic communities.- The third pattern is from Chinese local venture capital firms funded by the state, which choose to invest either in state-managed projects or refrain from investing in technology startups altogether.
The role of venture capital financing in adding value to entrepreneurial companies.	<p>Chemmanur et al. (2010) focus on three areas of value creation by venture capital: 1. Early-stage value creation emphasizing non-financial benefits provided to entrepreneurial companies; 2. Examination of contracting mechanisms, including staging and convertible loans, between venture capitalists and entrepreneurs. 3. Exploration of how venture capitalists contribute to value creation at the time of exit.</p> <ul style="list-style-type: none">- Venture capital contributes to value creation through scrutinizing and monitoring startup companies to enhance their value.- Venture capital contracts are designed to optimally incentivize entrepreneurs and provide adequate returns to venture capitalists.

- Various factors influence a company's inclination to exit through IPOs and M&A processes, including macroeconomic and industry effects, public offering market conditions, industrial leverage, market concentration, and affiliation with high-tech or financial industries.

Venture Capital Investments in Entrepreneurial Companies.	Da Rin (2011) outlines four main areas of consideration for venture capital investments: investment options, contracts, post-investment activities, and exits. On investment options, identification of opportunities and serial entrepreneurs as sources are noted, along with selections between venture capital and other financing avenues based on factors like risk and partner experience. Regarding contracts, optimal cash flow structuring, control rights, and empirical evidence are examined. Post-investment, value-added services and control mechanisms balancing company and founder interests are highlighted. Finally, on exits, various mechanisms including failure, acquisition, and IPOs are explored, together with performance indicators and IPO processes as exit determinants.
Characteristics of Venture Capital and Their Variations Between China and the West	Wu and Tang (2012) highlights three defining features of Chinese venture capital firms. First, the ethnic Chinese origin of founders. Second, an investment focus on mainland China and ethnic Chinese economies abroad. Third, distinctions in innovation definitions and due diligence approaches compared to Western counterparts. On innovation, varying conceptualizations lead Chinese venture capitalists to differ in financing behaviors and staging. Chinese firms also frequently utilize third-party assessments of business plans, contrasting with the direct in-house evaluations by Western firms. Another divergence is Chinese venture capitalists concentrate investments pre-IPO rather than early-stage. For state-backed Chinese venture capital, strategic mandates like catalyzing innovation and technology advancement supersede profit maximization. In conclusion, Wu and Tang delineate how ethnic affiliation, geographic concentration, and structural adaptations shape the strategic priorities and funding models of Chinese venture capital firms.
The Effects of Venture Capital and Intellectual Property Rights on Innovation in Legal, Social, and Economic Systems	Safari (2018) explores the relationship between venture capital investment and corporate innovation. A core tension identified is balancing innovation costs and funding returns as knowledge creation diminishes marginal returns on venture capital. Additional findings show both intellectual property protections and venture capital positively impact innovation, with venture capital more effective when intellectual property systems are weaker. Safari also notes geographical location, industry, and investment staging moderate venture capital's contribution to corporate innovation activities. Further, industries with higher technology and knowledge levels see stronger innovation impacts from venture capital funding. Finally, the research highlights how venture capital investors can aid in strengthening company-level intellectual property protections. In conclusion, Safari analyzes the intersection of venture capital and knowledge creation, delineating factors like intellectual property regimes, corporate attributes, and investment

staging that determine innovation productivity stemming from venture capital involvement.

Tensions in corporate venture capital

Jeon and Maula (2022) highlights three main areas of tension for corporate venture capital initiatives. First, balancing a focus on exploration of new innovations versus exploitation of existing operations. Second, managing CVC identity between belonging to the parent company versus the venture capital community. Third, overcoming perceptions of CVCs as threats rather than opportunities among startups and venture capitalists. Additional aspects noted include conflicting internal stakeholder goals, the need to position CVCs between corporate and investor priorities, and effectively managing relationships with current portfolio companies, prospective investments, and independent venture capital firms. In conclusion, Jeon and Maula outline critical challenges for CVCs in reconciling strategic intents, stakeholder alignments, and ecosystem positioning. Resolving these contradictory pressures is essential for CVCs to deliver financial returns while enabling valuable knowledge transfers.

Source: Prepared by researchers based on literature

Through the Table 02, we observe that the literature research on the subject of venture capital investments has encompassed various aspects, allowing for a clear and comprehensive depiction of the topic. Additionally, we note the presence of literature addressing the subject in a general sense, exploring criteria for evaluation, performance determinants, decision-making factors, the role of venture capitalists, measuring the strategic value of venture capital investments, and the investment selection behavior of venture capital firms. Other literature has approached the topic by focusing on entrepreneurial companies, studying the role of venture capital funding in adding value to them, and examining investments in venture capital. Some have delved into it specifically, studying its characteristics and comparing them between the Western and Chinese contexts.

3.2 Literature classification

Through our analysis of the content of publications on venture capital investments, we have identified a range of classifications, including:

A. Performance Evaluation Determinants of Venture Capital Investments: By examining the content related to criteria for evaluation, performance, and tensions in venture capital investments, we observed a consensus among researchers that the most important criteria are management and the market. Management, in terms of skill, is considered crucial for performance, and venture capital firms are deemed most suitable for managing venture capital investments, such as the studies of Siskos and Zopounidis, (1987), Schefczyk, (2001), Jeon & Maula (2022).

B. Criteria for Decision-Making in Venture Capital Investments: Investing in companies with specific criteria is highlighted. These criteria include companies being market-savvy, capable of achieving significant growth, and able to interact with various risks they may face. They should also yield returns commensurate with the level of risk they bear, such as the study of Macmillan et al. (1985).

C. Value Creation: Entrepreneurial companies tend to finance through venture capital firms, creating value through their investments. This value is particularly associated with managerial advice, operational support, and reputation. Additionally, it involves creating value related to the product, such as accessing complementary technology, benefiting from proprietary technology, and market access, such as the study of Chemmanur, et al. (2010) .

D. Venture Capitalists: Distinguished by operating in a high-risk environment, venture capitalists engage in activities where information asymmetry is prevalent, making it the most suitable environment for their investments. Their effective role in reducing the cost of information asymmetry is emphasized since other funding sources do not invest in projects with unmatched information, meaning higher risk levels, such as the study of Amit et al. (1998).

E. Differences in Venture Capital between China and the West: Both the West and China focus on investing in companies with innovative projects. However, the difference lies in the investment stage, with the West investing in the early stage, while

China invests before the initial public offering (IPO), such as the study of Wu & Tang (2012).

F. Effects of Venture Capital and Intellectual Property Rights on Innovation in Legal, Social, and Economic Systems: Both venture capital and intellectual property rights have a positive impact on innovation. However, the effectiveness of venture capital is more pronounced than that of intellectual property rights. This is attributed to venture capital's role in establishing a robust system to protect innovation. Its contribution to company activities is based on three dimensions: industry, venture capital investment stage, and the geographic location of the company, such as the study of Safari (2018).

3.3 Bibliometric Analysis:

This analysis focuses on the examination of terminology, utilizing two types of data: bibliographic data to study common occurrences (author's keywords) and citations (citations of publications), and textual data (occurrence of terms in the title and abstract). Prior to this, the evolution of the scientific publishing process from 1982 to 2022 is addressed.

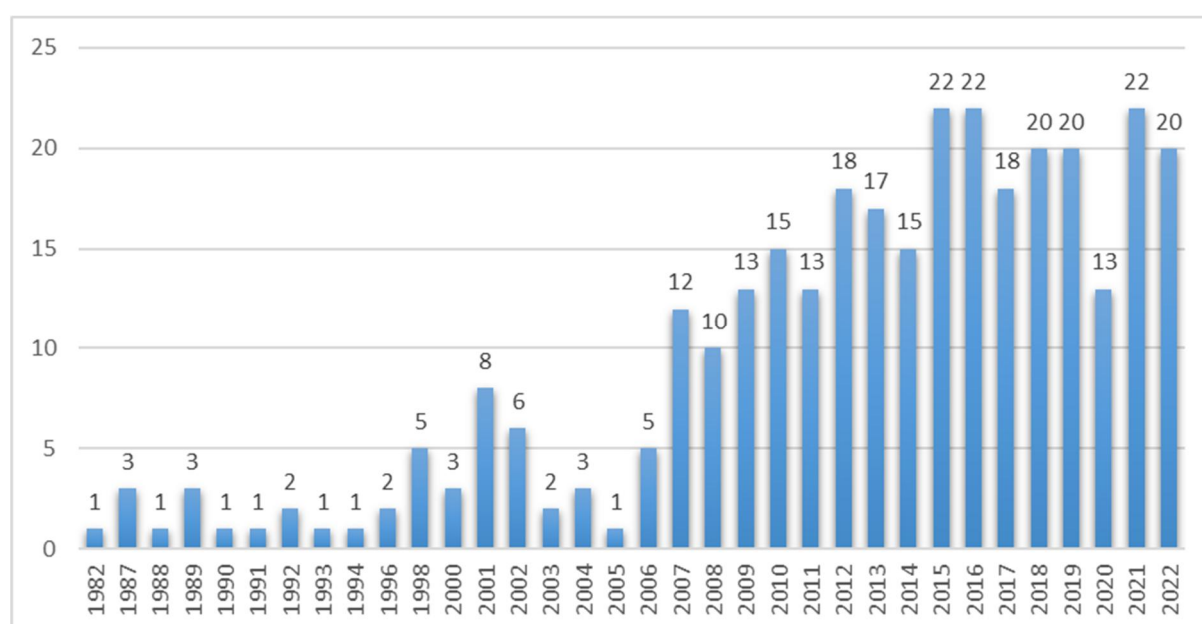
3.3.1 Evolution of Publishing:

Fig. 1 illustrates the evolution of publications during the study period on the topic of venture capital investments.

Through the presented curve in the above figure and as an initial observation, we notice an irregular distribution of publications. The number of publications exceeding 10 starts from the year 2007. Before that, from 1982 to 2006, the number of publications ranged from one to ten publications, constituting (15.36%) of the total publications (49 publications). During the period from 2007 to 2014, the number of publications did not exceed 20 (ranging from 11 to 18 publications). The total publications during this period represented (35.42%) of the total publications (113 publications). From 2015 to

2022, the total number of publications was 157, accounting for 49.21%. The number of publications during this period ranged from 19 to 22 publications. It is also noteworthy that the distribution is irregular during the mentioned periods. The increase in publications started in 2007, with the highest number of publications on the topic of venture capital investments in the years 2015, 2016, and 2021, each with 22 publications.

Fig. 1. Number of Publications on Venture Capital Investments from 1982 to 2022.



Source: Prepared by researchers based on Scopus data

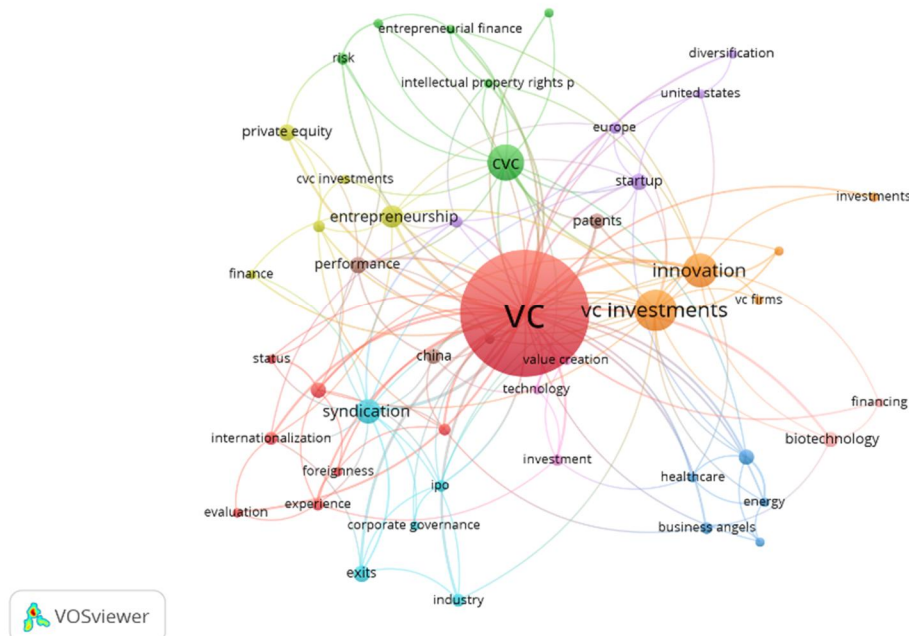
3.3.2 Bibliographic Data Analysis:

This section focuses on the analysis of the common occurrences of keywords. After setting the minimum appearance threshold at three (03) times, 48 terms out of 561 were represented. The fifteen most frequently occurring terms, indicate the strength of their association with other terms. The most frequently occurring terms are: venture capital, venture capital investments, venture capital companies, collaboration, abstracts, entrepreneurship, performance, startup companies. Regarding the overall strength of association, the strongest terms in order are: venture capital, collaboration, networks, venture capital investments, and venture capital companies.

Fig. 2 is a map of common occurrences, identifying relationships between these terms. Through this map, ten main groups become apparent. The red group centers around the term venture capital and includes reputation, diversification, emerging economies, experience, and evaluation. The second group in orange centers around the term collaboration and includes venture capital investments, venture capital companies, economic growth, and investments. The third green group centers around the term venture capital companies and includes project financing and individual property rights. The fourth yellow group centers around the term entrepreneurship and includes venture capital investments, private stocks, and finance. The fifth dark blue group centers around the term clean technology and includes energy, healthcare, and business angels. The light blue sixth group centers around the term networks and includes comparisons and corporate governance. The violet light seventh group includes the terms value creation, investments, and technology. The dark violet eighth group includes startup companies, Europe, the United States, and diversification. The pink ninth group includes biotechnology and finance. The last brown group includes the term China, performance, and patents.

Through the map, overlaps between groups (red, yellow, orange, dark blue, green) are noticeable, focusing on venture capital, venture capital investments, venture capital companies, and investments. There is an overlap between the two groups (pink and dark blue) focusing on biotechnology and healthcare. Additionally, an overlap between the two groups (dark violet and brown) is observed, focusing on the reputation of emerging venture capital companies in China, Europe, and the United States, as mentioned in the content analysis on this classification.

Fig 2. The shared occurrence of key terms in publications on venture capital investments.

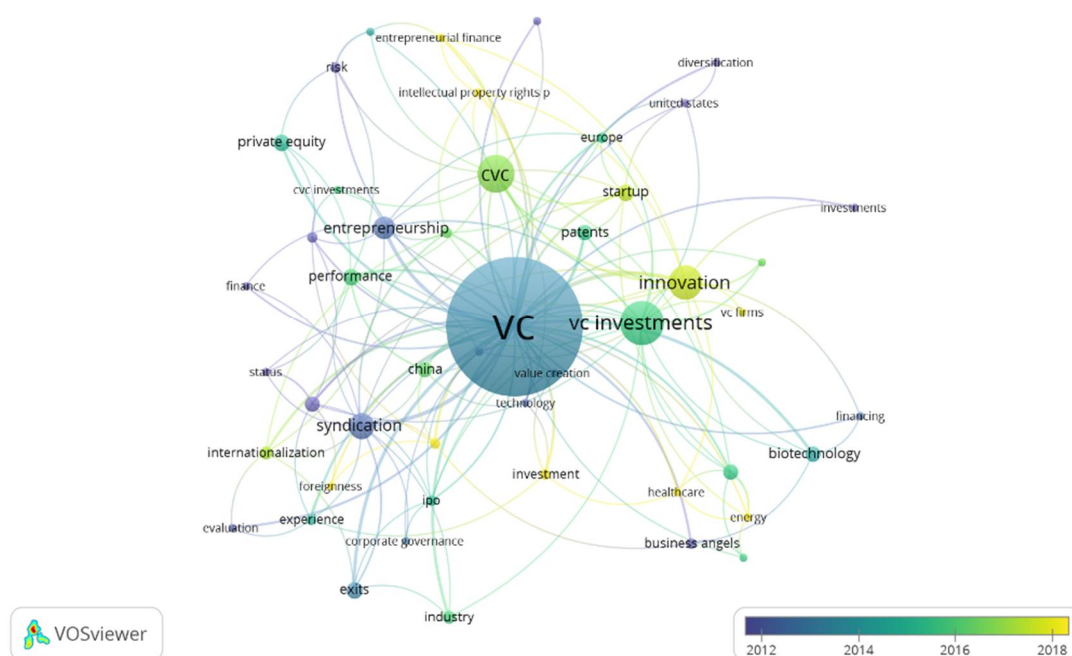


Source: Prepared by researchers based on Scopus data

Through Fig. 3, representing the chronological sequence of key terms, we observe the researchers' focus in their research on venture capital, investments in venture capital, venture capital companies, collaboration, and startups.

Table 03 represents the most cited publications in the field of venture capital investments based on Scopus citations. It illustrates the top ten highly cited studies. The number of citations falls within the range of [153 – 1000], and the average citations per publication vary between [0.47 – 3.13]. Notably, the studies maintain their ranking in terms of both the number of citations and the annual citation average.

Fig 3. The concurrent appearance of key terms in publications on venture capital investments based on the chronological sequence



Source: Prepared by researchers based on Scopus data

Examining Table 03, we find that the study by Sorenson and Stuart (2001) addressed venture capital investments from two perspectives: network comparisons and spatial distribution. Dushnitsky and Lenox's study (2006) focused on the time during which venture capital investment creates a fixed value for companies. Zacharakis and Meyer's research (2000) delved into decision models related to their capacity to enhance venture capital investment decisions. Sorenson and Stuart's study (2008) explored the contextual reconfiguration of venture capital investment networks by proposing a relationship formation theory. Cumming and Johan's work (2010) concentrated on investigating the duration of venture capital investment. Engel and Keilbach's study (2007) examined the effects of venture capital investments on companies in the early investment stage. Gompers et al.'s research (2002) delved into venture capital investment cycles by focusing on the impact of public markets. Mason and Harrison's study (2002) addressed the return rates for informal venture capital investments and their worthiness. Manigart et al.'s study (2002) investigated the determinants of required returns for venture capital investments across five countries. Lastly, Lockett and Wright's research (2001) explored the aggregation of venture capital investments by examining resource-based financial interpretations and deal flows for venture

capital investment aggregations. Table 03 provides detailed insights into the objectives and outcomes of these highly cited studies.

Through the lens of these extensively cited studies, one can observe researchers' focus on the various stages, returns, and value creation aspects of venture capital investments in companies.

Table 03: The Ten Most Cited Publications in the Field of Venture Capital Investments.

R	Author	Title	The aim	TC	AAC
1	Sorenson, & Stuart, (2001)	Syndication networks and the spatial distribution of venture capital investments	Exploring the impact of interlocking networks in the venture capital market in the United States on spatial exchange patterns through experimental analyses.	1000	3.13
2	Dushnitsky & Lenox, (2006)	When does corporate venture capital investment create firm value?	Proposing that venture capital investment by companies will create greater value when companies explicitly seek to invest in venture capital to harness new technology, utilizing a set of corporate venture capital investments. Providing evidence supporting their proposition.	283	0.88
3	Zacharakis & Meyer, (2000)	The potential of actuarial decision models: Can they improve the venture capital investment decision?	Studying the possibility of improving venture capital investment decisions, the study involved 53 venture capitalists in a policy-capturing experiment. Participants examined 50 projects, evaluating the potential success of each project. Similar information about each project was input into two different heuristic models.	255	0.79
4	Sorenson & Stuart, (2008)	Bringing the context back in: Settings and the search for syndicate	Proposing a relationship formation theory based on "settings" characteristics, or the places and times where representatives meet. Assuming	230	0.72

		partners in venture capital investment networks	that organizations form relationships with partners at a distance when engaging in two types of settings: unusually mundane situations and those with limited risks to participants. Conducting an experimental analysis of the study on the formation of relational networks among venture capital companies in the United States from 1985 to 2007.		
5	Cumming & Johan,(2010)	Venture capital investment duration	Investigating the duration of venture capital investment, formulating a theory for the duration based on the idea of venture capitalists exiting when the marginal cost of maintaining the investment exceeds the expected marginal benefit.	226	0.70
6	Engel & Keilbach (2007)	Firm-level implications of early stage venture capital investment - An empirical investigation	Analyzing the impact of venture capital financing on the growth and innovation of German young companies based on statistical matching procedures, confirming results indicating that venture-backed companies have a greater number of patent applications than those in the control group.	223	0.69
7	Gompers et al, (2008)	Venture capital investment cycles: The impact of public markets	Researching how changes in general market signals affect venture capital investment between 1975 and 1998.	211	0.66
8	Mason & Harrison, (2002).	Is it worth it? The rates of return from informal venture capital investments	Analyzing returns on informal venture capital investment using data from 128 exited investments in a survey study involving 127 entrepreneurs from the United Kingdom.	200	0.62
9	Manigart et al (2002)	Determinants of required return in venture capital	Developing hypotheses related to the determinants of required returns by venture capitalists	199	0.62

		investments: A five-country study	and testing them on a sample of over 200 companies from venture capital firms in five countries.		
10	Lockett & Wright, (2001)	The syndication of venture capital investments	Investigating competitive financial interpretations and resource-based explanations for the flow of deals to aggregate venture capital investments, analyzing evidence from 60 companies (response rate 58.8%).	153	0.47

Source: Prepared by researchers based on Scopus data

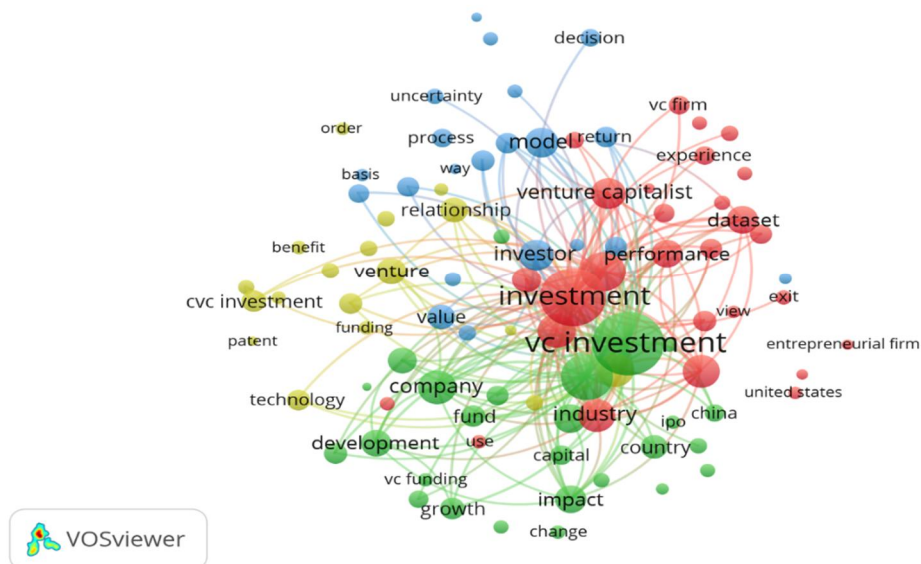
3.3.3 Terms Analysis in Textual Data

This component pertains to the scrutiny of terms referenced in both the titles and abstracts. Ninety-three terms, out of a total of 4679, have been represented after establishing a minimum appearance threshold of ten times and utilizing a thesaurus. This process was carried out by employing the VOSviewer program. The twenty most prevalent terms are found in the titles and/or abstracts of publications on venture capital investments. These terms encapsulate key aspects indicative of the subject matter, such as "Venture Capital Investments," "Investment," "Venture Capital," and "Company." The terms "Analyses," "Impact," "Performance," and "Relationship" are indicative of the research focus in these studies.

Fig. 04 represents a network map of terminologies, illustrating the presence of four color-coded clusters (red, green, yellow, blue). The red cluster revolves around the term "investment" and is surrounded by "venture capitalists," "dataset," "venture capital firms," and "performance." Therefore, it can be inferred that the red cluster is dedicated to studying the performance of venture capital firms. The green cluster centers on the term "venture capital investments" and is surrounded by "venture capital," "company," "role," and "development." Consequently, this cluster focuses on studying the role of venture capital investments in achieving development. The yellow cluster is centered around the term "venture capital investments" and is surrounded by the terms "entrepreneur," "financing," and "startups." Through these terms, it is evident that this cluster is concerned with studying the financing of venture capital investments for startups. Lastly, the blue cluster revolves around the term "model" and is surrounded by terms such as "process," "decisions," "investment decisions," and "venture capital

investment decisions." It can be stated that this cluster is dedicated to studying the modeling process of venture capital investment decisions.

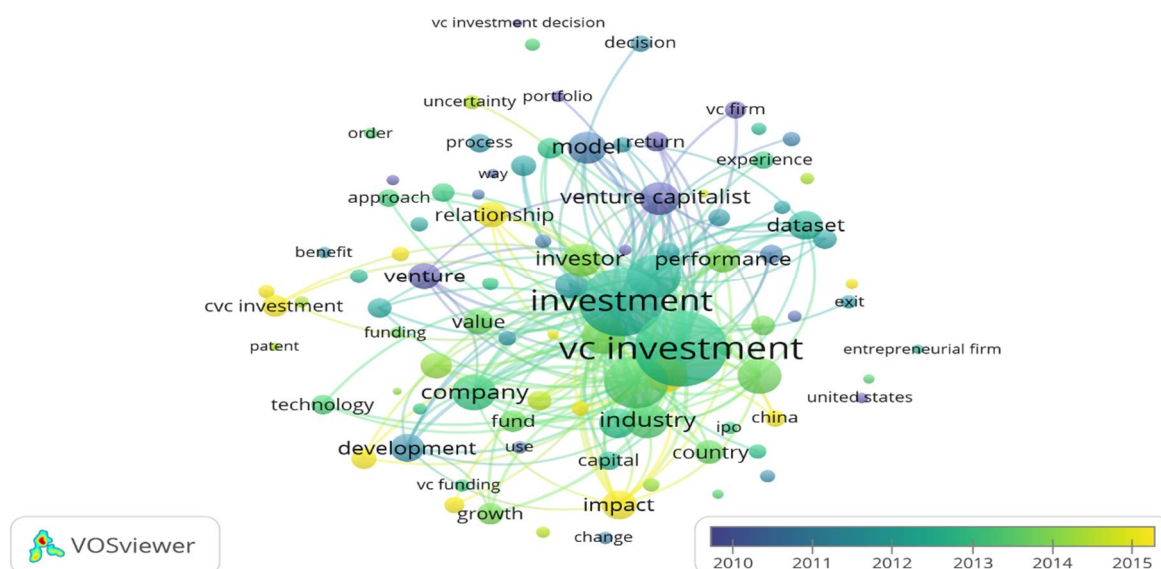
Fig. 4. Common Occurrence of Terms in the Titles and Abstracts of Venture Capital Investment Publications.



Source: Prepared by researchers based on Scopus data

Fig. 5 illustrates the temporal distribution of the common occurrence of terms in the titles and abstracts of venture capital investment publications. It is noteworthy that researchers' interest in this topic has increased, beginning in the year 2013. The subject has been studied from various perspectives, including value creation, performance, role, industry, venture capital investment firms, and the examination of their strategies. Additionally, both bibliographic and textual data analyses converge on the research focus related to venture capital investments, particularly in creating value within companies.

Fig. 5. Temporal Distribution of Commonly Occurring Terms in the Titles and Abstracts of Venture Capital Investment Publications.



Source: Prepared by researchers based on Scopus data

4. CONCLUSION

This study provided a comprehensive overview of research on venture capital investments, employing both content analysis and bibliometric analysis. The content analysis focused on studies addressing the topic in the form of literature reviews, yielding the following key findings:

- Numerous studies exhibit significant interest in venture capital investments, particularly concerning performance evaluation determinants, decision-making criteria, and value creation in companies.
- Researchers often approach the subject through in-depth case studies of companies, relying on various models. Consequently, most venture capital investment research leans towards analytical and empirical investigations.
- Despite substantial progress in venture capital research, there remain many unexplored areas, attributed to continuous changes in database rules.
- Regarding bibliometric analysis, 319 studies from 1982 to 2022 were scrutinized, encompassing both bibliographic and textual data. Key findings include:
- A noticeable surge in publications from 2007 onward signifies growing interest in venture capital investments, especially in the years 2005, 2006, and 2021.

- Predominant topics revolve around venture capital, venture capital investments, venture capital firms, entrepreneurship, performance, with a shift towards collaboration and startups from 2008 onwards.
- Citation analysis highlights crucial subjects, including common networks and spatial distribution in venture capital investments. Notably, the emphasis on these topics indicates researchers' profound interest, along with focus areas related to the performance of venture capital investments, their role in achieving development, and financing venture capital investments for startups.

Undoubtedly, venture capital investments remain a focal point for scholarly inquiry, as affirmed by bibliometric analysis results. Therefore, research in this domain is poised for continued growth, aiding researchers in refining their focus on this subject.

It is essential to note that bibliometric studies have inherent limitations, primarily related to the employed database and bibliometric methodology, as well as constraints associated with study types and objectives (Jafal & Haddad, 2022, p. 653). This acknowledgment comes despite the study's positive outcomes.

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