BIBLIOMETRIC ANALYSIS OF CORPORATE VENTURE CAPITAL IN MANAGEMENT AND BUSINESS LITERATURE

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Abstract

Corporate Venture Capital (CVC) has sparked significant interest in the fields of management and business studies. This study utilizes bibliometric analysis to examine CVC from 1983 to 2024 within the management and business category, drawing from 281 data points from the Web of Science database. The aim is to discern the current state of research in the field, highlights and insights by meticulously analyzing the publication volume, authorship patterns, keyword co-occurrence, clustering, and timeline maps. The analysis reveals a notable increase in studies on corporate entrepreneurship in 2020, 2022, and 2023, with the most cited study being Dushnitsky & Lenox (2005), with 337 citations. Co-citation analysis highlights key themes related to CVC, including innovation, innovation strategy, external knowledge sources, alliance formation, and corporate entrepreneurship. The USA, Germany, and the UK produced the highest number of publications, with a concentration in the USA in 2016. This analysis demonstrates the historical and conceptual expansion of CVC in management and business literature, underscoring its significance as a mechanism for corporate innovation and strategic expansion.

Keywords: Corporate venture capital, CVC, bibliometric analysis.

Jel Classification: M1, O3

YÖNETİM VE İŞLETME LİTERATÜRÜNDE KURUMSAL GİRİŞİM SERMAYESİNİN BİBLİYOMETRİK ANALİZİ

Özet

Kurumsal Girişim Sermayesi (KGS) (Corporate Venture Capital-CVC), yönetim ve işletme alanlarında önemli bir ilgi odağı haline gelmiştir ve bu çalışma, kurumsal düzlemdeki değişen trendleri ve stratejik öncelikleri yansıtmaktadır. Araştırma, Web of Science veri tabanı kullanarak kurumsal girişim sermayesine ilişkin 1983 ve 2024 yılları arasında yönetim ve işletme kategorisindeki 281 veri üzerinden bibliyometrik analiz yöntemiyle analiz yapılmıştır. Amaç, yayın hacmini, yazarlık modellerini, ortak atıf analizini, kümelemeyi ve zaman çizelgesi haritalarını titizlikle analiz ederek alandaki araştırmaların mevcut durumunu, öne çıkan noktaları ve içgörüleri ortaya çıkarmaktır. Analiz sonuçlarına göre kurumsal girişimcilikle ilgili yönetim ve işletme alanındaki çalışmaların 2020, 2022 ve 2023 yıllarında bir artış gösterdiği, en yüksek atıf alan çalışmanın 337 atıf ile Dushnitsky & Lenox (2005) olduğu ve ortak atıf analizine göre kurumsal girişim sermayesine ilişkin çalışmaların merkezinde inovasyon, inovasyon stratejisi, harici (dış) bilgi kaynağı, ittifak oluşturma, kurum içi girişimcilik kavramlarının yer aldığı ortaya çıkmıştır. Yayın sayısı olarak ABD Almanya ve İngiltere iken 2016'da ABD'de yoğunlaştığı görülmüştür. Sonuç olarak, bu analiz, yönetim literatüründeki KGS'nin tarihsel ve kavramsal genişlemesini belirleyerek, onun kurumsal yenilik ve stratejik genişleme için bir mekanizma olarak önemini açıklığa kavuşturmaktadır.

Anahtar Kelimeler: Kurumsal girişim sermayesi, CVC, bibliyometrik analiz.

Jel Kodu: M1, O3

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1. INTRODUCTION

The term Corporate Venture Capital (CVC) refers to the direct investment of institutional funds in external venture companies (Chesbrough, 2002: 5). This definition excludes investments made through an external fund managed by third parties and excludes investments that fall under the more general concept of "corporate entrepreneurship". Corporate entrepreneurship entails the financing of new internal ventures that are distinct from a company's core business and, while having some organizational autonomy, remain legally part of the company. However, our definition includes investments in new ventures set up by a company as independent businesses (Chesbrough, 2002: 5).

CVC is used by companies to expand existing businesses and generate financial returns as the main objective. Research on CVCs has found that they have a diverse structure with both strategic and financial objectives in comparison to traditional Venture Capital (VC) (Burgelman et al., 2022: 3). The literature on CVC provides numerous examples of the entrepreneurial strategic objectives that companies pursue through their VC investments. These objectives include opening a technology window, utilizing internal technological developments, developing innovations with existing business units, creating demand for their own products, seeking acquisition targets, and entering foreign markets (Chesbrough, 2002).

The concept of CVC warrants thorough investigation due to its growing importance in fostering innovation and maintaining competitive advantage in the global market. As traditional R&D models become increasingly insufficient to keep pace with rapid technological advancements, CVC provides a vital alternative by enabling corporations to access external innovations and technologies. An increasing number of institutions began to consider establishing CVCs as a key component of their innovation strategies, both financially and strategically. Corporate executives have become aware about how to apply CVC to support their innovation initiatives and advancement of technologies within their industry. The current period is characterized by the professionalization and institutionalization of CVCs, marking a peak era. During this time, the capital and funds allocated to CVCs have become notable, and the impact of CVCs on the parent company, their relationship with portfolio companies, and the organization of the CVC unit have gained attention. This approach not only enhances the parent company's innovation capabilities but also offers strategic insights into emerging market trends and potential disruptions. Furthermore, CVC activities can influence broader corporate strategies, including foreign direct investment (FDI) and market expansion (FDI Intelligence, 2020). The sector saw substantial growth in 2021, with notable regional trends in the U.S., Europe, and Asia (Hu & Yacoob, 2024: 2).

The article aims to fill the gap in analysis of CVC by conducting a comprehensive bibliometric study using VOSviewer, focusing on high-quality literature from the past decade in the WOS database. Given these multifaceted benefits, understanding the dynamics, effectiveness, and strategic implications of CVC is essential for academics and practitioners aiming to optimize corporate growth and innovation strategies. This study aims to understand the current state of CVC, its roles in driving innovation, strategic growth, and the relationship between corporate and its CVC arm. Bibliometric analysis is conducted to make a systematic literature review and to answer Research Questions (RQs):

RQ1: What is the publication and citation trends of CVC research?
RQ2: Who are the top contributors (i.e., journals, authors, countries) of CVC research?
RQ3: What does existing research inform about CVC research?
RQ4: What should future research be heading to advance CVC?

This research offers a critical review of the rapidly growing field of CVC. It contributes to understanding the current state of CVC research, identifies key themes and provides insights for future exploration in the field.

1. PHASES OF CVC

The history of CVC investment unfolds in distinct waves, each influenced by different trends and factors. The first wave emerged in the 1960s, inspired by the success of independent venture capital funds and driven by trends such as corporate diversification and surplus cash flow. About a quarter of Fortune 500 companies participated in CVC during this period, investing in both external start-ups and internal ventures. However, this wave was short-lived, as market downturns and reduced cash flow led to the closure of many CVC programs (Mason et al., 2019).

In the early 1980s, the second wave began with companies in industries like chemicals and metals establishing CVC programs. Legislative changes and the growth of the venture capital industry fueled this wave, but it faced setbacks with the market crash of 1987 The third wave, emerging in the 1990s and early 2000s, witnessed a surge in venture capital investing driven by technological advancements and the rise of Internet-related ventures. Many established corporations became significant players in the venture capital industry during this period despite facing declines due to market crises (Çavdar Çetin, 2019).

In the early 21st century, a new wave of CVC investing began, highlighting the cyclical nature of CVC investment. Despite economic challenges, many firms remained committed to CVC investments, recognizing the strategic importance of CVC for corporate innovation strategies. This period also saw

the professionalization and institutionalization of CVC, with large sums of capital being allocated to CVC funds, such as SoftBank's $100 billion fund, although changes in investment strategy occurred later (Mason et al., 2019).

2. A MECHANISM FOR CORPORATE INNOVATION

Emphasizing innovation and long-term growth through investment and governance has always been a priority in corporate finance. As companies mature, they often face a decline in internal innovation (Lu & Li, 2024: 1). It's widely recognized how crucial innovation is for a business's survival in an ever-changing environment. CVC is a primary mechanism that large companies use to drive innovation alongside internal Research &Development (R&D) and innovation merger and acquisitions (M&As). CVC provides a valuable opportunity to access and explore emerging technologies (Siegel et al., 1988) and plays a crucial role in enabling incumbents to actively participate in external R&D, thus fostering innovation (Keil, 2004; Fulghieri & Sevilir, 2009).

In recent years, CVC units have gained global importance across industries and technology sectors, helping companies remain agile and forward-thinking, and to cultivate new sources of growth. The CVC unit plays a unique role that is distinct from typical R&D or M&A departments. Its design should align with specific corporate strategic objectives (Strebulaev & Wang, 2024). Research has shown that each CVC organization is unique in its structure, objectives, and relationship with its investments. The most effective structure encourages innovation and is open to taking risks, whether the objectives are strategic or financial. Reporting structures and short or long-term goals can also differ among CVC organizations (Strebulaev & Wang, 2024).

We are currently in the midst of a booming era for CVC on a global scale. In recent times, CVCs have been exceptionally active, both in Turkey and around the world. Despite facing economic obstacles and a decrease in investments, data from the global Corporate Venturing (GCV) Institute shows that the decline in funding for startups backed by corporations has leveled off by 2023. Furthermore, 70% of the organizations that invested in startups in 2022 have resumed making additional investments. It has been noted that traditional venture capital investment is decreasing, and corporate-backed funding rounds have also followed suit. In 2023, there was a 27% decrease in CVC-backed startup funding rounds, with 3,894 transactions compared to 5,339 the previous year. CVC leaders have emphasized their ongoing commitment to investment but with a focus on supporting existing portfolio companies over making new investments. (GCV, 2024).

However, there has been an uptick in corporate investment in the last two quarters. In Q1 2024, there were 901 corporate-backed rounds, indicating a 4% increase from Q4 2023 (GCV, 2024). Figure 1

shows while the number of CVC investors remained stable, there was a noticeable increase in CVC-funded deals in the first quarter of 2024. Corporates especially invested in energy, AI and healthcare (Bain & Company, 2024).

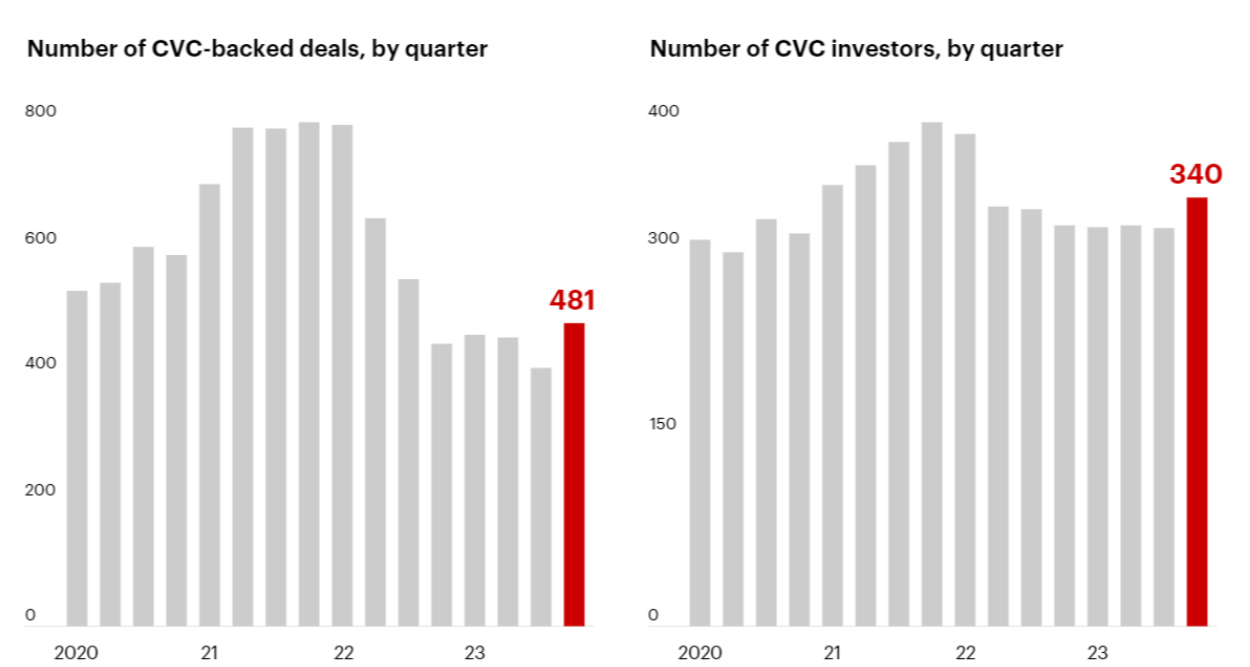

Figure 1. CVC Activity, Bain Global Venture Capital Outlook: The Latest Trends, 2024

As supported by global research, the number of CVCs and CVC investments have been increasing especially in recent periods. The number of CVCs in Turkey increased to 84 as of the end of May. Of these, 37% were finance, 25% were holding companies and 7% were technoparks. Other industries totaled 31%. In 2023, the participation rate of CVCs and institutions in investments was 38%. (Startups.watch, 2024).

In CVC literature there is a comprehensive analysis of CVC conducted by Huiwen and Yaacob (2024) and it utilizes two different databases (WOS and Scopus). This research is taken as reference and it aims to understand with which concepts CVC is addressed in the literature, when and why the number of publications increased and to provide guidance for future studies. For this purpose, bibliometric analysis is conducted to make a systematic literature review. This study utilizes bibliometric analysis to examine CVC from 1983 to 2024 within the management and business category, drawing from 281 data points from the Web of Science database.

3. RESEARCH METHODOLOGY

This research investigates the burgeoning field of CVC, specifically focusing on its role in fostering innovation, driving strategic growth, and illuminating the dynamic relationship between corporations

and their CVC arms. The rapid rise of CVC, particularly within the Turkish investment landscape, necessitates a deeper understanding of global players and their practices. By analyzing current research on CVC, this study aims to not only contribute to the comprehension of the global CVC landscape, but also to identify key themes and illuminate promising avenues for future exploration within this critical field. Bibliometric Analysis was applied to study "Corporate Venture Capital" in the Web of Science (WOS) database management literature. Web of Science is introduced by Clarivate Analytics in 1964 as a well-established scientific citation indexing service across various disciplines (Huiwen & Yaacob, 2024: 3). The data obtained from this scientific analysis mapping technique were analyzed using the VOSviewer 1.6.17 program. Bibliometric analysis is an analytical technique that is often employed in systematic literature reviews-it involves the quantitative analysis of scholarly works (Lim & Kumar, 2023:1). Bibliometric analysis allows us to assess the productivity (publications) and impact (citations) of research, such as articles, and contributors like authors, institutions, countries/territories, funders, and subject areas within the field. This process aligns with "performance analysis," a significant aspect of bibliometric studies. (Lim & Kumar, 2023:1). Citation analysis, co-citation analysis, keyword co-occurrence analysis and bibliometric coupling were performed. The analysis showed that 281 publications related to CVC were published in WOS between 1983-2024, but 2024 studies cover only the first three months. After English language filtering, the number of publications was reduced to 280. When "Management" and "Business" are defined in the WOS category, we come across 193 publications on CVC. Figure 2 shows the filtering applied to the publications on CVC according to the search made on 30 March 2024 in WOS.

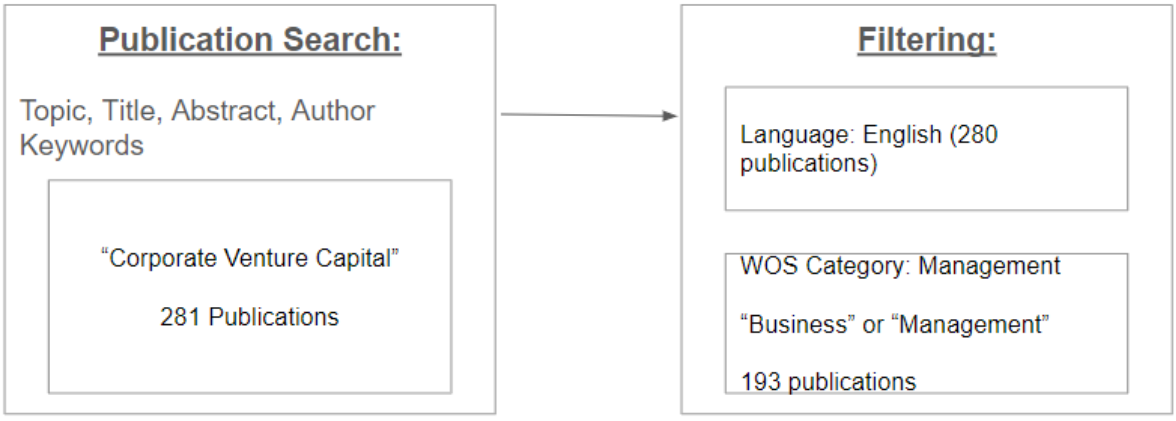

Figure 2. Research Flow Diagram

The studies mentioned above are included in the SSCI, ESCI, BKCI-SSH, SCI-EXPANDED, CPCI-SSH, BKCI-S, and CPCI-2S indexes.

3.1. Findings Related to Research

WOS database contains publications related to "CVC." After filtering the management category in WOS, 193 studies were identified, including 173 articles, 15 book chapters, 11 early access, 7 review articles, 5 proceeding papers, 4 letters, 3 corrections, 1 book, and 1 book review. In the process of searching for studies related to management in WOS, it was observed that the majority of the research on CVC was carried out in the "Journal of Business Venturing" and "Strategic Entrepreneurship Journal". Fourteen studies were conducted in each of these journals, with a focus on topics such as firm performance, firm value, innovation, and investment. Figure 3 shows the distribution of these studies in WOS.

Figure 3. Publication Titles of Relevant Sources on the Concept of CVC in the Field of Management and Business

Table 1. Number of Publications on CVC in WOS by Years

Publication Years	Publication Number
2024	5
2023	19
2022	17
2021	12
2020	17
2019	11
2018	8
2017	7

2016	14
2015	6
2014	6
2013	8
2012	6
2011	10
2010	9
2009	5
2008	6
2007	4
2006	5
2005	7
2004	1
2002	2
2000	1
1990	1
1987	1

Studies on CVC in the field of management and business administration have been carried out since 1987, according to the WOS database. The studies related to CVC have shown a significant increase between 2011 and 2024, especially in 2023, 2022, 2021, 2020, and 2016. The number of citations related to CVC has also increased significantly, particularly between 2020-2023, indicating a growing interest in the subject. The reasons for this increase will be re-evaluated in relation to co-occurence analysis. Also, investment rounds with Corporate Venture Capitalists (CVCs) have been on the rise worldwide since the start of 2020. This upward trend is projected to persist until the first quarter of 2022, signaling a burgeoning interest in CVC. To determine a meaningful relationship between years and citations, it may be useful to examine the citation distribution on a yearly basis. In this context, Figure 4 displays the citation distribution by year in order to observe the trends related to CVC.

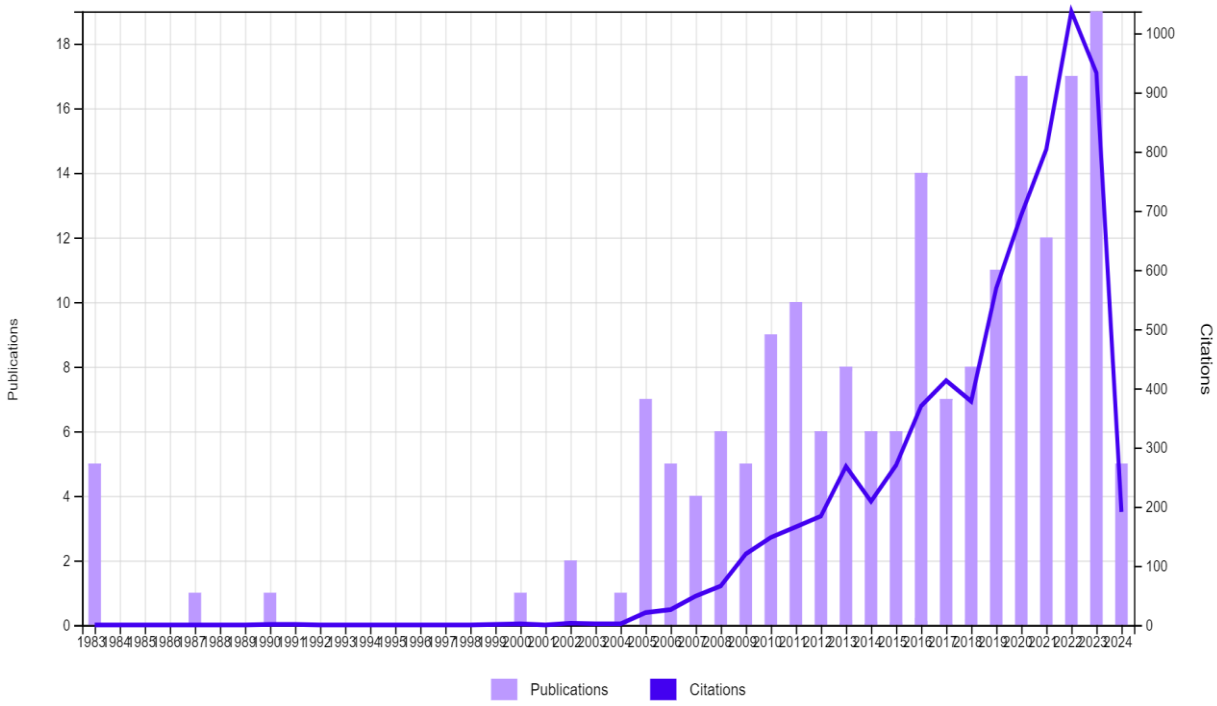

Figure 4. Citation Distribution of Publications on CVC in WOS by Years in the Field of Management and Business

Resource: (WOS 30th March, 2024).

In answer to the 1st Research Question, it is seen that there is a more intense interest in the concept of CVC in the literature as of 2020 and this is reflected in the number of publications. In Figure 4, it is shown that significant developments in the literature on CVC between 2020 and 2023 are evident, leading to an increase in publications and citations. As of 2019, the number of citations to publications has shown significant increases on an annual basis, and the number of citations in 2022 peaked and reached over 1000.

3.1.1. Findings on citation analysis

Citation analysis is a valuable method for tracking annual developments within a field (Heradia et al., 2016). It is employed to identify authors and publications that are frequently cited, as well as to track developments within the relevant discipline and related topics (Öztürk & Gök, 2020). Most of the publications on CVC are in the category of management (146) business (142) according to WOS categories. Majority of the publications are in the “Journal of Business Venturing" and "Strategic Entrepreneurship Journal. When we look at the countries where academic publications are made, USA (88), Germany (33), England (22), Italy (18), Switzerland (17) and France (14) are the most prominent countries.

Table 2 shows the distribution of the most cited authors, articles, and journals between 2020 and 2024. The grey boxes in the table show the highest number of citations received by the publications in the years indicated.

Table 2. Distribution of CVC Publications and Citations between 2020-2023

Authors	Publication	Citations					Total
		2020	2021	2022	2023	2024	
Dushnitsky, G and Lenox, MJ (2005)	When do incumbents learn from entrepreneurial ventures? Corporate venture capital and investing firm innovation rates	32	36	29	23	4	337
Wadhwa, A and Kotha, S (2006)	Knowledge creation through external venturing: Evidence from the telecommunications equipment manufacturing industry	26	28	24	22	4	296
Drover, W; Busenitz, L; (...); Dushnitsky, G (2017)	A Review and Road Map of Entrepreneurial Equity Financing Research: Venture Capital, Corporate Venture Capital, Angel Investment, Crowdfunding, and Accelerators	43	53	61	61	10	280
Zahra, SA and Hayton, JC (2008)	The effect of international venturing on firm performance: The moderating influence of absorptive capacity	23	30	29	17	2	279
Dushnitsky, G and Lenox, MJ (2005)	When do firms undertake R&D by investing in new ventures?	17	20	19	22	3	272
Dushnitsky, G and Lenox, MJ (2006)	When does corporate venture capital investment create firm value?	24	29	28	29	6	262
Markman, GD; Siegel, DS and Wright, M (2008)	Research and Technology Commercialization	19	28	15	20	3	223
Schildt, HA; Maula, MVJ and Keil, T (2005)	Explorative and exploitative learning from external corporate ventures	19	16	16	12	0	221
Dushnitsky, G and Shaver, JM (2009)	Limitations to Interorganizational Knowledge Acquisition: The Paradox of Corporate Venture Capital	14	26	18	26	6	204
Hill, SA and Birkinshaw, J (2014)	Ambidexterity and Survival in Corporate Venture Units	35	31	27	28	5	194
Chesbrough, HW (2002)	Making sense of corporate venture capital	13	13	16	11	2	194
Keil, T; Maula, M; (...); Zahra, SA (2008)	The effect of governance modes and relatedness of external business development activities on innovative performance	15	14	25	13	4	188
Narayanan, VK; Yang, Y and Zahra, SA (2009)	Corporate venturing and value creation: A review and proposed framework	7	13	14	14	5	171
Benson, D and Ziedonis, RH (2009)	Corporate Venture Capital as a Window on New Technologies: Implications for the Performance of Corporate Investors When Acquiring Startups	13	17	17	15	3	163
Keil, T (2004)	Building external corporate venturing capability	9	6	10	8	0	119

Resource: (WOS 6th April, 2024).

According to this table, the most cited studies on CVC and related concepts are Dushnitsky and Lenox (2005), Wadhwa and Kotha (2006) and Drover, Busenitz, Matusik, Townsend, Anglin, Dushnitsky

(2017), Zahra, SA and Hayton, JC (2008), Dushnitsky, G and Lenox, MJ (2005) and Dushnitsky, G and Lenox, MJ (2006), respectively. In light of these data, it is observed that in the most cited studies, the concepts of technology entrepreneurship, CVC, innovation, appropriability (Dushnitsky & Lenox, 2005); technology, new business enterprises, venture capital - evaluation, telecommunication, investments (Wadhwa & Kotha, 2006); venture capital, CVC, angel investment, crowdfunding, accelerators, equity financing, entrepreneurship (Drover, Busenitz, Matusik, Townsend, Anglin and Dushnitsky, 2017) are associated with CVC. This situation regarding the most cited studies related to the concept is supported by the visual in Figure 5.

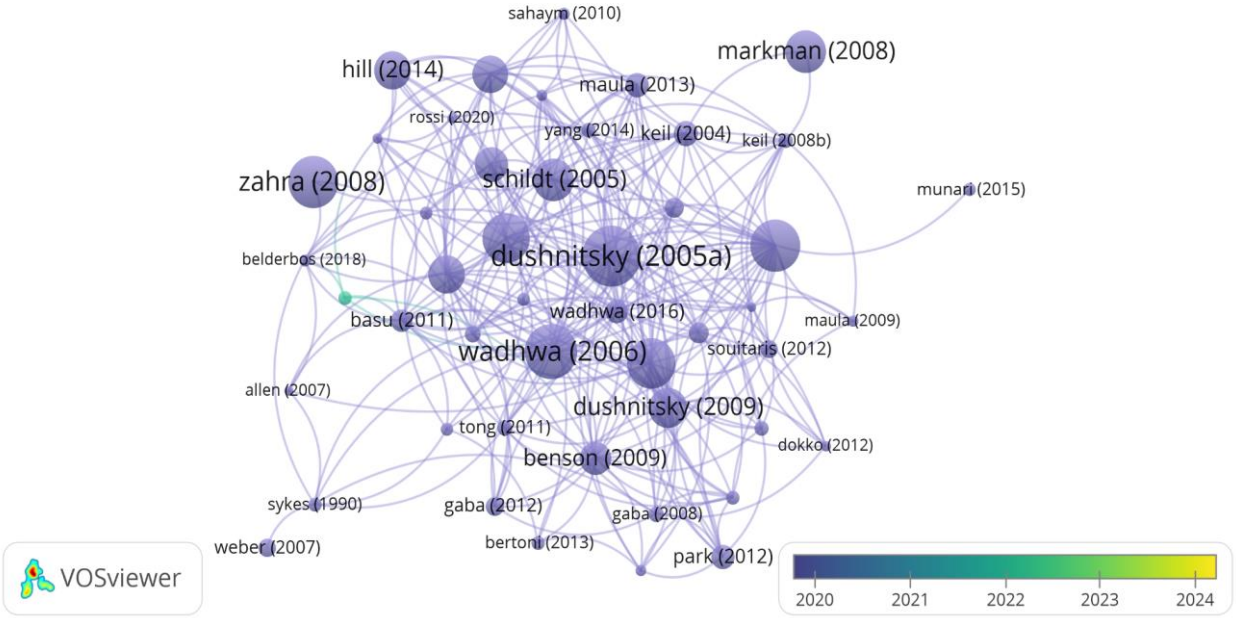

Figure 5. Citation Network on CVC between 2020-2024

In order to better visualize the most frequently cited studies on CVC, Figure 6 displays their density.

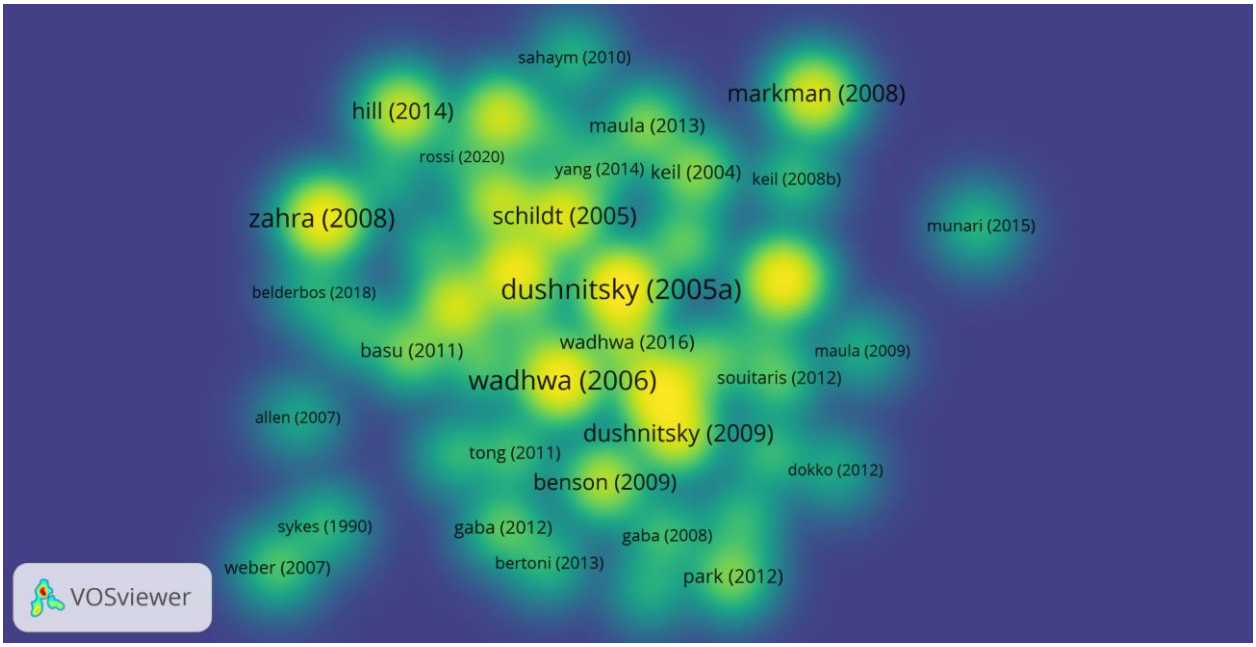

Figure 6. Density Network of Cited Studies on CVC in Management

Dushnitsky & Lenox (2005a) focus on exploring the potential innovative advantages of CVC, which involves equity investments in entrepreneurial ventures by established firms. They suggest that CVC programs have the potential to significantly contribute to capturing innovations from entrepreneurial ventures and should therefore be a critical component of a firm's overall innovation strategy. The due diligence, post-investment, and a failing venture may provide firm learning in different ways in CVC activity. Also, intellectual property-wise, CVC may be a uniquely advantageous strategy for gaining a window into entrepreneurial technologies in weak IP regimes. They also propose that the impact of investment in entrepreneurial ventures on firm innovation rates will be more significant for those firms that have a strong base in innovation. Their findings in research suggest that CVC programs play a significant role in firms' innovation strategies and may serve as a crucial component of their innovation toolkit, particularly in environments where access to external knowledge is vital. In another article, Dushnitsky and Lenox (2005b) discovered that firms tend to invest more in new ventures, also known as "CVC" in industries with weak intellectual property protection. Additionally, they found that firms are more likely to invest in industries with high technological ferment and where complementary distribution capability is important. The study also revealed that firms with greater cash flow and absorptive capacity are more inclined to invest. These findings indicate that in Schumpeterian environments, established companies may enhance their innovative efforts by leveraging the knowledge generated by new ventures.

Wadhwa & Kotha (2006) found that established firms are increasingly investing in entrepreneurial ventures to gain insights into new technologies and markets. Their study, which analyzed panel data

from corporate investors in the telecommunications equipment manufacturing industry, revealed that the impact of CVC investments on knowledge creation is influenced by the level of investor involvement. Specifically, the researchers observed that a low level of investor involvement is associated with an inverted U-shaped relationship between the number of CVC investments and innovation performance. Conversely, a high level of investor involvement reverses this relationship, leading to an increase in investments and boosting innovation.

The study by Drover et al. (2017) emphasizes the importance of venture capital in entrepreneurship and the launch of high-growth ventures. It explores various aspects of venture financing and points out that while most research has focused on venture capital (VC), attention is now turning to other forms, such as angel investment, corporate CVC, crowdfunding, and accelerators. The review highlights the need to study the differences among equity investors and their interactions across different categories. Broadening the scope of inquiry is essential for understanding the changing landscape of entrepreneurial financing. The text advocates for careful theorizing and empirical studies to drive practical changes and enhance theoretical understanding in this area. There appears to be increased interest in this work, particularly in 2021, 2022 and 2023.

According to Zahra and Hayton (2008), a company's absorptive capacity plays a key role in shaping the connection between international venturing and financial performance. It is crucial for executives to prioritize investments in internal R&D and innovative capabilities in order to effectively harness knowledge from foreign markets.

Dushnitsky & Lenox (2005b) propose that CVC investment creates greater firm value when firms pursue CVC to harness novel technology. They present evidence using a panel of CVC investments that supports their proposition. The paper also discusses the potential challenges and benefits of CVC for financially oriented firms, highlighting the importance of CVC as a tool for creating firm value through access to novel technologies and practices.

The most cited publications on Corporate Venture Capital (CVC) focus on its strategic role in fostering innovation, its impact on corporate performance, and its differentiation from independent venture capital (IVC). Key studies highlight how CVC investments serve as a tool for accessing new technologies and gaining market intelligence, emphasizing the strategic alignment with parent company goals. Additionally, these works explore the network advantages of CVC, showing how connections to established companies enhance investment performance and innovation outcomes.

The leading contributors to CVC literature include prominent journals such as the Journal of Business Venturing, and the Strategic Management Journal. Notable authors in the field include Gary Dushnitsky, known for his work on corporate entrepreneurship, Michael J. Lenox. The United States, Germany, and

the United Kingdom are the top countries contributing to CVC research, reflecting the global interest and impact of CVC on corporate strategy and innovation.

3.1.2. Findings on co-occurrence of keyword and cluster Analysis

Keyword co-occurrence analysis, a fundamental method in scientometrics for analyzing document content, is essential for comprehending the landscape of research on CVC (Huiwen & Yaacob, 2024:9). In the CVC literature, citation and publication analyses can reveal the focal points of studies on the concept. Figure 7 shows the study clusters obtained by combining keywords and cluster analysis of 193 studies in the management and business categories related to CVC in WOS.

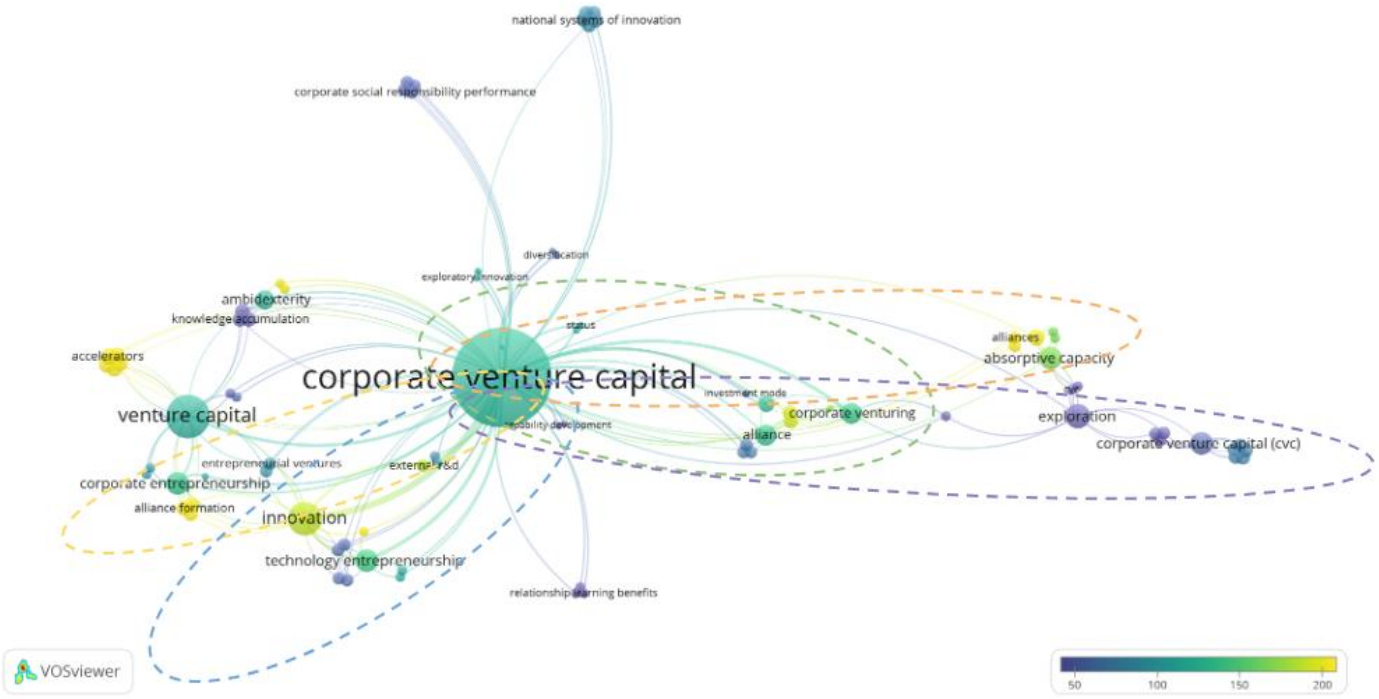

Figure 7. Co-occurrence of Keywords

As shown in Figure 7, innovation, CVC, and corporate entrepreneurship are the focal points of the studies on CVC . Based on the comprehensive analysis of the publications in WOS, five main clusters of studies on the concept are evident. Figure 8 provides a clearer representation of the concepts within these clusters.

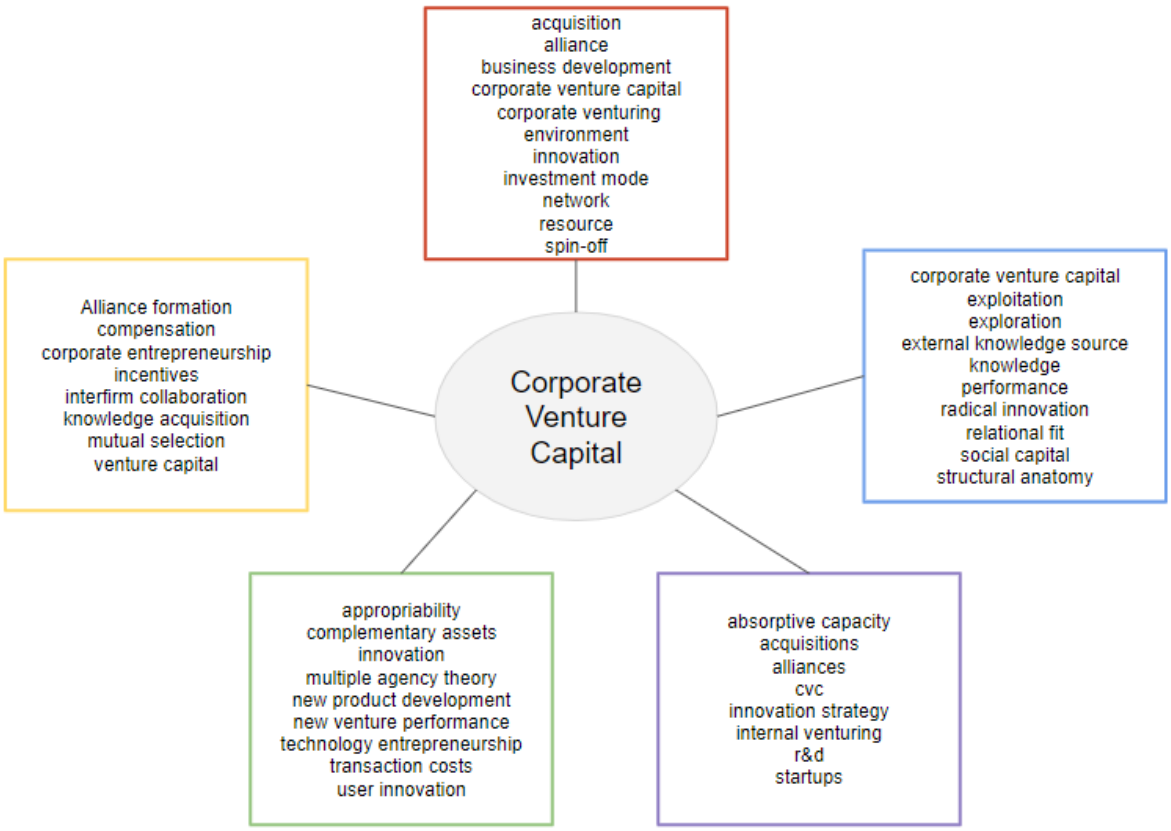

Figure 8. Clusters Related to Concepts Associated with CVC in WOS

In Figure 8, different clusters are identified based on their focus areas in CVC. The red cluster can be named as strategic value and business development, as it explores how CVC activities align with broader corporate strategies, emphasizing business development through acquisitions, alliances, and innovation. The green cluster can be named as innovation and new venture performance as it examines the impact of CVC on innovation and new venture performance, highlighting the role of complementary assets and technology entrepreneurship. The blue cluster can be named as knowledge integration and radical innovation as it investigates the role of CVC in integrating external knowledge to foster radical innovation and enhance performance through exploration and exploitation activities. The yellow cluster can be named as corporate entrepreneurship and collaboration as it focuses on how CVC facilitates corporate entrepreneurship and collaboration between firms, including incentive structures and knowledge acquisition. Lastly, the purple cluster can be named innovation strategy and internal venturing as it focuses on the strategic aspects of innovation, including absorptive capacity, internal venturing, and the formation of alliances to drive R&D and startup growth.

This study focuses on constructing a literature map on CVC by emphasizing the "country" network node (Huiwen & Yaacob, 2024:7). Figure 9 shows citation analysis of countries.

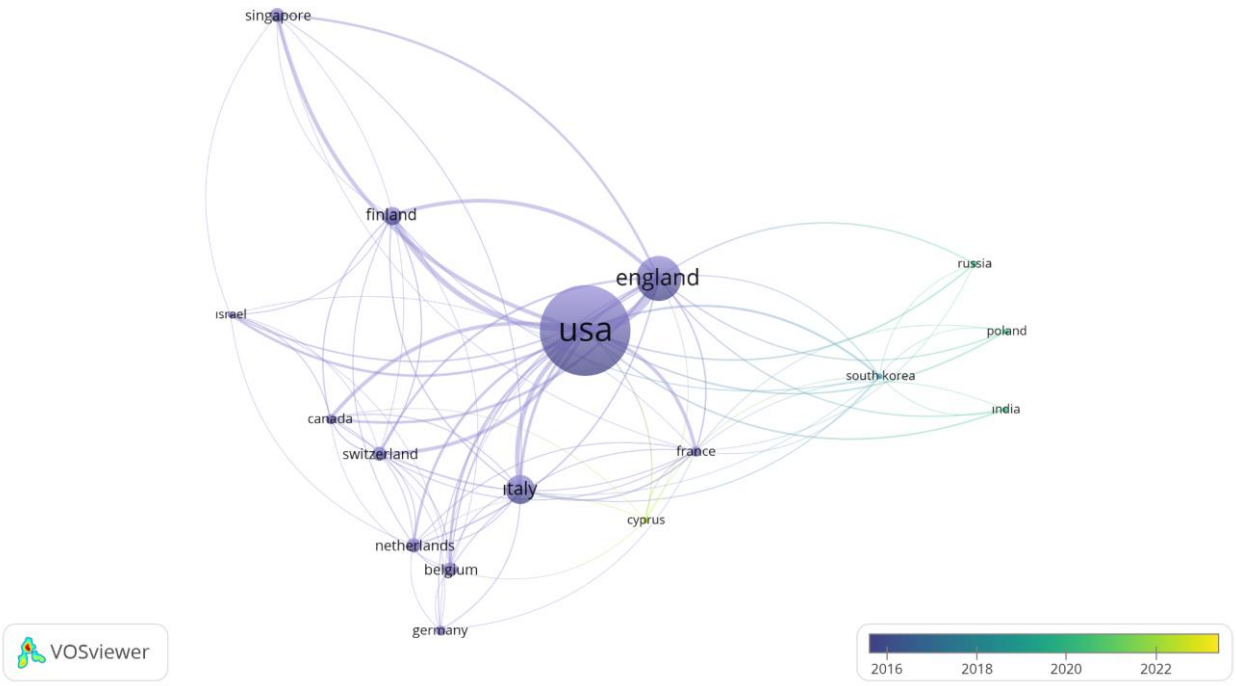

Figure 9. Citation Analysis of Countries Related to CVC

It is emphasized in the figures and tables previously shared that the academic interest in CVC has gradually increased especially in 2016, 2020, 2022, and 2023. Figure 8 shows that publications in the field were concentrated in the USA, England, and Italy in 2016. In 2018, it was concentrated in South Korea, and in 2020 in Poland, India, and Russia. In 2022, it is concentrated in Cyprus. The USA generally has the highest number of corporate CVC. When we look at the percentage of quarterly deals by global region in the last quarter of 2023, the breakdown was as follows: US 29%, Asia 42%, Europe 22%, Latin America 2%, Canada 2%, and all other regions 3%. Therefore, the highest number of CVC deals and investments are realized in the US, Asia, and Europe. These regions also have a high number of publications covering CVC activities. In Turkey as of the end of May, the number of CVCs in Turkey increased to 84 and in 2023 the participation rate of CVCs and institutions in investments was 38% (Startups.watch, 2024).

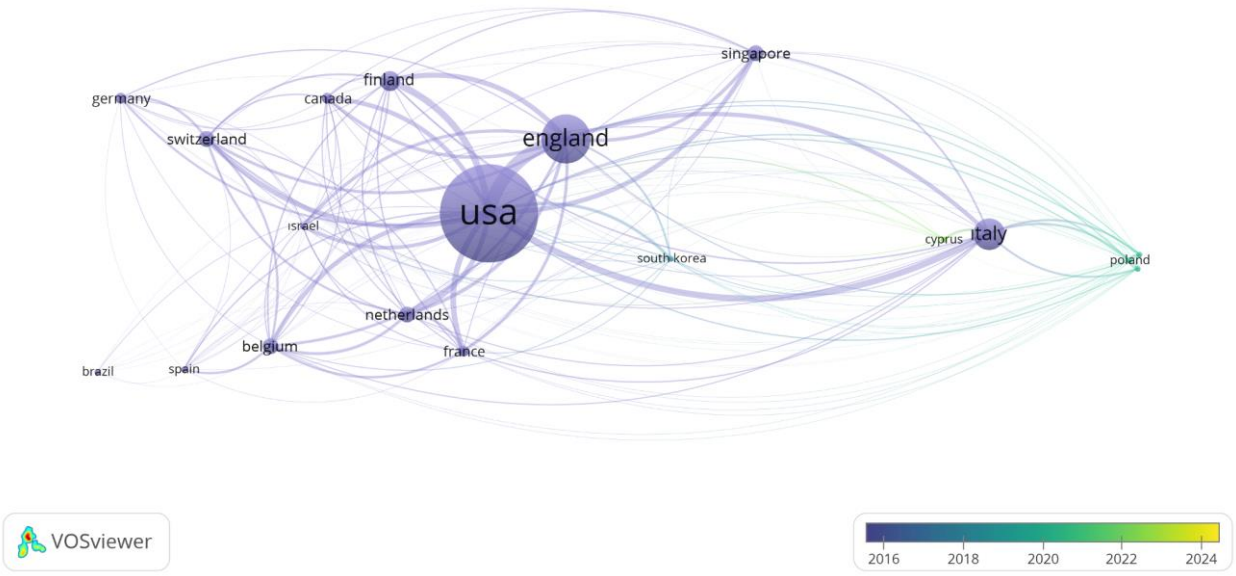

Figure 10. Bibliometric Coupling of Analysis on CVC in Management

Figure 9 shows that bibliometric matching is performed on the basis of countries. The increase in the thickness of the link means an increase in cooperation between the countries at both ends of the link. In this context, it is observed that the cooperation between the USA and the UK, the USA and Finland, and the USA and Italy increased especially in 2016.

Existing research on CVC highlights its strategic importance for fostering innovation and maintaining competitive advantage. Historical analysis shows that CVC has evolved through various waves, each reflecting different market conditions and strategic goals. Key research clusters focus on the alignment of CVC with corporate strategy, the facilitation of corporate entrepreneurship, the impact on innovation and new venture performance, and the integration of external knowledge for radical innovation. Prominent contributors to CVC research include top journals like the Journal of Business Venturing, influential authors such as Gary Dushnitsky and Michael J. Lenox, and leading countries including the United States, Germany, and the United Kingdom.

4. CONCLUSION

The bibliometric analysis of Corporate Venture Capital (CVC in management and business literature reveals a dynamic and expanding field of study. The research demonstrates an evident growth in academic interest, particularly highlighted by the surge in publications and citations from 2016 to 2024. Through comprehensive data analysis, it is evident that CVC is a crucial element for corporate

innovation and strategic entrepreneurship and plays a pivotal role in shaping global investment patterns and technological advancements. The thematic clusters uncovered through this study—ranging from innovation and corporate entrepreneurship to international venturing—underscore the multifaceted impact of CVC on business development and firm performance.

Moreover, the geographical distribution of publications may be a sign of a shift in focus towards emerging markets and non-traditional regions, reflecting the global nature of venture capital investment. This shift is particularly notable in the increasing engagement of countries like Cyprus, Poland, India, and Russia, alongside the consistent prominence of the United States. The study also identifies a trend towards more collaborative and cross-country research efforts, indicating a broadening scope of CVC studies.

In conclusion, this bibliometric analysis maps the historical contours and current state of CVC research and illuminates its critical role in driving innovation, strategic growth, and global entrepreneurship. As CVC continues to evolve, it remains an essential area for further scholarly exploration, particularly in understanding its impact on technological development, corporate strategy, and economic growth.

4.1. Recommendation for Future Studies

Based on the article, future research on CVC should delve into several promising areas. One potential area could be to investigate the role of CVC in fostering technological development and economic growth in emerging markets. The interplay between CVC and startup ecosystems in emerging markets presents a fertile ground for exploration, offering insights into how CVC can support technological diffusion and innovation in these regions. Another direction could involve exploring the strategic partnerships and collaboration models that CVC fosters between corporations and startups. This includes assessing how these alliances impact both parties' innovation capabilities, particularly in rapidly evolving industries like AI and clean technology. In addition to technological development and economic growth, future research on CVC could explore how companies align their CVC strategies with their broader corporate objectives and investment theses. This alignment is crucial in ensuring that CVC investments contribute to long-term corporate goals while fostering technological innovation. Finally, longitudinal studies examining the long-term outcomes of CVC investments on both the investing corporations and the venture companies would contribute significantly to our understanding of CVC's strategic value.

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