IJABS Volume 2. Issue 4. (2023), ISSN: 2940-2735

IJABS International Journal of Advanced Business Studies

International Journal of Advanced Business Studies
https://besra.net/index.php/ijabs/

Full length article

A Review on Factors Influencing the Location Distribution of Venture Capital

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Article Info

Received: 15.08.2023

Accepted: 01.09.2023

Available online: 15.12.2023

Keywords:

venture capital; location distribution; influencing factors

DOI:

https://doi.org/10.59857/ijabs.4814

ABSTRACT

Venture capital has played an increasingly important role in China's innovation, entrepreneurship and economic development. This paper sorts out the relevant domestic and foreign literature in a systematic way from the seven influencing factors of the location distribution of venture capital, and compares the progress and deficiency of venture capital research in China. Based on the review, this paper proposes two research directions that can be further explored in the future: the spatial distribution pattern of venture capital and the location characteristics of venture capital enterprises. The research in this paper can provide useful implications for venture capital research and practice.

1. Introduction

In 2021, the number and value of venture capital deals, the number and value of global corporate venture capital transactions, the number of exit transactions and exits, and the amount of global fund-raising reached record high in the global venture capital market. Compared with the end of 2019, the corporate participation and participation rate of venture capital in the United States reached a new high in the first quarter of 2020. In 2019, the quarterly increase in the amount of investment in venture capital invested by European companies was also very significant, and the investment participation rate reached an all-time high in the first quarter of 2020. On the Asian side, companies and their venture departments have been the backbone of the Asian venture capital ecosystem for many years, and many companies are actively participating in the investment market for the benefit of the entire regional venture capital ecosystem (KPMG, 2022). At present, with the spatial transfer of the venture capital industry worldwide, the focus of the development of the venture capital industry has gradually shifted to the developing countries, and the developing countries represented by China will become the focus and hot spot of the future venture capital research.

Innovation is the fundamental driving force for economic development. From a global perspective, innovation plays an increasingly prominent driving role in economic growth and has become an important supporting

factor for improving the comprehensive national strength of a country (Du Debin, 2015). The rapid development of high-tech industry in Silicon Valley and the arrival of the era of "new economy" in The United States have verified the great effect of venture capital in promoting the combination of knowledge, thought and capital. Following the US, governments of all countries hope to use venture capital to promote technological innovation and the development of high-tech industries (Li Yizong and Yu Yan, Luo Wei et al., 2014). In recent years, venture capital has played an important role in China's economic transformation and development, and has become a major driving force for innovative development.

The location distribution of venture capital and its relationship with innovation have always been a hot issue in geography, economics and management. This paper aims to make a comprehensive review of the relevant literature of venture capital at home and abroad, and summarize the research results of the previous research literature in the influencing factors of the location distribution of venture capital investment. Through this review, it is found that there are many factors affecting the location distribution of venture capital investment, and the influence of each factor will have different manifestations in different regions, so the corresponding research ideas are put forward. Based on the systematic analysis framework, this paper defines the core context and main research topics of venture capital research, and summarizes the shortcomings of venture capital research in China and the future research opportunities based on the Chinese situation, which is of reference significance for further promoting the development of venture capital research and practice.

2. Literature Review

2.1 Government policy Environment

A stable and high-level macroeconomic environment provides a good basis for the development of start-ups, such as broad market development space, low entrepreneurial risks and costs (Zhuang Delin et al., 2020). Previous studies have reported that Government-funded venture capital has an important impact on enterprises because of the better performance of government-funded venture capital than private venture capital (Brander J A, Du Q, Hellmann T, 2010). Under different assumptions, recent evidence suggests that tax policies and regulatory measures provided by the government can play a positive role by reducing information asymmetry (Anson Wong, 2014).

In terms of government guidance funds, by studying the influence factors of venture capital in 21 countries. They found that the number of initial public offerings by companies, the size of private pension funds and government policies were important drivers of a country's venture-capital industry (Jeng Wells, 2000). A number such as researchers have reported that the function of government guide fund is premised, that is, sound system design and qualified venture capital managers can better play the role of government guide fund (Cumming and Dai, 2010). Government guide fund can effectively absorb social capital, and then improve the scientific and technological innovation ability of science and technology innovation enterprises (Othmar, 2014).

2.2 Financial Development Level

The level of local financial development can promote the development of venture capital in Ningbo (Li Xianqiang and Ma Xiang, 2019). Previous studies have reported that venture capital institutions have a tendency to concentrate in the developed areas of technology and finance (Florida and Kenney, 1988). Recent evidence suggests that venture capital does tend to cluster in financial and technology hubs where returns are high

(Donald, 1993). A number such as researchers have reported that the most important factor affecting the location of SMEs is financing channels. Too small amount of financing is not conducive to the development of enterprises. Private equity financing cannot guarantee the company's operational autonomy, so these enterprises are often stationed in an independent trading area with good environment and large amount of financing (Vladislav Mura, 2012).

Through the investigation and analysis of Southeast Asian countries, this paper discusses the influence of the financial environment liberalization brought about by the economic and financial reform in Southeast Asian countries since 1980s on the liquidity of capital structure and financing mode (Rashid Ameer, 2003). By analysing the statistical data of 14 European countries from 1988 to 2001, Italian scholars found that the degree of financial market openness to venture enterprises has a very important impact on the returns of both high-tech venture capital and venture capital in the early stage (Bottazzi and Da Rin, 2004).

2.3 Scientific and Technological Innovation Level

There is a positive correlation between venture capital and technological innovation, and the two interact (Liu Guang and Liu Yiping, 2019). Engel and Keilbach (2007) confirm the above points, and innovative companies are more likely to get venture capital, but the innovation ability of the enterprise will not be significantly improved after the risk investment, but will have a higher growth rate and also show some advantages in terms of materialization and commercialization. Previous studies have reported that venture capital is significantly positively correlated with the number of patents through the research on the data of venture capital in the United States (Lemer and Kortum, 2000). This paper studies the favourable factors of the development of venture capital in Silicon Valley. The results show that its advanced technological innovation ability and rich financial resources make Silicon Valley the centre of venture capital in the world (Chahine, 2012).

Zhang Yilin (2018) based on the environment to support the theory of venture capital, from the induced environment supporting elements and mandatory environmental support two aspects to build the index system of the influence of spatial agglomeration affect China's risk investment, think that the induced factors of high and new technology enterprise output value proportion to our country venture capital agglomeration has significant positive driving action. The scale inside the city also confirms the trend that venture capital tends to gather in financial or high-tech centres (Xu Yiqing, Pan Fenghua and Jiang Xiaoyu, 2016).

2.4 Human Resource Environment

In terms of talent, the level of education, difficulty and cost of talent acquisition in the region have a profound impact on the development of venture capital industry, talent competition is the basis of all economic competition. (Schertler, 2007) collected relevant data of 15 Western European countries for empirical research, and the research results pointed out that the development of science and technology finance in a region cannot be separated from the maintenance of regional policies and regulations and the popularization of innovation consciousness. The level of an investment fund management team is related to the quality of local professionals, and regions can promote the progress of local venture capital by improving the talent training mechanism and the quality of talents (Patzelt, 2010). (Madhavan, 2012) believes that investment activities are forced to gather within a certain range due to the restriction of spatial proximity due to local human capital and social network.

(Li, 2018) point out that science and technology talents can promote regional agglomeration of science and technology business incubators, thus indirectly improving the development of venture capital.

2.5 Economic Development Level

Venture capital, as a kind of financing method with both benefits and risks, needs a lot of financial support in the early stage. Therefore, the level of economic development of a region has an important impact on venture capital. (Ning and Wang, 2015) found that US GDP growth, industrial production index and unemployment rate can significantly predict its venture capital scale. Fang Jiawen and Liu Haimeng (2017) tested that there was a strong positive correlation between the level of economic development within entrepreneurship in Beijing-Tianjin-Hebei urban agglomeration and venture capital. However, there are also opposite views. For example, Jeng and Wells (2000) believe that the level of economic development is not an important factor affecting venture capital.

Ning Yixi (2016) searched and analysed the influencing factors of macro and micro venture investment in China and the United States respectively, and proposed the macroeconomic indicators that affect venture investment, including GDP, patent application, currency circulation, export, CPI and other factors. Xu Qiang and Wang Ting (2018) believe that regional economy can promote the development of venture capital based on an empirical study of listed companies in the Yangtze River Delta urban agglomeration. (Fang Jiawen and Liu Haimeng, 2017) made an empirical analysis of the influencing reasons for the development of venture capital in the Beijing-Tianjin-Hebei urban agglomeration and pointed out that the local economic development level could promote the development of venture capital.

2.6 Intermediary Service Organization Development Level

As for the intermediary service market, the study of (Shachmurove et al, 2012) shows that a region with perfect intermediary facilities supporting science and technology and finance will enhance the attractiveness of the region to venture capital. (Gao Xiaoyan, 2003) believes that China's financial intermediary service market is still in a period of rising development, and eastern regions such as Shenzhen and Shanghai are developing rapidly. But in general, there is still a big gap with the United States and other developed countries, China accelerated the level of intermediary services to promote the development of venture capital. Different development stages, reputation and the developed degree of intermediary service institutions of venture capital institutions affect the spatial agglomeration level of venture capital (Wang Xi and Dang Xinghua, 2013) .

2.7 Information Infrastructure Level

In terms of infrastructure, convenient transportation will affect the progress of investment and project selection. The regions with developed venture capital industry are often regions with convenient transportation, advanced communication equipment and complete public services. Many scholars, such as (Giroud, 2013), empirically studied the impact of airline changes on venture capital and found that increasing airline routes can reduce the monitoring cost of geographical separation between venture capital institutions and start-ups and increase the rate of return of enterprises by 1.4% to 3%.

Bemstein (2016) showed that by means of social survey, about 90% of venture capital institutions expressed that convenient transportation could improve their cooperation and communication with the invested

companies and help them to grasp the enterprise dynamics faster and better. Long Yu and Li Yao (2016) found that in practice, the geographical distance between venture capital institutions and start-ups is very important, because if the geographical distance is too long, it will not be convenient for supervision during the implementation of venture capital projects and the information transaction cost is high. However, the rapid transmission of information over the Internet will also reduce the remote cost of venture capital. Therefore, the role of infrastructure on venture capital and its impact on exit performance remain to be further studied.

2.8 Venture Capital

By analysing 10 years of detailed data on the development of venture capital in 21 countries, recent evidence suggests that GDP, initial public offerings, government projects, private pension funds, labour market rigidity and other factors all play a very important role in the development of venture capital (Jeng and Wdls, 2000). Some researchers analysed the present situation of the central and east European countries risk investment environment and build the environment framework, namely economy, entrepreneurial spirit, legal and social four aspects, so as to establish index system of risk investment environment for the Czech Republic, Slovakia, Slovenia, Hungary, Estonia, Russia, Slovenia, Poland and other countries has carried on the empirical research (Schöfer, P, 2002).

3. Theoretical Framework

3.1 Location Theory

Location theory is a theory that studies the spatial location choice of human economic behaviour and the optimal combination of economic activities in the spatial area. In Heimer's monopoly advantage theory, it is pointed out that the location choice of enterprises is mainly based on three criteria: cost minimization, Proximity to the market; Get agglomeration economy. The classical location theory originated from the representative work of Thu-en, a German economist, the Relationship between Isolated Countries and Agriculture and National Economy. The work was published in two volumes, the first in 1826 and the second in 1850. In the book, Du Neng made a detailed analysis of the production layout of his imaginary isolated country -- Germany. In the book, Du Neng not only discussed the layout of agriculture, forestry and animal husbandry in Germany, but also considered the development and layout of German industry at that time. According to the development relationship between agriculture and market in Germany, Du Neng summed up the phenomenon of uneven distribution of agriculture caused by different land prices in Germany, and thus formed the theory of agricultural location. Du Neng for the first time brought the analysis of spatial factors into the distribution of agricultural production and product selection, which played a good role in guiding the development of agricultural production activities in Germany at that time.

3.2 New Economic Geography

The new economic geography initially established the famous "centre-periphery" model based on Dix-it-Stieglitz's (1977) monopoly competition analysis framework (Krugman, 1991). The model assumes that there are only two products in a country: agricultural products and manufactured goods. As the most important factor of production, land determines the spatial distribution of agricultural products under the condition that agricultural products are homogeneous and scale returns remain unchanged. In contrast, the manufacturing industry uses a smaller scale of land for production and can gain more benefits with the expansion of production scale, which has economies of scale. Because of the existence of such economies of scale, the production of manufactured

goods can be carried out only in a few areas, thus achieving industrial agglomeration. Krugman promoted and expanded the "D-S" model by extending the two-region model to multi-region and continuous space. He believed that in the multi-region model, with the increase of spatial selection and expansion of economies of scale, more and larger clusters could appear. Krugman introduced space theory into the analysis of traditional theories of international trade, expanded the research field of trade and agglomeration by considering international specialization, industrial agglomeration and trade liberalization, and also adapted to the needs of international trade development in the context of global integration.

3.3 Theoretical Framework

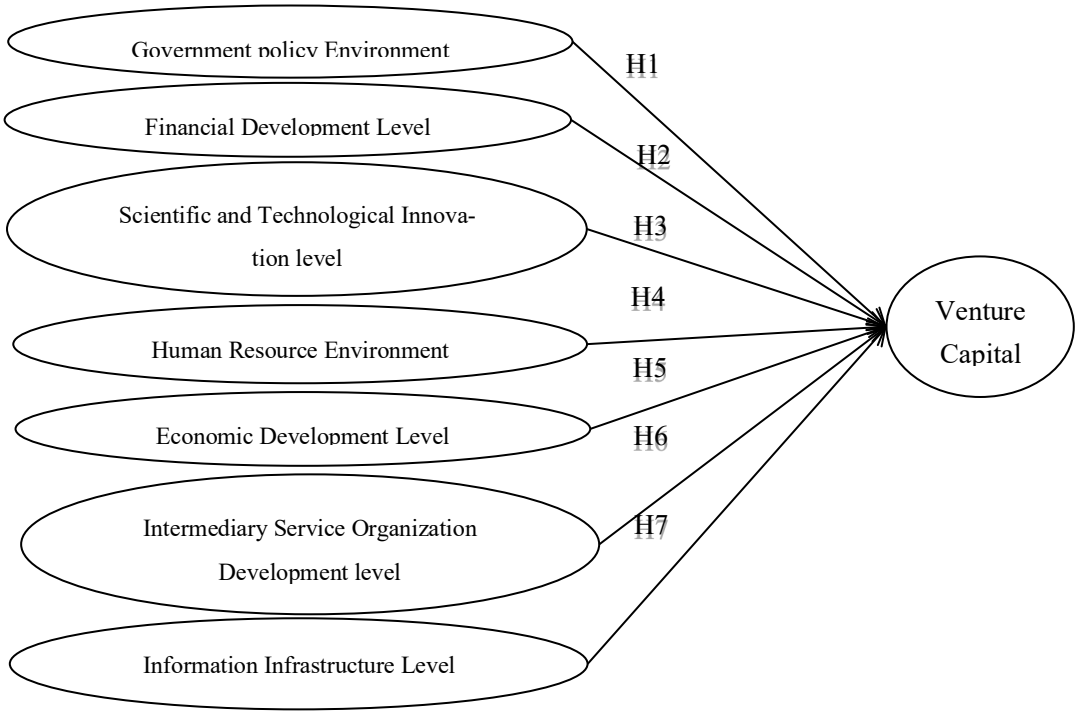

Figure 1 Theoretical Framework

This research constructs the influencing factor index system of the development of venture capital in the Pearl River Delta region from seven aspects: government policy environment, financial development level, scientific and technological innovation level, human resource environment, economic development level, intermediary service organization development level and information infrastructure level.

4. Conclusion

It can be seen from the comprehensive research at home and abroad that there is a lot of research on the development of regional venture investment, including the location selection of venture investment, the environmental influencing factors of venture investment, and the development of venture investment. The research on location selection of venture capital mainly focuses on some areas with developed venture capital, and prefers technology and finance in location selection. The research on the influencing factors of venture capital is relatively mature. Domestic and foreign scholars mainly conduct in-depth research on the development of regional venture capital from the aspects of economy, policy, science and technology, and talent, and the effects

of the influencing factors in different regions are also different. Macro environment is the key external element in venture capital research, which interacts with the venture capital industry. On the one hand, venture capital activity is embedded in the external system and shaped by the institutional environment; on the other hand, venture capital is also an important link in the economic ecology and one of the driving forces of economic growth and social innovation. Based on the above literature analysis, this study believes that we can focus on these two aspects, which are embodied in.

4.1 The Spatial Distribution Pattern of Venture Capital

In terms of the spatial distribution law of venture capital, the spatial distribution pattern of Venture capital activities in China is multi-centre hierarchical and scale, mainly concentrated in a few big cities, manifested as the three-centre pattern of Beijing, Shanghai and Shenzhen (Zhang Haiyan, 2015). By analysing the spatial distribution of Venture capital in China based on the location and network of venture capital, Beijing, Shenzhen and Shanghai are still the leading venture capital centres (Pan, Zhao and Wojcik, 2016). To sum up, no matter what scale of research, the distribution of venture capital is highly concentrated in a few developed regions, which has a certain universality.

4.2 Location Characteristics of Venture Capital Enterprises

In addition, different types of venture capital enterprises have different location characteristics. Traditional Private Equity funds are mostly located in financial clusters because their investment targets are mostly mature companies. Other venture capital institutions are mainly concentrated in high-tech industrial agglomeration areas, because start-ups and high-tech enterprises are concentrated here (Bender and Lutz, 2010). Different ownership of venture capital institutions also has different distribution. For example, in Beijing, foreign venture capital institutions are mostly distributed in CBD area, while Chinese venture capital institutions are mostly distributed in financial street area. Relatively speaking, private venture capital institutions are more dispersed (Xu Yiqing, Pan Fenghua and Jiang Xiaoyu et al., 2016). Studies have also shown that regional cultural differences also have a significant impact on the layout and investment behaviour of venture capital enterprises (Liu and Chen, 2014).

Acknowledgment

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors. The author declares no potential conflicts of interest with respect to the research, authorship and/or publication of this article.

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