The Impact of Geographic Distance between Venture Capital and Start-ups on Operating Performance

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Abstract. China has a vast territory, and the development scale of venture capital varies significantly among different regions. The geographical distribution of venture capital is unbalanced, which makes it difficult for venture capital to choose to invest in local enterprises or cross-regional investment. Many studies have shown that geographical distance is related to the formation of social networks, the strength of information asymmetry and the amount of transaction costs. Therefore, depending on geographical distance, venture capital will face different investment situations, investment costs and investment returns, and entrepreneurial enterprises will therefore receive different levels of supervision, value-added and post-investment management services. Therefore, this paper analyses the impact of geographical distance between VCs and start-ups on the operating performance of start-ups from a unique geographical distance perspective, and takes relevant data of listed start-ups from 2009 to 2019 as samples for empirical test. The study finds that the closer the geographical distance between VCs and start-ups, the higher the short-term operating performance of start-ups. Geographical distance has an insignificant effect on the long-term performance of startups. In addition, poor internal control of start-ups will weaken the positive impact of geographical proximity on operating performance of start-ups. **Keywords:** Venture capital, Geographical distance, Internal control, Data analytics.

1 Introduction

National Venture Capital Association (NCVA) defines venture capital as: "Venture capital is a kind of equity capital invested by professional financiers in enterprises with rapid development and huge competitive potential." Venture capital can not only provide financial support for enterprises, but also provide value-added services for enterprises. It has made a great contribution to the development of emerging enterprises in the high-tech field and is the driving force of technological innovation and development. However, there are still many problems in the development process of venture capital. For example, venture capital will encroach on the interests of minority shareholders for its own interests. Venture capital promotes immature start-ups to go public ahead of time in order to gain reputation, resulting in significant decline in the operating performance of start-ups after IPO. Venture capital distorts stock prices for high returns and increases business risks of start-ups. Therefore, whether the post-investment management and value-added services of venture capital really have a positive impact on enterprise performance needs to be further studied.

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Moreover, venture capital has a two-way matching process, which will be affected by geographical distance. For example, venture capital has a local bias, and the headquarters of start-ups are often established in cities with more venture capital institutions [1, 2]. Geographical distance is related to the investment direction of venture capital institutions and the establishment of entrepreneurial enterprises, which is of certain importance to both parties. Furthermore, China has a vast territory, and venture capital is not evenly distributed geographically. Therefore, it is difficult for venture capital to choose to invest in local enterprises or cross-regional investment. Geographical proximity can increase the communication between venture capitalists and entrepreneurs, which is conducive to the establishment of good social relationships. It can also ease the degree of information asymmetry between venture capital institutions and start-ups and reduce the cost of venture capital institutions in information collection, participation in corporate governance and supervision. This shows that it is very important to analyze the impact of venture capital on operating performance of start-ups from the perspective of geographical distance. Therefore, this paper takes the relevant data of listed start-ups from 2009 to 2019 as samples to study the impact of geographical distance between venture capital institutions and start-ups on the operating performance of start-ups.

The research innovation of this paper is reflected in that, on the one hand, there is a two-way selection relationship between venture capital and entrepreneurial enterprises. Therefore, this paper takes the relationship and behavior of venture capitalists and entrepreneurs as the starting point to carry out research and expand the research field of venture capital. On the other hand, the impact of venture capital on enterprise performance is usually explored from the perspective of venture capital characteristics or corporate governance. However, this paper studies the impact of venture capital on operating performance from the unique perspective of geographical distance. Specifically, based on the principal-agent theory and social network theory, this paper reflects the relationship between venture capitalists and entrepreneurs and speculates their behaviors through geographical distance, thereby provide a new perspective for the study of the impact of venture capital on entrepreneurial enterprises.

It is also of great practical significance to study the impact of venture capital on enterprise performance: First, this paper helps entrepreneurial enterprises correctly understand the impact of venture capital on enterprise performance, thereby maximize the positive role of venture capital on enterprise development. Second, this paper reveals the influence mechanism of venture capital on entrepreneurial enterprises, promoting the government to establish a reasonable and effective supervision mechanism, and promoting the healthy development of venture capital industry. Thirdly, this paper provides reference for local government to attract venture capital according to the development level of local economy and technology, so then promote local economic and technological innovation and rapid economic development.

The research framework of this paper is as follows. The first section is the introduction, which introduces the research background and research value. The second section is a literature review, which expounds the research on geographical distance and venture capital. The third section is theoretical analysis. Based on classical theory, this paper analyzes the influence of geographical distance on operating performance of entrepreneurial enterprises. The fourth section is the research model. After determining the selection of sample data, the empirical model is constructed. The fifth section is the empirical results. Descriptive statistics, multiple regression analysis and robustness test were carried out on the research data. The sixth section is the research conclusion. The conclusions of this paper are summarized, and relevant suggestions are put forward. Finally, acknowledgments and references.

2 Literature Review

French first discovered that investors would invest most of their funds in the financial market of their own countries, showing the phenomenon of geographical proximity to investment, and called this phenomenon “the mystery of local preferences". Follow-up studies also show that investment management companies show a strong preference for local enterprises, information asymmetry may promote the preference for geographically adjacent investment [1, 3] , and the headquarters of start-ups are often located in regions with more investment management companies, banking institutions and large institutional fund managers [2].

The short travel time between investors and investees will also significantly increase the possibility of investment, and the geographical proximity will affect the possibility of completing a round of financing [4, 5]. Geographical proximity can increase the amount of venture capital investment and strengthen the participation of venture capitalists in corporate governance through the board of directors [6]. The farther the geographical distance is, the less the investment amount will be, the later the investment time will be, and the less opportunities will be available for venture capital to participate in corporate governance after the investment [7]. Bernstein et al. also put forward that venture capitalists’ participation in the management of venture companies can enhance the innovation of the invested companies and increase the possibility of successful exit of venture capital. The direct flight can reduce the travel time of venture capital to the investee company, thereby increasing the frequency of visiting the investee company, helping to establish a better relationship with the management team, and improving the understanding of the investee company [8].

In terms of transaction costs, fund managers earn an average additional return of 2.67% per year on their local investments (assets within 100 km of the fund’s headquarters) relative to non-local investments, and geographical proximity reduces travel time and monitoring costs [9]. Tian also pointed out that when there is a long geographical distance between the venture capital firm and the company it is investing in, venture capitalists are relatively likely to raise multiple rounds, with shorter periods between rounds. When start-ups stay away from venture capital institutions, multiple rounds of installment financing have a positive impact on the operating performance of startups in the IPO year and the survival rate after IPO [10]. Therefore, phased investment can alleviate the problems of information collection cost, negotiation cost, management cost and supervision cost caused by geographical distance. Reputation mechanism can also reduce the time cost of acquiring information related to start-ups caused by information asymmetry [1].

From the perspective of social communication, in Chinese culture, coming from the same town and cultural background is a very important social bond [11]. People can build network relationships through direct contact, offline contact, face-to-face communication and other social ways. The closeness of geographical relationship between people can indicate that the closer the geographical distance, the stronger the social relationship [12]. Due to geographical proximity, venture capitalists and local business executives may operate in the same circles and have access to private information [9].

Literatures that study the impact of venture capital on entrepreneurial enterprise performance from the perspective of geographical distance pay more attention to the characteristic factors of venture capital and the content of the investment process, such as the reputation, scale, investment amount, investment time and investment rotation of venture capital. These influence mechanisms are established with venture capital as the main body. However, this paper takes entrepreneurial enterprises as the main body, studies the influence of the internal control of entrepreneurial enterprises on the relationship between geographical distance and enterprise performance, and explores a new influence path of venture capital on entrepreneurial enterprise performance.

3 Theoretical Analysis

Many studies have shown that geographical distance is related to the formation of social network, the degree of information asymmetry and the amount of transaction costs. The closer the geographical distance is, the lower the time, labor and management costs for venture capital to participate in the corporate governance of start-ups, and the easier it is for venture capital to obtain the business information of start-ups, ensure the quality of information acquisition, save the cost of information collection, and reduce the risks caused by information asymmetry. Moreover, the closer the geographical distance, the more likely to form a strong relationship network between venture capitalists and enterprise executives, the easier for both sides to reach a consensus on cooperation, committed to improving enterprise performance and achieving win-win results. Therefore, this paper mainly carries out a detailed theoretical analysis from the three perspectives of social relationship network, information asymmetry and transaction cost, so as to put forward the research hypothesis. In the further analysis, this paper studies the influence of internal control quality on the relationship between geographical distance and firm performance. Because “high-quality enterprises" are easy to attract investment from “high-quality venture capital", enterprises with high internal control quality, excellent corporate governance and strong development ability are more likely to gain the favor of high-quality venture capital.

3.1 Geographical Distance and Enterprise Performance

Based on the theory of social relation network, social relation can be divided into strong relation and weak relation [12]. When geographically close, venture capitalists can easily develop close social relationships with executives, such as friends, alumni and colleagues. The frequency and degree of interaction between the two sides are higher, and it is easier to form a strong relationship [13]. This can improve the trust and loyalty of both parties, and strengthen the degree of cooperation due to human relations [14]. Informal control measures such as shared values, culture and trust can make up for the defects of formal control and curb the emergence of opportunistic behaviors [15]. To align the interests of venture capital institutions with the interests of start-ups, creating corporate value and improving corporate performance together. In addition, Hite and Hesterly [16] believe that in the initial stage of new enterprises, strong relationship network is the main provider of enterprise resources. The closer the geographical distance is, the easier it is for venture capital institutions to form a strong relationship network with entrepreneurial enterprises and to provide capital sources, human resources and market resources for enterprises, which have a positive impact on enterprise performance [17].

The venture capital market is characterized by a high degree of information asymmetry, and entrepreneurial enterprises will have information disclosure is not timely, information disclosure is not standard, information disclosure is insufficient. Geographic distance can significantly reduce the risk of start-ups and investment institutions between asymmetric information situations. The closer geographic distance, venture capital can better access to the enterprise the management information, more comprehensive understanding of the real situation of the enterprise, more accurate evaluation of enterprise growth, more timely to provide resources and value-added services, so as to boost enterprise’s performance [6]. In addition, geographical distance promotes venture capitalists to establish social relations with enterprise executives. Driven by trust, reciprocity, cooperation and other factors, they will ease the impact of information asymmetry through closer communication [5], so as to promote the establishment of common development goals and create enterprise value.

Based on the theory of transaction cost, transaction cost is the price that people pay for voluntary communication and cooperation in a certain social relationship. Geographical

proximity can reduce the cost of venture capital firms' participation in corporate governance and oversight functions. The fixed transaction costs in venture capital behaviors are information costs, negotiation costs and supervision costs. Because of travel expenses and time, these transaction costs will increase with the extension of geographical distance [5]. The longer the geographical distance is, the more human, material and financial resources will be spent by venture capital to participate in the board of directors, major decision-making meetings and corporate governance [7], which is not conducive to venture capital's monitoring of entrepreneurial enterprises and the improvement of corporate performance. Therefore, the closer the geographical distance is, the more willing venture capital is to participate in corporate governance, and it is easier for start-ups to get the support of venture capital, thereby improve enterprise performance.

In this regard, this paper puts forward the following hypotheses:

Hypothesis 1: The closer the geographical distance between venture capital institutions and start-ups is, the higher the operating performance of start-ups will be.

3.2 Influence of Internal Control

Internal control refers to the system and measures that enterprises adopt self-management, restraint, adjustment and control in order to ensure the efficiency of daily business activities. First, a sound and effective internal control is conducive to the establishment of a salary incentive system, a sound performance appraisal system, and a sound employee feedback system, so as to improve the work enthusiasm of employees, so as to promote the improvement of enterprise efficiency and operating performance [18]. Second, a sound and effective internal control is conducive to timely and complete disclosure of information. Good information disclosure is conducive to improving the reputation of enterprises [19], so as to obtain excellent market evaluation and positive market feedback, and further improve operating performance. Thirdly, a sound and effective internal control is conducive to reducing the self-interested and opportunistic behaviors of senior executives, thereby reducing their negative impact on corporate performance [20]. In general, high quality internal control has a positive impact on the operating performance of enterprises.

From the perspective of venture capital institutions and entrepreneurial enterprises, geographical proximity brings three advantages, and high-quality internal control of entrepreneurial enterprises can strengthen the positive influence of these three advantages.

First, geographical proximity has information advantages. The closer the geographical distance, the less asymmetric the information. For venture capital institutions, the closer the geographical distance is, the more detailed they can understand the operating conditions and internal governance level of entrepreneurial enterprises, to choose to invest in entrepreneurial enterprises with better internal management and more potential development. For entrepreneurial enterprises, due to the geographical proximity, venture capital can provide consulting functions for them, enabling them to quickly understand the external market information, to make timely adjustments to internal control in accordance with market requirements and policies and regulations, and release the signal of perfect management and stable operation to the outside.

Secondly, geographical proximity has supervisory advantages. The closer the geographical distance, the easier it is for venture capital institutions to monitor start-ups. By supervising the enthusiasm of enterprise executives and the correctness of decision-making, we can reduce the possibility of enterprise executives carrying out self-interest behavior, reduce the possibility of enterprise executives being punished by regulators for violations. Good internal control environment and working atmosphere can assist venture capital to play a supervisory role. In addition, high-quality internal control can also restrain the opportunism of venture

capital and make it more effective in providing value-added services for entrepreneurial enterprises.

Finally, geographical proximity has managerial advantages. The closer the geographical distance, the smaller the cost of venture capital institutions to participate in corporate governance. Venture capital institutions are more willing to participate in the corporate governance of entrepreneurial enterprises by appointing directors, participating in shareholders' representative meetings, and exercising veto power on specific resolutions. If the start-ups have a more complete internal control system, venture capital can quickly grasp the actual operation of the enterprise, thus participating in corporate governance more actively and effectively.

In this regard, the following hypotheses are proposed:

Hypothesis 2: High-quality internal controls in start-ups enhance the positive impact of geographical proximity on operating performance, while low-quality internal controls diminish the positive impact of geographical proximity on operating performance.

4 Research Model

In this paper, relevant data of start-ups listed on the China Growth Enterprise Market from 2009 to 2019 and invested by venture capital institutions before listing are selected as samples. In terms of variable setting, long-term performance and short-term performance are considered in the operating performance of start-ups, and geographical distance is considered the relative distance between venture capital institutions and start-up enterprises. Finally, empirical models are established according to variable setting.

4.1 Sample Selection

The sample of this paper is start-ups listed on the China Growth Enterprise Market from 2009 to 2019 and invested by venture capital institutions before listing. The venture capital data are from the CVSource database, in which, the missing values of the VC city and VC reputation are collected manually, the VC city is mainly checked the registration location of the venture capital institution, the VC reputation is mainly checked the establishment time of the venture capital institution, and the rest of the missing values that cannot be collected manually are deleted. Corporate characteristics and financial data, such as corporate address, asset-liability ratio, total asset turnover, etc. are from CSMAR database, excluding ST and *ST stocks, financial and real estate industry data. Internal control data is also from the CSMAR database. The missing value of the dummy variable is partly because the deficiency of the internal control is not captured, so the missing value of the dummy variable is replaced with 0, that is, there is no defect in the internal control.

Arthurs and Busenitz [21] pointed out that venture capital is unable to exit the investment for a long time after the IPO of start-ups, and they are motivated to continue to actively participate in the management of companies, thus affecting the performance of enterprises. Considering that there is a certain exit time period for venture capital institutions after the listing of start-ups, this paper takes the year of listing and two years after listing as the observation period, so the overall observation period of this panel data is 2009-2021. After removing the mismatched samples, 1371 observation samples (457 start-ups) were obtained.

4.2 Variable Setting

(1) Dependent variable

Operating performance (ROA & TobinQ): Operating performance can be divided into short-term performance and long-term performance. Short-term performance is measured by

Table 1. Variable Definitions.

Variable	Definition
ROA	Net profit divided by the average balance of total assets.
TobinQ	Market value / (Total assets - net intangible assets - net goodwill)
Distance	The value of this variable is 1 if the registration places of venture capital institutions and start-ups are located in the same prefecture-level city or municipality directly under the Central government, and 0 otherwise.
IC	The value of this variable is 1 if there is a defect in internal control, and 0 otherwise.
Occupy	Other receivables divided by total assets.
ATO	Operating income divided by average total assets.
Board	The natural logarithm of the number of directors.
Mshare	The number of management shares divided by the total capital stock.
Lev	Total liabilities at the end of the year divided by total assets at the end of the year.
Owner	The value of this variable is 1 if the venture capital is state-owned venture capital, and 0 otherwise.
Darea	The value of this variable is 1 if the registered place of venture capital is located in Beijing, Tianjin, Shanghai, Zhejiang, Jiangsu and Guangdong, and 0 otherwise.
Joint	The value of this variable is 1 if the venture capital is joint investment, and 0 otherwise.
Gover	The value of this variable is 1 if the venture capital participates in corporate governance, and 0 otherwise.
Reputa	The natural logarithm of working seniority in venture capital.

ROA, because ROA is calculated through the assets and net profit of an enterprise, reflects the input and output performance that has occurred, and represents the operating situation and profit level of an enterprise in the short term. Venture capital has a long-term impact on the operating performance of enterprises [22, 23]. So, this paper also studies long-term performance. Long-term performance is measured by TobinQ , because TobinQ captures the market value of a firm, which reflects investors' evaluation of the firm's current and future business development and their expectations of future profitability levels.

(2) Independent variable

Geographical distance (Distance): a dummy variable for whether the registered places of venture capital institutions and entrepreneurial enterprises are located in the same prefecture-level city or municipality directly under the Central government. If yes, the value is 1; otherwise, it is 0 [6, 7].

(3) Moderating variable

Internal control (IC): a dummy variable of whether there are defects in the internal control. When there are defects in internal control, it shows that the quality of internal control is low, and the variable value is 1, otherwise it is 0.

(4) Control variables

This paper controls the influence of enterprise characteristic factor and venture capital characteristic factor simultaneously. The characteristic factors of an enterprise include Asset-liability ratio (Lev), Total asset turnover (ATO), Number of board members (Board), Management shareholding ratio (Mshare), Major shareholders occupy (Occupy). The characteristic factors of venture capital include Venture capital reputation (Reputa), Venture capital ownership (Owner), Venture capital governance (Gover), Venture capital joint investment (Joint), Core developed economic Area (Darea).

According to the Industry classification of the 2012 edition of China Securities Regulatory Commission, the sample enterprises are divided into 19 industries such as agriculture, forestry, animal husbandry, fishery, mining, manufacturing, etc., to control the industry effect (Industry). According to the listing time of start-ups, to control the Year effect (Year).

4.3 Model Design

To verify hypothesis 1 proposed in this paper, model (1) and (2) are constructed as follows:

$$\mathrm{ROA}_{it}=\alpha_0+\alpha_1\mathrm{Distance}_{it}+\sum\mathrm{Control}_{it}+v_t+u_i+\varepsilon_{it} \quad (1)$$

$$\text{TobinQ}_{it}=\beta_0+\beta_1\text{Distance}_{it}+\sum\text{Control}_{it}+v_t+u_i+\varepsilon_{it} \quad (2)$$

To verify hypothesis 2 proposed in this paper, model (3) and (4) are constructed as follows:

$$\text{ROA}_{it}=\gamma_0+\gamma_1\text{Distance}_{it}+\gamma_2 IC_{\text{it}}+\gamma_3 IC_{\text{it}}\times\text{Distance}_{it}+\sum\text{Control}_{it}+v_t+u_i+\varepsilon_{it} \quad (3)$$

$$\text{TobinQ}_{it}=\delta_0+\delta_1\text{Distance}_{it}+\delta_2 IC_{\text{it}}+\delta_3 IC_{\text{it}}\times\text{Distance}_{it}+\sum\text{Control}_{it}+v_t+u_i+\varepsilon_{it} \quad (4)$$

5 Empirical Results

Through multiple regression analysis, this paper empirically examines the influence of geographical distance between venture capital institutions and start-ups on operating performance. And further analyze the effect of geographical distance on the operating performance of start-ups after the introduction of internal control. Finally, the reliability of empirical results is verified by replacing dependent variables and independent variables.

5.1 Descriptive Statistics

Table 2 is the descriptive statistical results of the variables used in this paper. The proportion of the registered places of venture capital institutions and entrepreneurial enterprises located in the same prefectural-level city or municipality is 0.302. The probability of internal control defects in entrepreneurial enterprises is 0.071; The proportion of state-owned venture capital is 0.201; The proportion of venture capital institutions located in core developed areas was 0.856; The proportion of venture capital institutions jointly investing in entrepreneurial enterprises is 0.652; The proportion of venture capital institutions participating in corporate governance is 0.287; The average shareholding ratio of the management in entrepreneurial enterprises is 34.16%, while the management of some enterprises has no shareholding, and the highest shareholding ratio of the management is 75.63%.

5.2 Analysis of Regression Results

Table 3 lists the results of multiple regression analysis. Column (1) and (2) of this table show the regression results of the main test of model (1) and model (2). The dependent variables are short-term performance (ROA) and long-term performance (TobinQ), the independent variable is geographical distance (Distance), and the rest are control variables. The results show that the regression coefficient between ROA and Distance is 0.006 and significant at the 5% level. After controlling for the influence of other factors on operating performance of start-ups, geographical distance is significantly positively correlated with operating performance. This result means that when the geographical distance between venture capital institutions and start-ups is close, it has a positive impact on the short-term performance of entrepreneurial enterprises, which verifies the hypothesis 1 proposed in this paper. However, geographical distance has no obvious influence on the long-term performance of start-ups. Venture capital will pay more attention to the short-term performance of the invested enterprise rather than the long-term performance in order to get the investment return quickly. In addition, long-term performance involves a long time period and is affected by numerous factors, so the influence of geographical distance may be insignificant. Column (3) and column

Table 2. Descriptive statistics of variables.

Variables	Obs	Mean	Std.Dev.	Min	Max
ROA	1,371	0.078	0.053	-0.404	0.427
TobinQ	1,371	2.226	1.245	0.000	20.440
Distance	1,371	0.302	0.459	0.000	1.000
IC	1,371	0.071	0.257	0.000	1.000
Gover	1,371	0.287	0.452	0.000	1.000
Owner	1,371	0.201	0.401	0.000	1.000
Joint	1,371	0.652	0.476	0.000	1.000
Darea	1,371	0.856	0.352	0.000	1.000
Reputa	1,371	10.570	0.057	10.340	10.660
Occupy	1,371	0.010	0.013	0.000	0.113
ATO	1,371	0.555	0.272	0.050	2.645
Board	1,371	2.089	0.173	1.386	2.639
Mshare	1,371	34.160	21.480	0.000	75.630
Lev	1,371	0.256	0.156	0.011	0.887

(4) of table 3 represent model (3) and model (4), which are the regression results of testing the moderating variables. The results show that the regression coefficient of ROA and Distance is 0.007, which is significant at the 1% level, and the coefficient of IC_Distance is -0.043, which is significant at the 5% level. This indicates that low quality internal controls attenuate the positive impact of geographical proximity on the short-term performance of start-ups, which verifies hypothesis 2 of this paper. However, the impact of geographical proximity and internal controls on the long-term performance of start-ups is not significant.

5.3 Robustness Test

In order to further verify the stability and reliability of the results of multiple regression analysis, this paper adopts the measure method of replacing the independent variable and the measure method of replacing the dependent variable to carry out the robustness test. First, the measurement method of geographical distance is changed to the longitude and latitude distance between the city of venture capital institution and the city of entrepreneurial enterprises, and this distance data is taken as the natural logarithm. The specific calculation formula is as follows:

$$\text{AbsoluteDistance} = \text{Ln}\{6371.004 \times \arccos[\sin(\text{lat}_1)\sin(\text{lat}_2) + \cos(\text{lat}_1)\cos(\text{lat}_2)\cos(|\text{lon}_1 - \text{lon}_2|)]\}$$

Where, lat_1 is the latitude of the location of the venture capital institution, lon_1 is the longitude of the location of the venture capital institution, lat_2 is the latitude of the location of the venture enterprise, lon_2 is the longitude of the location of the venture enterprise. Second, return on equity (ROE) and operating profit ratio (OPR) are used as indicators to measure operating performance. The specific calculation formula is as follows:

ROE = Net profit/average shareholders' equity balance

OPR = Operating profit/operating revenue

Table 4 shows the results of the robustness test. From the table, the regression coefficient of AbsoluteDistance and ROA is -0.001, which is significantly negatively correlated at the 10% level. That is, the closer the actual geographical distance between venture capital

Table 3. Results of multiple regression analysis.

Variables	(1) ROA	(2) TobinQ	(3) ROA	(4) TobinQ
Distance	0.006**	0.004	0.007***	-0.011
	(2.13)	(0.05)	(2.70)	(-0.15)
IC			-0.011*	-0.060
			(-1.83)	(-0.45)
IC_Distance			-0.043**	0.264
			(-2.52)	(0.96)
Occupy	-0.274**	0.777	-0.259**	0.710
	(-2.51)	(0.31)	(-2.44)	(0.28)
ATO	0.066***	0.007	0.065***	0.014
	(8.56)	(0.04)	(8.68)	(0.07)
Board	0.010	-0.162	0.014*	-0.169
	(1.27)	(-0.97)	(1.76)	(-1.00)
Mshare	0.000**	-0.003**	0.000**	-0.003**
	(2.09)	(-2.43)	(2.01)	(-2.45)
Lev	-0.164***	-1.454***	-0.165***	-1.454***
	(-12.56)	(-5.36)	(-12.68)	(-5.35)
Owner	-0.004	-0.048	-0.003	-0.053
	(-1.18)	(-0.57)	(-0.93)	(-0.63)
Darea	0.001	0.157***	0.001	0.157***
	(0.35)	(2.63)	(0.46)	(2.62)
Joint	-0.003	0.015	-0.003	0.014
	(-1.12)	(0.19)	(-1.15)	(0.19)
Gover	-0.003	-0.021	-0.004	-0.017
	(-1.03)	(-0.29)	(-1.39)	(-0.23)
Reputa	-0.024	-1.095	-0.022	-1.127
	(-1.04)	(-1.31)	(-0.95)	(-1.34)
Constant	0.314	13.773	0.287	14.110
	(1.25)	(1.55)	(1.15)	(1.59)
Industry	YES	YES	YES	YES
Year	YES	YES	YES	YES
R-squared	0.280	0.183	0.296	0.183
Observations	1,371	1,371	1,371	1,371
t-statistics in parentheses *** p<0.01, ** p<0.05, * p<0.1				

institutions and start-ups, the higher the operating performance of the entrepreneurial firm, still validating hypothesis 1 of this paper. The regression coefficient of Distance and ROE is 0.009, and there is a significant positive correlation at the level of 5%. The regression coefficient Distance of OPR and is 0.017, showing a significant positive correlation at the level of 5%. The results show that there is a significant positive correlation between geographical distance and operating performance of enterprises. Hypothesis 1 is still valid in this paper.

Table 4. Results of the robustness test.

Variables	(1) ROA	(2) ROE	(3) OPR
AbsoluteDistance	-0.001*		
	(-1.79)		
Distance		0.009**	0.017**
		(2.21)	(2.13)
Occupy	-0.272**	-0.435***	-0.941***
	(-2.49)	(-2.71)	(-2.64)
ATO	0.066***	0.105***	-0.047*
	(8.51)	(7.35)	(-1.86)
Board	0.010	0.021	0.049*
	(1.24)	(1.45)	(1.84)
Mshare	0.000**	0.000**	0.000
	(2.11)	(2.11)	(0.90)
Lev	-0.164***	-0.097***	-0.437***
	(-12.56)	(-3.14)	(-8.29)
Owner	-0.004	-0.008*	-0.024**
	(-1.20)	(-1.87)	(-2.23)
Darea	0.001	0.001	0.005
	(0.29)	(0.26)	(0.51)
Joint	-0.003	-0.007*	-0.010
	(-1.10)	(-1.72)	(-1.36)
Gover	-0.003	-0.003	-0.000
	(-1.09)	(-0.62)	(-0.06)
Reputa	-0.026	-0.078**	-0.053
	(-1.11)	(-2.33)	(-0.72)
Constant	0.338	0.837**	0.742
	(1.35)	(2.35)	(0.97)
Industry	YES	YES	YES
Year	YES	YES	YES
R-squared	0.280	0.177	0.240
Observations	1,371	1,371	1,371
t-statistics in parentheses *** p<0.01, ** p<0.05, * p<0.1			

6 Conclusions

This paper mainly studies the impact of venture capital on operating performance from the perspective of geographical distance. The results show that the geographical proximity between venture capital institutions and entrepreneurial enterprises can significantly improve the operating performance of start-ups, which means that the relationship between venture capitalists and entrepreneurs will indeed affect the support of venture capital to start-ups, and thus affect the operating conditions of entrepreneurial enterprises. However, geographical proximity can only improve the short-term performance of start-ups but has no significant impact on long-term performance. On this basis, this paper further studies the influence of internal control quality of entrepreneurial enterprises and finds that high-quality internal

control will strengthen the positive influence of geographical proximity on the operating performance of start-ups, while low-quality internal control will weaken the positive influence of geographical proximity on the operating performance of start-ups.

According to the research results of this paper, the following suggestions are put forward: First, for venture capital institutions, in order to alleviate the degree of information asymmetry in the process of venture capital and quickly establish a good reputation, they can choose to invest in local start-ups. Second, for start-ups, when the founder chooses the registration place, he can consider the reputation, ability and number of venture capital institutions, and choose the registration place of venture capital institutions with higher reputation and stronger ability. Third, local governments should take practical measures to attract high-quality venture capital in order to cultivate emerging industries, stimulate local employment demand and improve local economic development level. The government can optimize the local investment environment and promote the development of venture capital actively and steadily by issuing preferential tax policies, providing subsidies for special investment projects and providing credit guarantees.

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