

Review of Relationship between Business Innovation and Geographic Areas in China

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Abstract. Business innovation plays an essential role in its development. There are various factors affecting business innovation. Business innovation plays a vital role in its development. There are many factors that affect business innovation. Based on the existing research results, this paper sorts out and summarizes the research results of geographical characteristics, business innovation and the relationship between the two. The research results show that geographic proximity can promote business innovation through knowledge and technology spillovers, and multi-dimensional proximity and combination models such as cognition and institutions will bring about differences in corporate innovation performance. This article can help investors evaluate the above factors, determine the direction of investment, and make the right investment to promote economic development. This can also encourage the growth and expansion of potential SMEs.

Keywords: Business Innovation, Geographic Areas, China.

1. Introduction

1.1 Research Background

China is an enormous country that occupies an area of the 3795000-meter square. Thus, within the boundaries of China, there are a large variety of landscapes, from the marine-rich coastal areas to the vast prairie that dominates the north end of the country. Of course, these dissimilar landscapes offer various natural resources and opportunities for both entrepreneurs and local citizens. For instance, coastal areas offer approachable access to sea freight transportation and marine species supply, whereas grassland areas offer a great opportunity for herding and tourism. There should be no reason to doubt the fact that in China's rapidly growing economy, regional differences have played a significant role in shaping local businesses and entrepreneurs' interests. Enterprising (Entrepreneur spirit) is defined here as the combination of an entrepreneur's spirit and techniques. In other words, it is expressing how an entrepreneur organizes and manages his enterprise or company. It is a vital but invisible component of entrepreneurship. Through our research, we have acknowledged a close interrelationship between geographic landscapes and enterprising in those distinct areas. And entrepreneurs from the same regions tend to express similar characteristics and personal interests in certain fields or areas. We can see this phenomenon in China's developmental history. Due to its proximity to coastal areas and shorelines, Shanghai rapidly grew into one of China's most important economic centers. Since Shanghai has dominated the sea freight transportation, the majority of foreign companies have to go through Shanghai to reach China. Thus, entrepreneurs in Shanghai tend to be more globalized and more interested in coastal businesses. These similar relationships between geographic regions have also occurred in other areas like Mongolia's prairie and China's vast plain. Thus, analyzing these inconspicuous relations will offer us an in-depth knowledge of enterprising in different regions and know which businesses are more profitable to invest in.

1.2 Research Significance

China's Covid-19 epidemic situation is being controlled and the majority of people in China now can live their lives as before. In this manner, people now have money to invest and are actively looking for business opportunities. Previous papers, however, only focus on one distinct area's influence over its local businesses and entrepreneurs. In our paper, we are going to analyze different geographic regions and how their natural resources and cultures differ. In addition to that, we will focus on the innovation of businesses in terms of entrepreneurship. How these innovations are formed? How the process of innovation-decision is carried out? These questions will be answered in our research paper. And lastly, we will further interpret and analyze the link between entrepreneurship and geographic regions. For instance, how does geographic culture influence entrepreneur decisions, and how do geographic locations affect business innovations. This paper, unlike others, will incorporate three primary regions in China-prairie, coastal areas, and plain. It will provide a reference for financial asset investment in these primary areas of China's economy, which will promote China's economic growth, recover China's economy to its progressing speed before the outbreak of Covid-19, help with poverty region's economy to be in line with the advancing speed of China's economy overall.

1.3 Paper Organization

This article will be divided into three parts. For the first part, we will summarize the geographic location and its impacts on local culture. Second, we will focus on business innovation in terms of entrepreneurship. In the end, we will combine the two topics mentioned above to give a conclusion about their inner relationship, i.e. how geographic location affects business innovation.

2. Literature Review

2.1 Research on Geographic feature

2.1.1 China's waterway system and advantage

China is an enormous country with a long stretching shoreline that extended for approximately 32000 kilometers. Along its stretching shoreline, there are 1800 estuaries with 60 of them meeting the 100 kilometers standard of being classified as rivers; the Yangtze river, The Yellow River, and The Pearl River all congregate along the shoreline [1]. These estuaries and rivers, providing abundant and helpful natural resources, gave rise to a number of first-tier cities in China like Shanghai and Shenzhen. However, due to China's capacious territory, the waterway system varies tremendously from north to south. The climate differences between the north and the south part of China are one of the primary influencers of the dissimilar waterways in these two areas. The northern part of China is a cold temperate continental monsoon climate area; whereas, the southern part of China is a temperate continental monsoon climate area. One significant example of the northern part of China is the Songliao River Basin. The area endures an extremely cold winter and a tepidity summer[2]. The Yangtze River is an example of the southern part of China. The area has a distinct seasonal difference and moist frequent rain[2]. However, even though the climatic differences within our nation provide us with sufficient natural resources, its negative effect is catastrophic: it may lead to flooding and other natural disasters[2].

2.1.2 China's Glacier Distribution

Within the geographic territory of China, there is approximately 46377 strip of glaciers which account for 59425 kilometers square of areas. These glaciers are mainly concentrated in two distinct areas, the Tarim Basin and the Yarlung Zangbo River, containing 43% and 35% of glaciers respectively[3]. To be more specific, a majority of glaciers are concentrated in five specific areas: the Mount hantengri-Tomur area of the Teen Shan mountains, the Mount Qomolangma area of the Himalayas, the Mount Qogir area of the Karakoram mountains, the Kunlun Peak area of the Kunlun

mountains, and eastern main peak area of the Nyainqentanglha range[4]. Research has shown that the formation of glaciers depends highly on water and rainfall. Those areas mentioned above are known to have excessive rain and abundant water, thus making them ideal locations for glaciers to form. The Kunlun mountain range experience 300~900 mm of rainfall annually, while the Nyaingentaglha range experience 2500~3000 mm of rainfall annually. The Nyaingentaglha range is the best representation of where the glaciers benefit the most from excessive water resources. Even though the annual rainfall of the Kunlun mountain range is significantly lower than that in the Nyaingentaglha range, its ideal geographic height allows it to contain 20.3% of China's glaciers[3]. However, these glaciers are vanishing as global warming has become a more threatening phenomenon in recent years. The global temperature is experiencing a staggering increase since 1980. The temperature increased from 16 degrees Celsius in 1960 to 16.9 degrees Celsius in 2009[5]. Furthermore, research stated that with a 1 degree Celsius increase, there should be a corresponding 47% increase in precipitation. However, the increase in precipitation from 1960 to 2009 did not meet this expectation number. The annual precipitation fluctuated between 203.6 mm to 217.4 mm during these years[5]. Thus, resulting from this impairment between temperature increase and precipitation is a 10.1% decrease in glaciers proportion[5].

2.1.3 China's Mountain Ranges

China's geographic terrain is mostly occupied by mountainous regions, to be more specific, 74.9% of China's geographic area is mountainous regions[6]. The classifications of mountain ranges are shown below: 1) Out of this massive occupation of mountainous regions, there are 634 mountains, taking up 35.3% of the national geography; 239 plateaus, taking up 27.2% of the national geography; 411 hills, taking up 12.4% of the national geography[6]. Coexisting with the mountain ranges is the vast vegetation that takes up the slope of the mountains. The Qinling Mountain ranges are the most significant illustration of the coexistence of both vegetation and mountain ranges. The vegetation coverage percentage in Qinling mountain is 84%, with vegetation covering 75% of the north slope and vegetation covering 86% of the south slope[7]. Research has also shown a trend that low-altitude areas have a lower percentage of vegetation coverage while the high altitude districts, on average, have a higher percentage of vegetation coverage. Altitudes ranging from 800m-3000m have approximately 80 percent of vegetation coverage in both the north and south slope of the Qinling mountain ranges[7]. Similar to glaciers, the vegetation in the Qinling mountain ranges was also affected by global warming, but, unlike glaciers, vegetation benefited from this global temperature rise. The vegetation in the Qinling mountain ranges increased at a rate of 0.027/10a, and 70.15 percent of areas in the Qinling mountain ranges have shown increased in vegetation coverage[7].

2.2 Research on Business Innovation

Currently, there is a growing amount of research on business innovation. From the CNKI database, the paper searched the literature published in recent years about the keywords of 'business innovation'. We have browsed hundreds of factors affecting business innovation, downloaded more than 50 pieces of literature concerning business innovation, and studied more than 20 articles. In general, business innovation is mostly influenced by three categories.

2.2.1 Organizational Structure

The organizational structure of an enterprise is a system of division of decision-making power and a division of labor and cooperation system of various departments. The organizational structure should allocate the enterprise management elements, determine its scope of activities and form a relatively stable scientific management system based on the ultimate goal of the business. Yu Maojian states that a centralized organizational structure can achieve managerial economies of scale and scope, while a decentralized one can improve the efficiency of information processing, reduce the scope of managerial opportunism and promote decision-making ability. Therefore, he concludes that the long-term orientation of a centralized R&D organization is more conducive to businesses' utilization of supplier innovation. In contrast, the market orientation of decentralized R&D organizations is more

conducive to businesses' utilization of customer innovation[8]. Knowledge transfer inside an organization also plays an essential role in business innovation. It refers to sharing or disseminating knowledge and providing inputs to problem-solving. As Zhang Guanglei points out, knowledge transfer is the premise and foundation of innovation. Companies can increase knowledge stock, optimize knowledge structure and improve knowledge quality by knowledge transfer, thereby providing a knowledge base for the improvement of enterprise innovation[9]. Li Ziye and Feng Genfu investigate the interrelationship between knowledge transfer and innovation in a more detailed way by putting forward several hypotheses. They point out that mandatory knowledge transfer mechanisms pursue compliance and efficiency through mandatory control means such as systems and regulations. This rigorous, formal, and standardized knowledge transfer mechanism can reduce the waste of time and other resources because it has clear goals and directness. As for non-mandatory knowledge transfer mechanisms, it pursues autonomy, trust, and recognition, mainly in the form of free and close communication, teamwork, and discussion. Mutual provision of knowledge and advice, interpersonal interaction, and experience sharing can stimulate innovation inspiration, and motivation as well as use the value created but the transferred knowledge to improve innovation performance. There is a coordinated and complementary relationship between them. Combining the two mechanisms will bring the best results to the business. They also discover that when the organizational structure is highly formal, the use of non-mandatory knowledge transfer mechanisms should be restrained, and mandatory mechanisms should be used more, and vice versa[10].

2.2.2 Innovation Incentive

With the continuous development of the market economy and the intensification of talent competition in various industries, how enterprises can fully motivate existing employees to work has become a hotspot. Under the condition of constant improvement of the basic system of the business, many businesses have established employee incentive systems and relevant restraint supervision mechanisms to manage human resources, providing an effective institutional guarantee for companies to improve their competitiveness. Reasonable incentive mechanisms can provide benefits for employees from both spiritual and material aspects. Yang Bo and Wang Linhui analyze how Accelerated Depreciation and Government Subsidy affect innovation performance. They state that both policies can effectively improve the innovation of China's A-share listed businesses. Acceleration Depreciation has a greater effect on the economic efficiency of listed companies than high-quality innovation output, while Government Subsidy works the opposite[11]. Fiscal and tax incentives are mainly proposed by the government, which is a special provision to support the development of certain specific regions, industries, and enterprises. Lu Linlin points out that these incentives promote business innovation and enable businesses to develop better. Meanwhile, under this condition, competition among enterprises can also be transformed into benign competition, and such competition can also promote the development of the whole industry and society to a certain extent[12]. Tian Lijuan employs endogenous economic growth theory and market failure theory to investigate how tax incentive influences business innovation. She discovers that this incentive raises the expected benefits and mitigates the financial risk of investing in technological innovation. It also affects business capital supply and labor supply and demand[13].

2.2.3 Resource

All sorts of resources also play an important role in business innovation. Resources can be divided into natural resources, technology resources, and external and internal resources. Tang Weizong analyses how water affects business innovation. He points out that changes in water resources caused by human activities can improve business innovation effectively. In general, it has a better promotion in the manufacturing industry, mature enterprises, and firms enjoying low government subsidies. Besides, abundant water resources attract population, which increases human capital and gathers lots of businesses, thereby forming a comprehensive agglomeration economy based on resources and knowledge[14]. Technology resources also affect innovation performance. Gao Yue states that the innovation performance of enterprises with government technology allocation is better than those that

don't[15]. Dai Lulu uses quantitative methods to study the impact of regional innovation resources on enterprise innovation capabilities. She finds out that the elements of innovation resources have a positive impact on business innovation. Different regions and different elements have different influences on innovation. Each element has a complementary effect on the company's innovation ability[16].

2.3 Research on Business Innovation and Geographic Features

2.3.1 Geographical Factors

As the direct service object of enterprise technological innovation, customer represents the development direction of market demand and is the basis of realizing enterprise innovation benefits. When the enterprise's sales revenue is concentrated in one or a few large customers, the demand of large customers is directly related to the success or failure of enterprise innovation. Therefore, it is of positive theoretical and practical significance to explore the influence and internal mechanism of big customers on enterprise technological innovation.

However, the academic circles have not reached a unanimous conclusion on the above topics, and formed two opposing views of guidance and plunder. The guiding point of view is that big customers transfer market demand information and technical knowledge to enterprises, thus promoting technological innovation of enterprises; the predatory view holds that big customers take advantage of their advantageous negotiating position to plunder the enterprise's innovation income and the resources available for innovation, thus inhibiting the enterprise's technological innovation. To find out the reasons, existing studies mostly use the number of customers [17], the ratio of the sales revenue of key customers to the total revenue of enterprises [18-19], the ratio of the sales revenue of key customers to the total cost of customers [20] and other indicators to study the relationship between key customers and enterprise technological innovation from the static perspective of customer concentration. However, it is difficult to directly observe the information exchange and transaction between customers and enterprises, so it is difficult to describe the dynamic impact of big customers on enterprises' technological innovation in terms of knowledge spillover or resource plunder. In order to remedy this defect, this study combines the geographical economics theory and introduces the geographical distance between the big customer and the enterprise, namely the geographical proximity of the big customer, to dynamically describe the information exchange and transaction between the big customer and the enterprise, and then test the role of the big customer in the process of enterprise technological innovation.

2.3.2 Proximity

In 1890, Alfred Marshall, a British economist, first proposed the concept of external economy, believing that the spatial geographical proximity between enterprises can help enterprises obtain external economic advantages, that is, enterprises can obtain high-quality human resources, form professional supplier teams and generate technology spillover effects [21]. Since then, foreign scholars have conducted extensive studies on the advantages generated by spatial proximity between enterprises, and put forward concepts such as industrial area and industrial agglomeration to illustrate the innovation advantages of enterprises' spatial proximity [22]. However, there are heterogeneity differences in capability, behavior and motivation among firms, and it does not mean that all firms near geographical space have higher innovation advantages. In the 1990s, the Proximity dynamics school in France proposed the concept of Proximity, which provides a new explanation for the difference in innovation performance of enterprises in industrial agglomeration. They argue that geographical proximity is only one of the dimensions for coordinating the innovation process between firms. As a kind of social and economic structure, industrial agglomeration has multi-dimensional proximity such as geography, cognition and system. The concept of proximity has rich connotations. In addition to geographical proximity, it also includes the proximity between enterprises from cognitive, organizational, social and institutional dimensions [23]. Therefore, different degrees of

geographical, cognitive, institutional and other multidimensional proximity and combination modes among enterprises lead to differences in innovation performance [24].

2.3.3 The Relationship between Proximity and Innovation

In terms of the relationship between proximity and innovation, from the perspective of knowledge acquisition, proximity of different dimensions has a positive impact on enterprise innovation. For example, geographical proximity between enterprises facilitates face-to-face communication, obtains valuable external knowledge and improves innovation efficiency; Cognitive proximity refers to the similarity degree of culture, goals and values among enterprises, which is the premise of enterprise communication and helps enterprises avoid misunderstanding, learn interactively, acquire knowledge and other important innovation elements, and improve innovation performance. At present, foreign scholars have expanded from the single dimension of proximity to the impact of multidimensional proximity on innovation performance. Wuyts et al. (2005) [25] studied the relationship between cognitive proximity, knowledge acquisition and firm innovation performance. Knoblen and Oerlemans (2006) [26] analyzed the influence of geography, organization and technology proximity on knowledge acquisition and the mechanism of its influence on firm innovation performance under the framework of organizational cooperation. However, on the relationship between proximity and innovation, excessive proximity has a negative effect on firm innovation. For example, excessive geographical proximity means that enterprises only pay attention to internal connections in the agglomeration and neglect to strengthen external connections and acquisition of external knowledge, resulting in technology lock, which is not conducive to enterprise innovation.

3. Conclusion

3.1 Conclusion of Key Findings

All in all, from the perspective of geographical proximity, in the era of the knowledge economy and learning economy, knowledge has become a strategic resource, and learning has become the most important process. At the regional level, geographic proximity has an important impact on knowledge flow and collective learning, so it has its place in the framework of regional innovation economics. Spatial economics and innovation economics have the same purpose, but their different economic determinants lead to different understandings of geographical proximity. The inverted U-shaped relationship between geographical proximity and firm innovation performance is also determined by the characteristics of knowledge and learning. Too little geographical proximity will lead to difficulties in knowledge flow and learning, while too much will lead to closed knowledge flow and a locked learning space. Economics will prove the existence of this best advantage and actively seek it, but management practice requires mastering this dynamic balance, which is very important for innovative management. In a broader perspective, however, the position of geographical proximity in regional innovation economics is also questioned as it is in traditional spatial economics, and it is only a promoter of innovation rather than a necessary factor. This article collated and classified the existing research on geographic features, business innovation, and the correlation between these two topics. Through an analysis of the research, we have pointed out the possible investment direction of Chinese corporations. Specifically, it can be summarized as follow. On one hand, geographical proximity can promote business innovation due to knowledge and technology spillover. Precisely, firms can obtain high-quality labor, advanced technology, and professional suppliers, which increases the level of business innovation. On the other hand, in addition to geographical proximity, cognitive, institutional, and other multidimensional proximity and combination modes all bring a difference in business innovation performance. This paper can help investors evaluate the factors mentioned above to determine investment direction, and make the right investment, thereby promoting economic development. This can also encourage the growth and expansion of potential small and medium-sized enterprises.

3.2 Futures Studies

The existing research mainly focused on geographical proximity, only a few involved the geographic features such as waterway systems and glaciers. Future studies can be developed based on these factors. This article did not cover some of the geographic features in China, for instance, prairie, lakes, deserts, etc. These significant geographic terrains are a vital component in shaping China's current economy and businesses. Apart from the exclusion of certain geographic features, we only analyzed proximity's influence on businesses and entrepreneurs. This article did not include information regarding the topic of natural resources and even local cultures.

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