

Study on Later-Advantages and Regional Innovation Mechanism

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Abstract: The study presents an object-process-subject model of later-advantages, based on the regional innovation model, after analyzing the mechanism of realization of the late-advantages. Firstly, by the accumulation research of knowledge of enterprises, the study analyzes the micro-mechanism of the realization of late-comer advantages from the five stages of learning, imitation innovation, secondary innovation, quasi-independent innovation and independent innovation stages. Then, it focuses on the regional development organization form based on innovation network structure, emphasizing the important role of the government, and explores the social ability construction realized by the late-development advantages. Finally, the study discusses the spatial organization structure of the regional innovation development in undeveloped regions.

1 Introduction

The concept of late-advantages comes from Muller's investigation of the economic development of different countries [1-3]. The formal use of latecomer advantage as economic terminology and theorization of this idea are Geschenkron and Levi [3, 4]. Many scholars have conducted relevant empirical research on the advantages of latecomers. Abramovitz [5] proposed the chase hypothesis: all backward countries will inevitably catch up with advanced countries. This conclusion is inconsistent with the fact that the gap between most developing and developed countries is widening. He also pointed out that the key to grasping the hypothesis lies in the difference between "potential" and "reality", which can only be established under certain restrictions. The limiting factor is the technical gap, and the second is the social ability. The composite factors formed by the interaction between the two constitute the total factor of the economic catch-up from potential to reality. The third limiting factor is history, reality and changes in the international environment, such as the emergence of major historical events and the adjustment of the international economic order [6]. On the basis of his catch-up hypothesis, Baumol further pointed out that the low level of education and industrialization in poor and backward countries makes it impossible to effectively use the technological gap to achieve economic catch-up [2]. Dorek and Jermeier empirically tested this hypothesis, in which the social capacity of Abramovitz was embodied in the level of education and industrialization [7]. There are still two views on the relationship between social capabilities and technological gaps, education levels and industrialization. One believes that social competence is a prerequisite, so it is necessary to put social capacity first, national intervention, the formulation and implementation of policies must be preceded; the other is that there is no general, universal economic catch-up factor and model that must be analyzed historically and concretely. In most cases, social ability and education level are not preconditions. It is improved in the process of narrowing the technological gap and realizing industrialization. These two are an interactive

relationship [1].

Analysis of the realization mechanism of domestic late-developing advantages. Some proposed a post-development advantage-driven growth model, and analyzed the formation mechanism and transformation mechanism of late-comer advantage, and others combined with the actual situation in China to analyze the realization of the latecomer advantage from the technical and institutional aspects [8, 9]. There are some literature on the problem of technological imitation innovation as an important manifestation of latecomer advantage, and discussed the internal mechanism of imitating innovation to create latecomer advantage from the perspective of resource accumulation, and mainly used the secondary innovation as a breakthrough to explore the micro-realization mechanism of the post-development advantage of the post-development country, that is, the late-development advantage of the post-production manufacturing enterprises, but the understanding and wording of the late-comer advantage or the error [10-12].

At present, the term "post-emphasis advantage" has appeared in various works, and there is even a tendency to abuse. There is no standardization and uniformity in use, such as "getting advantage after acquisition" and "winning advantage after winning". Send advantage" and so on. The research on post-emphasis advantages comes from different subject areas and research perspectives, and various theoretical perspectives involving late-comer advantages should be established under a unified theoretical framework.

2 Methodology

An object-process-subject based late-effect advantage implementation model is proposed here. In the process dimension, it mainly considers the three main links of learning imitation, secondary innovation and independent innovation. The post-regional innovation development process must be gradually developed according to the level and ability of knowledge accumulation, which is different from the previous "double-work" mode. In the study of regional space-time development, it is necessary to carry out different levels of refinement according to different situations. In the dimension of the main body, under the premise of giving full attention to the role of the government, it emphasizes the mechanism of co-construction of diversified entities such as enterprises, governments, and the public, and pays full attention to the role of social factors.

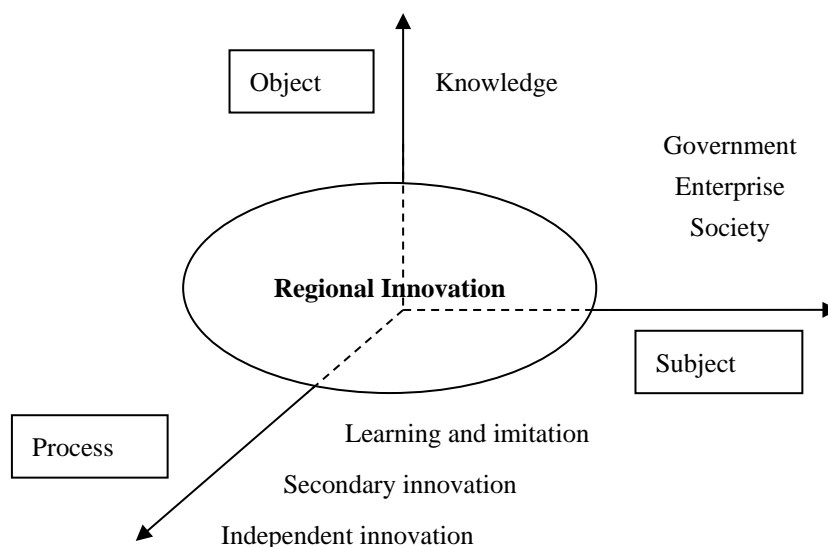


Figure 1. The three-D model of the mechanism on realization of the later-advantages

At present, human society has entered an era of knowledge-led, and knowledge and its

innovation have replaced traditional labor, land and capital as the most important strategic resources. Knowledge society is a society of knowledge creation and continuous learning. Its greatest feature lies in the use of human intelligence and creativity. The accumulation of knowledge is the key to the regional development of the knowledge economy era. The related system construction is mainly based on the construction of the innovation environment atmosphere. Therefore, in the dimension of the object, the treatment of knowledge is mainly considered, and it is different from the previous development concept of focusing only on GDP and economic growth rate.

3 Results

3.1 The realization mechanism of the latecomer advantage of the enterprise

From the perspective of knowledge, the essence of the enterprise is a dynamic, constantly updated, shared knowledge system with the inherent attributes of learning knowledge and innovative knowledge. The task is to manage and promote the sharing, application and innovation of enterprise knowledge. The level of knowledge accumulation of the enterprise itself restricts the acquisition of further external knowledge. The ability of business operations is based on existing knowledge, and is mainly the collection and expression of explicit knowledge. Therefore, people's preconceived cognitive bias affects the attention and absorption of new knowledge [13]. The technical problems and opportunities identified are often linked to existing activities. From the perspective of physical form, the stock of enterprise knowledge includes the relationship between people, things, the relationship between people and things, and the relationship between people and people. There is a dynamic interaction between knowledge stock and increment. The enterprise is essentially a series of highly proprietary, regenerative knowledge warehouses that exist in a variety of different forms of business practices and practices [14], requiring companies to establish the necessary processes. Structures, methods, and mechanisms to accumulate and store the knowledge generated at each stage, and to make learning and knowledge innovation a process of sustainable development.

The enterprise's knowledge accumulation level and knowledge accumulation ability should be developed together with the company's imitation innovation and secondary innovation. This is an effective way and destination for realizing the advantages of latecomers. It is summarized the dynamic process of companies from imitation to innovation from a learning perspective [1-3]. Enterprises mainly rely on technology learning to promote the accumulation of knowledge of enterprises, and through the four stages of enterprise learning process of preparation, acquisition, digestion, absorption, improvement, application, realize the advantages of latecomers. After four phases, it usually enters a more advanced technology field, or at a higher level, again in a cyclical process of preparation, acquisition, digestion, absorption, improvement and application. The object of "introduction" in the process mainly refers to the explicit knowledge of product design, manufacturing process, material formulation and standard in the first-time region, which requires long-term learning and accumulation, and more important in innovation is the silent knowledge that cannot be directly imitated. This requires enterprises to participate in the learning process of the regional innovation network, and through the informal network exchange and cooperation of enterprise personnel.

3.2 Regional Innovation Network Operation Mechanism

The open network structure is the best organizational form for regional development. For underdeveloped regions, forming their own knowledge innovation system and establishing a regional innovation network is an important part of regional development. To a large extent,

regional development is the development of regional innovation systems, that is, the main elements of enterprises, government, and society are systematic and networked innovation based on knowledge accumulation and localization innovation elements and innovation environment. The regional innovation system is a system formed by the effective superposition of regional innovation networks and regional innovation environments [2, 10, 11]. The primary link to the realization of the late-developing advantage in the underdeveloped regions is also the construction of the learning network. Building a regional learning network, the mutual coordination and knowledge sharing of learning experiences between enterprises, governments and many subjects in society is crucial to enhancing the ability of knowledge accumulation. It can prevent enterprises from being locked up by old technology, maintain learning motivation, and maintain Openness to external resources. Open production systems can continuously improve their technology and develop new products through the establishment of non-local networks.

3.3 Construction of Social Capabilities Realized by Late Advantages - Creating a Regional Innovation Environment

The regional economic network must be rooted in the regional innovation environment. The regional innovation environment mainly includes the infrastructure environment, social and cultural environment, and institutional environment. In addition to the transportation, energy, and power communications that we generally refer to, the regional innovation infrastructure environment mainly refers to public facilities that serve innovative entities, including public libraries, public laboratories, public information service networks, and others. Physical facilities such as public spaces provided for knowledge exchange learning. These infrastructures are the basic material basis for innovation and the foundational level of the innovation environment. The institutional environment for regional innovation mainly includes policies and regulations, management systems, legal systems, market mechanisms, and other systems related to innovation activities. The main body of innovation in the regional institutional environment mainly refers to the government. The local government mainly formulates innovative policy measures according to the specific conditions of the region, promotes the development of regional innovation networks, and reduces the uncertainty and transaction costs in innovation. The social and cultural environment of regional innovation is the core of the regional innovation environment, including: the innovative spirit of the behavioral subject. Including people's acceptance of innovation, the degree of recognition, the enthusiasm and courage to take risks, and the positive attitude towards innovation activities. Companies in this atmosphere have a particularly keen insight into the market and are prone to entrepreneurial and other innovative desires, which in turn reinforces the atmosphere of innovation, creates a virtuous circle, and maintains the continuity of innovation; Collaboration. The cooperative relationship of mutual trust is the key to innovation. The key to overcoming the innovation disadvantage of individual enterprises lies in the long-term stable cooperative relationship between enterprises, and the foundation is the trust and integrity of each other; the open atmosphere of exchange of ideas. Equality, freedom, relaxed working environment and open information exchange environment are conducive to the dissemination of new ideas and new knowledge in the region, mutual trust and open mind, which makes people exchange and interact frequently, speeding up the spread of knowledge.

4 Conclusions

At present, human beings have entered the knowledge society, and knowledge accumulation is the key to regional development. In order to realize the advantages of latecomer development, the

underdeveloped regions must use knowledge accumulation and innovation as the basis and motivation; open the network structure as the organizational form, improve regional innovation capability, and ultimately enhance regional competitiveness to achieve catch-up.

The realization of latecomer advantage is a continuous process of introduction, learning and innovation. For a long time, in the linear innovation mode, the post-development area only pays attention to the technology transfer mechanism, technology selection and negotiation ability, ignoring the post-development advantage micro-behavior--the cultivation of enterprises, ignoring the enterprise as the main body of technology use, learning and income distribution. Ignore the micro-subjects realized by the late-development advantage--the mechanism of the enterprise, and the realization of the late-developing advantage lacks the micro-foundation [1, 2]. The realization of regional post-development advantage should be based on the role of micro-subjects. This chapter first discusses the mechanism of enterprise knowledge accumulation, that is, the mechanism of the enterprise subject in the object-process-subject model, the government and the public in the model. The role of other factors must be based on the development of the enterprise. The open network structure is the best organization form for regional development. The establishment of regional innovation network is an important means to enhance regional competitiveness.

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