

Summary of Research on Optimal Allocation of Higher Education Resources in China

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Abstract

Through a review on literature about optimal allocation of higher education resources in China in recent years, the author summarizes the status quo and trends of research on higher education resource allocation both at home and abroad. Especially, the author sorts out existing literature at home and makes an inductive analysis in the following aspects: the concept of optimal allocation of higher education resources, the method of resource allocation, existing issues of resource allocation and corresponding research on countermeasures, which lays a foundation for writing relevant articles for subsequent researchers.

Keywords: Higher education, Resource allocation, Optimization

1. Literature review of researches abroad

1.1 Summarization of the status quo of researches on optimal allocation issues of higher education resources abroad

Prior to 1980s, researches of developed countries on allocation of higher education resources were mainly concentrated on factors that affected development of higher education. During the period after the Second World War and the end of last century, the economic system of western countries transferred from the market economy which focused on the national macro-control to the comprehensive and uncontrolled market economy. During this period, content of researches by researchers on allocation of higher education resources was to discuss supply of human resources and teaching process of higher universities and colleges with the center of labor market.

After entry into 1990s, research on the global competitive talent strategy, research on network resources educational strategy and research on higher education resources competition and reintegration become a worldwide subject encountered by higher education in all countries. The most consistent opinion of scholars in the theoretical field of research on globalization is that “the essence of globalization is to start from the perspective of re-allocation of resources in a global scope”. Therefore, all nations put more emphasis on development of higher education in face of the flow and integration of the global resources and search for a talent training mode that is suitable for their own development. Especially, the following researches have become the important fields of research on allocation of higher education resources: research on development, stimulation and protection of human resources in the nation, research on the core competitiveness of higher education and innovation of the system of sustainable development and research on transnational human resource competition and intellectual property protection. Since such a sort of researches have not risen for long, a long path is still waiting for us to form an internationally unified mature theory and research model due to diversification and differences of politics, economy and culture in different countries.

1.2 Researches on theories of optimal allocation of higher education resources

Allocation of higher education resources is a systematic project and contains a large number of sub-systems and aspects. At present, there are a lot of researches by foreign researchers on the issue of allocation of higher education resources.

1.2.1 Human capital theory of allocation of higher education resources

According to human capital theory, the primary approaches of human capital investment are school training and on-the-job training. Such a sort of investment can improve the intelligence, knowledge and skill level of human resources and its objective is to obtain potential production capacity so as to get more anticipated revenue.

Schurz believes that, the higher one is educated, the greater the benefits of individuals and the society. Thus, we can deduce, economic benefit of higher education is larger than that of secondary education and the economic benefit of secondary education is larger than that of elementary education. (Note 1)

1.2.2 Labor market segmentation theory of allocation of higher education resources

The labor market segmentation theory was proposed in 1971 by the American economists P. Doeringer and Michael J. Piore. According to this theory, the economic value of education to an individual lied in the fact that it was a significant factor to determine which kind of labor markets one works. The effect of education on the entire economic growth is that it will distribute people into different labor markets so as to enable the whole society to form an effective economic operator. (Note 2)

1.2.3 Marketization theory of allocation of higher education resources

As for the marketization of allocation of higher education resources, for the time being, there exist different disputes about allocation patterns of marketization of higher education resources allocation, allocation boundary and judgment on benefits of allocation. To sum it up, there are mainly the following views about marketization of allocation of higher education resources:

Firstly, viewpoint about marketization of higher education by Jog Koelman;

Secondly, viewpoint about marketization of higher education by Milton Friedman;

Thirdly, viewpoint about marketization of higher education by F.A. Hayek.

1.3 Researches on quantification method of optimal allocation of higher education resources

Quantification method in foreign countries about optimal allocation of higher education resources lays particular stress on empirical analysis and case study. For example, in his article "The Relationship Between Institutional Expenditures and Degree Attainment" (John F. Ryan, 2004), John F. Ryan from the University of San Francisco in US applied the Least Square Method to establish the Multiple Linear Regression Model and made a quantitative analysis in the relationship between 13 independent variables. (Note 3) There are also some scholars in foreign countries which employ DEA (Data Envelopment Analysis) to assess operational efficiency of higher universities and colleges so as to optimize allocation of education resources. In 1994, Sinuany- Stern et al employed DAE method to construct models and assessed the relative efficiency of 21 colleges in Ben-Gurion University. (Note 4)

2. Literature on domestic researches

2.1 Overall description of the status quo of domestic researches

Since the thirty years of opening and reforming up, with transition of the social system, researches on allocation of domestic higher education resources have been hot. There have also been a large number of normative and empirical studies on reform of higher education, and lots of excellent research achievements have appeared.

From the perspective of research on management system of higher education and performance evaluation of higher education reform, earlier researches are mostly speculative and qualitative, which are basically inductive researches of experiential summarization, and later researches are mostly researches of organizational models about higher education based on disciplinary knowledge of sociology and economics, etc. The latter exhibits two clear-cut characteristics. Firstly, it puts more emphasis on case studies of allocation of regional higher education resources, such as, Lv Hongmei (2008) (Note 5) and Shao Zhengyan (2004), (Note 6) etc. Secondly, it attaches more importance to the analytical application of theoretical models, such as quantitative research on the production function of higher education and research on models of instructional evaluation of higher education, etc. These achievements have accumulated quite a large majority of and multi-dimensional research experiences and methods and have broken a new ground for human beings to search for more explanatory theoretical analysis models.

2.2 Demarcation to the concept of optimal allocation of higher education resources

As for studies on the concepts of higher education resources and their optimal allocation, many academics have given different definitions from different perspectives. Kang Ning (2005) pointed out from the perspective of sociology that allocation of higher education resources referred to a group of rules about interrelation of stakeholders correlated with sharing of higher education resources. Different options of the society and different rules decide different means of resource allocation. (Note 7) Fu Yuwei & Shao Chunyan (2004) thought from the perspective of economics that optimal allocation of higher education resources meant rational distribution and sufficient & effective employment of higher education resources to improve the quality and efficiency of running

a school.(Note 8) Yang Dongli (2001) pointed out from the perspective of industrialization of higher education that optimal allocation of higher education resources was to enable higher education to be operated and managed in the light of “industry” according to the property of “industry” and rules of higher education per se.(Note 9)

For the time being, a viewpoint generally recognized by scholars is that, allocation of higher education resources refers to distribution of human resources, financial resources and material resources invested in higher education business in all sorts of different employment directions by the whole society (government, society, enterprise, family and individual) in order to accord with demands of the economic and social development.

Through a review on some literature in recent years, it is believed by researchers that allocation of higher education resources refers to distribution and employment of higher education resources with the property of scarcity so as to resolve the issues of output and structure of education service and finally attain the maximization of employment benefit of resources.

2.3 Correlational researches on the issue of allocation of higher education resources in China

2.3.1 Researches on optimal allocation of higher education resources at a national macro level

As for studies on how to optimize allocation of higher education resources in China and improve the entire benefit of higher education, in recent years, quite a great many scholars have drawn on theoretical knowledge in economics and relevant fields and put forward management system of higher education with the orientation of market mechanism at a national macro level. Zeng Jiarong (2003) employed the concept of resource allocation in economics and analyzed the essence of allocation of higher education resources. He mentioned that, training of the higher education market with the Chinese characteristics was an important task at present to deepen higher education reform and was also the core to optimize allocation of higher education resources. (Note 10) Lv Zhaohe (2002) made an in-depth discussion on influences of introduction of the market system and price mechanism into allocation of higher education resources in China and made an analysis in issues confronted by China after its entry into WTO in terms of allocation of higher education resources (Note 11). Yang Dongli (2001) mentioned that, in order to realize optimal allocation of resources, higher education had to initiatively gear to the demand of the market, follow general rules and principles of the market economy and carry out capital operation of education in universities and colleges. (Note 12)

2.3.2 Researches on optimal allocation of higher education resources in universities and colleges at a micro level

As for studies on how to optimize allocation of higher education resources and improve the benefit of running a school, quite a large number of scholars have been established in their universities and colleges and proposed a lot of direct suggestions and measures in combination with their own practice. Zhang Yue (2002) started out respectively from the perspective of optimal allocation of human resources, financial resources and material resources, employed the marginal cost --- effect analysis method to set up a comprehensive assessment index system of the economic benefit of operation of universities and colleges and employed the comprehensive weighted score method to construct assessment model for the economic benefit of running a university or college. (Note 13) Chen Lili (2005) reviewed from a historical perspective development of regular higher education in Shanghai from the opening and reforming up until now, summarized the effect of optimal allocation of regular higher education in Shanghai and analyzed issues and lessons in the process of resource allocation (Note 14)

2.3.3 Research on the allocation subject, allocation object and allocation method of higher education resources

In terms of selection of the subject for allocation of higher education resources, domestic scholars mainly conduct studies on externality of allocation of higher education resources and current productivity development level of China. For instance, Kang Ning (2004) held the viewpoint that we had to persist in the leading role of government in allocation of higher education resources. (Note 15) However, a lot more scholars believe, in the transition of higher education resources allocation, it is the most important to transfer the allocation model of the government in allocation of higher education resources, from government control model to government supervision model (Note 16). In contrast, Kuang Qian (2007) thought that there were three subjects in allocation of education resources, namely, organizer of education, superintendent of education and educator --- the school, each performing its own functions, and only their mutual coordination could realize the application benefit of resources. (Note 17)

As for the object of allocation of higher education resources, domestic scholars have also conducted studies on the formation content of objects of higher education resources. However, most of their studies start out from the perspective of how to strengthen management of internal teachers in universities and colleges and how to reinforce internal finance and management of assets in universities and colleges. There hasn't been any analysis which regards the object of allocation of higher education resources as a system, and there hasn't been any

rational definition to the scope of the object of allocation of higher education resources.

As for the pattern of allocation of higher education resources, at present, the major divergence among domestic scholars is whether higher education ought to adopt market allocation or planned allocation. For the time being, domestic scholars also have gradually come to a consensus that, market mechanism should play a role of fundamental allocation in allocation of higher education resources, and the planned pattern is mainly reflected in financial investment in higher education and macro management of higher education. However, there has not been any specific study on the boundary of the effect of different resource allocation patterns.

2.3.4 Study on existing issues in allocation of higher education resources in China

As for studies in this respect, there are some scholars who have made an in-depth analysis in the existing issues in allocation of current higher education resources. Hu Wei (2004) held the view that state-run higher education in China was still faced up with issues of inadequate education budget investment, improper management, reduced education quality and difficulty of talents trained in satisfying demands of the market, etc (Note 18). Chang Xiaoning (2004) further analyzed the fact that, at present, the principle of consideration of fairness and benefit centered with the benefit was not reflected better in the pattern of allocation of education resources in higher education resource allocation in China. The Administrative Department for Education did not fully play its role of macro regulation in allocation of education resources, and did not focus on the dynamic effect of resources (Note 19). Through analysis in the internal contradiction of allocation of higher education resource structure in China, Xie Wanhua and Ren Yunxi (2000) pointed out that there were six major issues in allocation of higher education resources in China, such as irrationality of combination of higher education resources, rigidity of higher education resource management, extensiveness of operation of higher education resources and lowness of valued added in higher education resources, etc.

According to the author of this article, there exist a lot of problems in allocation of higher education resources in China in the three aspects of human resources, financial resources and material resources. In terms of human resources, the teachers' team in China is inadequate in quantity and irrational in structure; in terms of financial resources, investment in higher education expenditure in China is unable to keep pace with the fast progress of massification of higher education, and allocation and investment of financial resources in universities also has constructional changes; in terms of material resources, the material conditions of running universities in China are in tight supply, and a large majority of universities are lacking in facilities of teaching, experiments, libraries, instrument, researches and other supporting facilities, some seriously insufficient.

2.3.5 Study on strategies to promote optimal allocation of higher education resources in China

Cao Zhengang (2005) analyzed in details relationship between the market mechanism and governmental functions in the process of optimal allocation of higher education resources in China, and concluded that only organic combination of market mechanism and appropriate government regulation could realize optimal allocation of higher education resources. (Note 20) Fan Jixuan (2005) proposed the strategy of optimal resource allocation of "leaning at both ends and open in the middle". (Note 21) Tang Wanhong (2007) emphasized that we should optimize allocation of higher education resources with the Scientific Outlook on Development. (Note 22)

According to the author of this article, only if the following steps are realized, can the employment benefit of resources be improved and allocation of resources be optimized: lessening the regional differences of spatial allocation of higher education resources, realizing diversification of the investment subjects, rationally integrating higher education resources, consideration of "fairness and benefit" in allocation of resources with benefit being the center, improving the mechanism of assessment and supervision on educational investment, promoting coordinated development of higher education and economy and encouraging sharing of higher education resources.

3. Evaluation on existing studies at home and research trends in the future

Generally speaking, quite a lot of domestic scholars have conducted beneficial theoretical discussion on optimal allocation issues of higher education resources and have also attained some achievements in theories of allocation of higher education resources and in macro and micro resource allocation. However, there also are some disadvantages in the studies as follows.

3.1 Lack of study at a regional medium level on optimal allocation of higher education resources

Domestic literature about optimal allocation of higher education resources either starts at a national macro level or at a micro level of universities and colleges, and the perspective of studies hasn't had any corresponding changes in accordance with further reform of macro management system of higher education. Thus, it lacks deep research in the regional level, that is, optimal allocation of provincial higher education.

3.2 Lack of empirical study on the status quo of allocation of higher education resources and scientific and rational evaluation mechanism

When most domestic scholars make assessment and analysis in the status quo of allocation of higher education resources, they tend to list just some data for discussion in generalities, so they are usually short of objectivity and accuracy in the assessment results. As a consequence, when relevant articles expound the status quo of allocation of higher education resources, its causes and countermeasures & recommendations, the three of them are isolated, without any internal organic connection, so systematicness is lacking in the research outcome. A minority of scholars make an attempt to employ the quantitative analysis method to evaluate the status quo of allocation of higher education resources. However, on the whole, depth of research is not sufficient. Assessment and analysis of the status quo of allocation of higher education resources is the core of studies on optimal allocation of resources. Therefore, if we can not employ a scientific method to assess and analyze the status quo and existing issues of allocation of higher education resources, it is unlikely for us to put forward rational and compelling countermeasures for optimal allocation of higher education resources.

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