

A Study of The Impact of Economic Development Across China on Higher Vocational Education

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Abstract. The impact of economic development in different regions of China on the development of higher vocational education is one of the key topics of research today. The researcher found that although higher vocational education has many positive impacts and promotes the regional economy to a certain extent, there are also problems such as lack of attention, waste of a large number of labour talents, and irrational allocation of resources, etc. However, there are some research gaps on the issue of the impact of the regional economy on higher vocational education; and there are also problems such as insufficient explanations of the problems and hazards caused by the problems and the measures to solve them. Therefore, this study directly analyses, summarizes, and investigates the relevant literature, summarizes the positive and negative impacts of regional economic development on the development of higher vocational education, and puts forward suggestions from government policies to promote school-enterprise cooperation, rational allocation of resources, and the development of higher vocational education in these aspects.

Keywords: Regional economic impact; higher vocational education; positive impacts; negative impacts.

1. Introduction

The Vocational Education Law of the People's Republic of China of 2022 states that vocational educational intends to improve the quality and technical level of workers, to build a strong education country, a strong human resources country, and a technology-based society, as ways to promote the construction of China's modern socialist discourse. According to the preliminary accounting of data released by the National Bureau of Statistics (NBS) in the same year, the annual gross domestic product (GDP) was 1,210,207,000,000 yuan, an increase of 3.0% over the previous year. Overall labour productivity has been on an upward trend in the past five years [1]. In 2019, China launched a programme for the construction of advanced high-vocational schools and professions with Chinese characteristics (referred to as the "Double-High Programme"), which aims to raise the level of vocational education in China, cultivate professional labour-oriented talents, and integrate economic development. Since its inception, the programme has made some progress through the creation of a shortlist of colleges and universities that are included within the "Double-High Programme", government financial support, and school-enterprise integration, among other measures. According to the theory of cost-sharing, the principle of education analyses the problem of who and how to pay for higher education, Yang Xianjiang puts forward the idea of "Whole Life Guidance" education, which points out that we should focus on the lifelong, all-round education of young people, and cultivate "strong bodies and spirits, working knowledge and skills, and the ideal of serving the people" [1,2]. The idea of "lifelong guidance" points out that the focus should be on the life and holistic education of young people in order to develop individuals with a "strong body and spirit", knowledge and skills for work, ideals and skills for serving the people, and good habits and habits for enriching their lives". Based on the above theories, this thesis focuses on secondary vocational schools (including technical schools) at the senior secondary education level in the schools' education, and analyses them. Due to the complexity of the current form of society, there is a mismatch in the

delivery of talents in vocational education. In order to promote the development of vocational education, this paper will conduct research from a macro perspective to explore the impact of China's regional economic development on vocational education. Studying the development of vocational universities in China and their relationship to the economy is of great practical significance.

This paper analyses the relationship between the development of vocational schools and the economy in China from a macroeconomic perspective, and focuses on solving the current mismatch between social demand and talent supply. It offers suggestions for the development of vocational education in China. By analysing the current situation of higher vocational education in China and its theoretical significance to economic development, it provides further theoretical inputs for the development of vocational education in China.

2. The Impacts of Local Economic Development on Higher Vocational Education and Training

2.1. Positive Impacts

2.1.1 Local Economic Development Is the Material Guarantee of Higher Vocational Education

The economic foundation determines the superstructure. According to Marx and Engels, education should belong to the superstructure. Therefore, from the point of view of derivation, education is not produced gratuitously. However, it depends first on economic development, and economic development may provide many opportunities for the development of higher education.

2.1.2 The Economic Development of Different Regions Provides Ideas and Guidelines for The Development of Higher Vocational Education

Niu Yen and Xu Haiwen focus on a new stage of economic development in their article "Regional Development from the Perspective of the Development Strategy of Technical Colleges and Universities," which promotes a development mode of "building an integrated mode of industry-university research and promoting their dependent role in development [3]." Sun Jie explains the current economic development of Wuxi in terms of emerging industries, advanced manufacturing, and modern service industries in "Research on the Adaptability of Industry-University Integration and Regional Economic Development in the Context of Wuxi Higher Vocational Education," he contends that "regional economic development is the power source of the interaction mode of Wuxi higher vocational education [4]." By establishing long-term cooperative relationships between education and industry, and between schools and businesses, higher vocational universities will provide new technical human resources for the development of the regional economy and at the same time solve the employment problems of many graduates, which makes the development of the regional economy and the higher vocational universities mutually beneficial.

2.1.3 Economic Development in Each Region to Promote the Level of Higher Vocational Education

The "double-high programme" for vocational colleges was introduced in China in 2019. Through top-down financial education subsidies from the government and screening of higher vocational colleges' and universities' educational levels, the "double-high programme" has a list of higher vocational colleges and universities that have been chosen. Higher vocational institutions will be encouraged to expand their scope, increase their comprehensiveness, and strengthen their foundation and capacity for operating schools by having their internal reform and development promoted from the outside to enter the competition for those higher vocational institutions that are not chosen for the programme. At the same time, for the higher vocational colleges and universities that have been selected for the programme, it undoubtedly provides them with economic resources and subsidies, reduces the economic disparity due to regional economic development, and helps to bring in advanced teaching equipment and excellent talents and teachers to promote their further development.

2.2. Negative Impact

2.2.1 Incommensurate Economic Development in Each Region Exacerbates the Uneven Development of Higher Vocational Education.

Sun Aiwu proposed that "the level of regional economic development directly determines the degree of investment in higher vocational education" [5]. Many scholars in the study of the problem focus on a single region on the economic development and the local higher vocational education situation to compare and compare the literature reading. By doing this, one can find differences in the state of economic development between the regions. Lai Xinghua takes Heyuan City in Guangzhou Province as an example, and Li Juyin, Yan Wei, Hu Xinguang, Li Xin, and Zhu Shanyuan take Jiangsu Province as the research object, respectively. Research and analyze the regional economy and the development of higher vocational education [6,7]. According to the "Heyuan City 2022 National Economic and Social Development Statistical Bulletin", and "Nanjing City 2022 National Economic and Social Development Statistical Bulletin", the current economic development of Guangzhou exists the following problems [3,8]. (1) Smaller total volume, in 2022, Heyuan realized a regional gross domestic product (preliminary accounting) of 129,457,000,000 yuan, while Nanjing realized a full-year regional gross domestic product of 169,785,000,000 yuan; (2) Sluggish growth in residents' consumption level, Heyuan 2022 annual consumer price index (CPI) rose 1.8% , of which education, culture and entertainment rose 2.2% ; Nanjing 2022 annual consumer price index rose 2.2% , of which education, culture and entertainment rose 2.2% . (3) Low fiscal revenue, Heyuan annual local general public budget revenue of 7.164 billion yuan, calculated at the same caliber (tax refund for allowances), down 10.7% from the previous year; Nanjing annual general public budget revenue of 155.820 billion yuan, up 0.1% in the same caliber; education spending of 33.030 billion yuan, up 2.4% in the same caliber. A comparison of education statistics shows that compared to Nanjing, where economic development is more advanced, Heyuan has significantly fewer institutions of higher vocational education and fewer students: in 2022, Heyuan, 15 types of secondary vocational education schools, 32,600 students, an increase of 540,000 over the previous year. Nanjing, 10,254 vocational schools, 22 secondary vocational schools, 63,400 students, an increase of 170000 over the previous year. It can be seen that the imbalance and inadequacy of regional economic development affects the investment and development of higher vocational education in the region and exacerbates the disparities in higher vocational education between the regions.

2.2.2 The Economic Development of Various Places Aggravates People's Prejudice Towards Higher Vocational Education

As early as the end of the Qing Dynasty, China developed the earliest institutions of higher vocational education, until today, the development of higher vocational education is not an easy path to take. In 1978, after the Third Plenary Session of the Eleventh Central Committee, China's higher vocational education was restored and gradually began to flourish. However, in recent years, with the general trend of economic growth, strengthening of domestic culture, and ideological concepts, higher vocational education is valued less, even higher vocational education is regarded as "poor quality education" and "low-end education". According to the "China Good Life Survey (2020-2021)" released by CCTV Finance Channel, statistics show that "children's education" is the third most difficult problem faced by families [3]. 14.55% of the respondents believed that "children's education" was the most difficult problem for families in 2019, and just one year later, the number of families that ranked this option at the top of the list jumped to 36.19%, a record high in the past five years. This shows that the involution among parents is increasing, with more and more parents joining the ranks of "Haidian mothers" and "chicken mothers". Pressure to invest in education is increasing every year and higher education is naturally at a disadvantage in the development of higher education. At the same time, as the economy is getting better, some parents are willing to choose between higher vocational education and sending their children to study abroad, and if the family's financial conditions allow, parents generally favour the latter.

2.2.3 Higher Vocational Speciality Setting and Updating Hinder the Development of Higher Vocational Colleges and Universities

Currently, China is implementing a new development concept, focusing on promoting quality development, promoting the establishment of new development patterns, and implementing supply-side structural reforms. In 2021, the tertiary sector contributed 4.5% to GDP growth, compared to 3.1% for the secondary sector and only 0.5% for the primary sector. The tertiary sector contributed 3.0% to GDP growth, higher than the wholesale and retail trade (1.1%) and the financial sector (0.4%) [9]. The unstable growth of the regional economy and the absence of pillar industries in the region make it difficult for higher vocational education and training to propose economic directions and future development in line with the development of the regional economy. At the same time, the information gap and time lag between higher vocational education and economic development make it difficult to simultaneously strengthen the conditions for regional economic development and national leadership policies, which often results in two conflicting dilemmas. Since the mode of economic development and the quantity and quality of industries differ from region to region, overreliance on the "industry-university cooperative research" model has led to overspecialization in the professional settings of institutions of higher education and vocational schools, overlapping occupations of graduates, and a large influx of similar personnel into the labor market, resulting in a massive waste of human resources, creating employment problems for graduates.

3. Reasons for the Impact of the Economy on Education

3.1. Reasons for Positive Impact

3.1.1 Economic Level Determines the Superstructure

The level of additional vocational education is determined by the level of regional economic expansion, and the specialization of higher career education is determined by the nature of the economy. Educational infrastructure is divided into hard and soft facilities. Hard facilities, such as the construction of educational buildings, various sports facilities, and scientific research facilities, directly influenced on the success of vocational college education in higher education, while soft facilities, such as teachers and logistical support, play an indirect role in the development of higher vocational education. In other words, the project is to collect and create quality resources, promote structural reforms on the supply side, while producing a top-notch system of educational support for post-secondary vocational education to promote its better development.

3.1.2 Economic Development Leads to Optimisation of Universities

The adjustment of economic development and industrial structure optimisation in various places requires multi-skilled talents. In this context, the comprehensive quality requirements of enterprises for employees continue to improve, especially some high-tech industries have a more vigorous demand for excellent talents with high comprehensive quality. Enterprise demand for the development of higher vocational education provides a direction, for enterprise demand, such kind of colleges and universities can innovate talent training mode, for regional industrial transformation and enterprise development to provide quality talents. The development of the regional economy is oriented toward the digitalization of industry, striving to improve the innovative capacity and modernization level of the industrial chain. This has given higher vocational education a new direction and persuaded higher vocational institutions to best adapt their educational models to match economic development and deliver a constant supply of creative abilities, high-quality human resources for economic development.

3.1.3 The Role of Economic Development in Raising the Level of Education

In higher vocational universities, the measurement of education level is divided into three levels of objectives: direction, quality and efficiency of school education, basic conditions, rational utilization, and standardization management and reform and innovation. From the data in the China

Statistical Yearbook, it is easy to see that the more economically developed regions, such as Shenzhen, Zhejiang, and other eastern coastal cities in the "double high program" of the list of A-grade higher vocational universities, have a greater proportion of better social resources. The implementation of the policy requires a certain period of time. During this time, the growth of regional vocational learning institutions will stall, which is likely to cause an imbalance in their development and have an impact on the advancement of regional specialized schooling at higher levels.

3.2. Causes of Negative Impacts

3.2.1 Role of Economic Development in Raising Educational Standards

Wu Tinglin believes that there is an imbalance in the allocation of resources in higher vocational education in terms of type, space, point, and structure. (1) Imbalance in the type of resource allocation, the proportion of education funding input is lower than that of general faculties and departments. (2) Spatial imbalance in resource allocation, there are many regional phenomena of imbalance in China's economic development, and there are large differences among provinces. There are obvious differences in education fund investment, and higher vocational education resources are disproportionately distributed among regions (3) Imbalance in resource allocation direction, with the 2019 Special Work Implementation Plan for Higher Vocational Expansion, the pressure and opportunities faced by higher vocational education institutions nationwide are unprecedented, and the central government has allocated 23.7 billion yuan of special funds to be arranged for the Modern Vocational Education Quality Improvement Plan, and has guided local governments to implement policies such as awarding per-student allocations, raising the level of subsidies, and expanding the scale of school operations [10]. As a result, some technical colleges have reached a funding impasse and blindly expanded the size of their majors and enrollment, leading to a decline in the quality of education and a waste of resources.

3.2.2 Occupational Diversity Leads to Prejudice

Since ancient times, there has been a tradition in China of the idea of learning to be a scholar, and the study of theoretical knowledge is the most important part of a student's academic career. Derived from modern society, entering the traditional institutions to continue the study of theoretical knowledge is undoubtedly a continuation of the idea of learning and excellence. Unlike traditional undergraduate, higher vocational colleges and universities focus on the training of students' vocational skills. The course of study is more practical than theoretical, and the aim is to cultivate technical and skilled personnel. Following the introduction of higher vocational education in the West, higher vocational education was first formally proposed in China in 1978 during the reform and opening up, focusing on the rapid output of useful talents for the development of society. Since then higher vocational education has become a part of China's education system. However, with the social and economic development, people's demand for learning from simple employment to better jobs, and higher vocational education exists in the times, in the transition of jobs need more time, While the range of fields has risen and the economy is maturing more quickly than higher vocational education, this has had an unfavorable effect on higher vocational education.

3.2.3 Disconnect Between Theory and Practice

Currently, most vocational training institutions still pursue an employment orientation, which, combined with the disconnect with societal needs, has led to duplication of vocational training. Students lack a clear understanding of the choice of career, and cannot better choose the right profession for future employment. In order to make the development of higher vocational education in line with the economy, the state issued the "Vocational Education Industry-Education Integration Empowerment and Enhancement Action Implementation Plan (2023-2025)". However, there is a problem of "school-hot enterprise-cold" A portion of the collaboration between educational institutions and organizations during the merger of sector and education remains at the duration of the contract or the threshold of labor employment. Some vocational schools have not adapted to the actual needs of scientific innovation and industrial technology research and development in terms of

their curricular systems, teaching methods, internships and practical training, resulting in a disconnect between students' vocational theoretical knowledge and practical skills and the needs of enterprises. Some enterprises are constrained by the conditions of capital, land and other schooling input costs, They are not deeply involved in the process of human resource development in vocational schools and universities.

4. Countermeasures and Suggestions for the Coordinated Development of Economy and Higher Vocational Education across China

According to the literature review, there is a close relationship between regional economic development and higher vocational education and training development. Therefore, the win-win situation between regional economic development and the development of higher vocational education and training can be achieved by improving higher vocational education and training development policies and promoting regional economic development.

4.1. Government Policies to Promote School-Enterprise Co-operation

4.1.1 Making Full Use of National Policies to Promote Co-operation Between Tertiary Institutions and Enterprises

In school-business cooperation, a policy should first be established to coordinate the interests of both sides and play out a win-win situation. Second, the government should continue to encourage and support the economy, improve school infrastructure, provide multifaceted economic support in terms of number, size, conditions, and quality of schools, pay special attention to special regions such as Tibet, and help ensure that educational resources in all regions are rationally distributed, resulting in common development and balanced distribution of resources in all regions.

4.1.2 Changing the Concept of Higher Education

The economic development of various regions has intensified people's prejudice against higher vocational education. The Government should actively promote and guide the employment of graduates, strengthen graduate employment management and guidance, broaden graduate employment channels and analyse mass market orientation. The government should implement multifaceted standardized management and higher vocational colleges should provide graduates with job recommendations and multifaceted employment options. Increase employment opportunities for graduates in a fair and reasonable manner. At the same time can also be held jointly with enterprise competition, competition. Both play the role of publicity, so that the public more intuitive understanding of higher vocational education, reduce prejudice; but also, improve social recognition, and anticipates buoying the overall ranking of more advanced vocational schools in the neighborhood.

4.1.3 Changing the Concept of Higher Education

First of all, it is necessary to understand the level and condition of economic development in different regions of China, and reasonably combine vocational education with local economic services, When we think of payments, we think of "personal cash purchases". In ancient times, people exchanged items such as skins and shellfish for goods. Silver and gold later took other things' place as exchange's main medium. Paper money has now become the primary currency in modern times. While focusing on professional construction, it is also necessary to pay attention to the development of the curriculum. Curricula must respond to changes in the times and in society, develop and innovate teaching materials and programmes, improve curricula and education systems, and enhance the quality of education.

4.2. Rational Allocation of Resources for the Development of Higher Education

4.2.1 Rationalizing the Training and Distribution of Teachers to Improve the Quality of Teaching

To develop higher vocational education and attract more high-quality talents, it is necessary to improve the quality of teaching. First, it is necessary to formulate a scientific personnel training programme. According to the social needs of the development of training objectives, through extensive social surveys and seminars to develop a reasonable training programmed, and the training programmed to continuously improve and improve, try to find problems again to improve and improve the formation of a dynamic cycle, the development of a complete set of implementations of the programmed. The training of talents for internship, pre-graduation to assess, and social integration adjustment, and ultimately work and employment. Secondly, the development of social needs of the characteristics of the key disciplines, the training of academic faculty, the key characteristics of the discipline for scientific research, and further highlighting the characteristics of its school.

The Government must continue to improve its education policy and enhance teacher training. Higher vocational education schools should introduce more teachers with solid academic knowledge, theoretical foundation, rich practical experience and skills, and should have the basic qualities of a teacher, abiding by the concepts of students, teachers and teaching. Strengthen teacher training and increase opportunities for teachers to go to renowned schools and educational institutions. More platforms are provided for the training of talents, and master teachers from various school's seminar each other to pass on and exchange their experiences, so that the experience of master teachers can be fully promoted. For special regions such as Tibet, where teachers are few and unevenly distributed, the government should formulate a sound policy to evenly distribute excellent teachers and provide unified management, deployment, and equal and fair training and seminar opportunities for teachers in all regions of China, so that teachers in all regions of China can be upgraded together.

4.2.2 Balanced Allocation of Funds and Rational Use of

The rational allocation and use of funds are crucial to the development of institutions of higher learning. An overview of the distribution of education funds in China reveals an uneven distribution of funds between regions. Therefore, China government should further improve the policy, increase the investment in education funding, so that more economically backward areas can be better upgraded, with reasonable and scientific economic support, while the economic development of the front of the region can be further developed and improved. In this way, higher education institutions in all regions of the country can receive more financial support according to their number, size and conditions of operation.

With regard to the allocation of resources, there is also a significant imbalance, with shortages and wastage in the use of resources. Therefore, for the allocation of resources, the Government should allocate more funds to upgrade the construction and renovation of educational infrastructure and improve the conditions of schools in different areas. The government should also strengthen the supervision of schools and scientifically purchase research equipment and put it into use. The problem of unbalanced educational resources requires the attention and support of the whole society. Enterprises and organizations should also invest more in education and create more educational projects and funding schemes. The media should report more on education issues to draw society's attention to the problem of unbalanced education resources.

5. Conclusion

There is often an information bias or time lag between higher education institutions and the local economic system, and some literature only focuses on fewer factors, ignoring other objective subjects may be based on the economic aid, which may make the conclusions appear a certain bias. Based on the above literature review, this paper will further enhance the comprehensiveness of the data and influencing factors, carry out standard processing, and analyse the general laws. This article analyses

the one-way impact of higher vocational education on economic development as well as the two-way facilitating role of higher vocational education and economic development. Drawing on relatively mature literature and theoretical studies, the article draws many conclusions about the role of regional economic raise in promoting the development of higher vocational education institutions, as well as some contradictory conclusions. Regional economic development promotes the development of institutions of higher vocational education, and economic growth provides a material basis for the growth of institutions of higher vocational education, provides ideas and guidance for the future development of institutions of higher vocational education, and promotes the improvement of educational standards. The opposite view points out that the unbalanced and uncoordinated development of economic regions has widened the gap between higher education institutions, which are favoured by economically developed regions, and that the mismatch between higher education institutions and economic development hinders the development of higher education institutions. On the basis of the above analyses, this paper argues that government policies to promote University-Industry cooperation should make full use of the national policies to be promoted, rationally allocate resources, and push the development of higher vocational education and training, as well as showing opinions and suggestions.

Authors Contribution

All the authors contributed equally, and their names were listed in alphabetical order.

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