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Review Article

Human Capital and Economic Growth: A Systematic Review

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Abstract *- Human capital has played an extremely important role in the process of promoting economic development and has been extensively and deeply studied by scholars all over the world for a long time. These studies have provided effective upgrade paths for the economic development planning of many countries, especially for developing countries. This article conducts a systematic review of the existing literature to provide a reference for future research of this kind, and to provide some basis for China and other countries to improve the level of human capital and formulate economic development policies.*

Keywords - *human capital; economic growth; literature review*

I. INTRODUCTION

From Adam Smith pointed out in "The Wealth of Nations" that human endowments can also be used as capital and become an important factor affecting production, to Irving Fisher, who first proposed human resources in "The Nature and Income of Capital" the concept of capital, and then to Schultz's "Human Capital Investment" report in 1960's systematic exposition of human capital and its role in economic development, the criticality of human capital and its relationship with economic growth is now gradually become clear. Schultz, Marshall, Lucas and others have also established a connection between human capital and education. Based on these studies, domestic and foreign scholars have conducted many studies on the relationship between human capital and economic growth.

II. Chinese Literature Review

China's research on human capital's impact on economic growth is mainly based on education. Education, as a key method of human capital investment, has played a role in promoting economic development. Many scholars have studied this contribution.

Zhu Yimin and Zhong Qingcai (2002) used data from 1978 to 2000 to analyze and compare the contribution of human capital to economic growth in various cities in Guangdong Province and the differences in physical capital and human capital. Yang Liyan and Pan Huifeng (2003) divided human knowledge into the application and basic knowledge and analyzed the role of basic knowledge in promoting economic development. According to the results of empirical analysis, basic knowledge has significant effects on long-term economic development. Positive influence and the stock of human capital is the key factor for basic knowledge to play a role, and it also points out the important position of the government in promoting economic development. Zhou Xiao and Zhu Nong (2003) measured the role of human capital in economic development in China's rural areas based on panel data from 1989 to 1995. They pointed out that human capital has played a huge role in China's rural economic development. This is especially true in economically developed areas. Hu Yong Yong (2003) estimated the output contribution of human capital based on the data from 1952 to 1998. He pointed out that although China's human capital has a significant positive contribution to economic growth, the impact is relatively small and pointed out that the impact is not long-term. Zou Wei and Dai Qian (2003) analyzed the technological and economic learning and catch-up of developing countries from developed countries through the endogenous growth model. They pointed out that human capital is the technology and economic progress of developing countries. If human capital can be adapted to technological learning, it can play a role in promoting technological progress and economic development.

Bian Zhijing and Shen Lisheng (2004) conducted an empirical study on human capital in the eastern and western regions of China and its role in economic growth, and the results confirmed that the difference between the eastern and western economies in China is largely due to the gap in human capital. Lai Mingyong et al. (2005) constructed an economic growth model including human capital, technology, trade and other factors. They analyzed the effects of these factors on economic development based on China's panel data from 1996 to 2002. Wang Yu and Jiao Jianling (2005) analyzed the effectiveness of China's

human capital structure and total amount in the economy based on the human capital of education. They found that the popularization of China's compulsory education and the expansion of higher education has had a positive impact on economic growth. There is a big gap in human capital among various education levels and regions, and education investment needs to be improved.

Dai Qian and Bie Zhaoxia (2006) analyzed an economic growth model that included developed and developing countries. They concluded that if developing countries want to make full use of the utility of foreign direct investment, to improve technical and economic levels better, we should pay attention to the accumulation of human capital. Yang Jianfang et al. (2006) used the panel data of about 15 years at the end of the last century in China to construct a model that includes education and health through the CD function. Through empirical analysis, it is verified that human capital has a key effect on economic growth, and it is pointed out that the accumulation and stock of human capital have made important contributions to economic growth. Li Yaling and Wang Rong (2006) measured the level of human capital inequality in China based on the Gini coefficient. They pointed out that in regions with high levels of human capital inequality, the overall level of human capital is lower, and the level of economic development is also low. Therefore, it is believed that the distribution of human capital is an important factor that cannot be ignored in economic development, and it should arouse widespread attention. Yang Jun and Li Xuesong (2007) analyzed China's human capital inequality based on panel data from 1996 to 2004 and used the education Gini coefficient. The results showed that China's enrollment expansion policy had a good effect, and there were significant regional differences in human capital. And this difference is also an important cause of regional economic differences. Yao Xianguo and Zhang Haifeng (2008) conducted an empirical analysis of the relationship between human capital, economic development, and regional economic differences based on the systematic generalized moment estimation and FEM. They found that there is a significant difference between the education level of the labour force and the regional economic growth level. Positive relationships, especially human capital, also have certain spillovers. And the article also shows that compared with physical capital investment, human capital's role in economic growth is still in a secondary position, and there is significant convergence in the level of economic growth among various regions in China.

Gui Zhaoming (2009) developed the concept of human capital based on the original human capital connotation and theory, combined with China's talent concept, and how to measure the stock of human capital and how to measure the contribution of human capital to economic growth A review of the theoretical and methodological basis was carried out. It was pointed out that the Cobb Douglas function could be used. The calculation of the contribution of human capital as compared with the contribution of human capital in economic growth and a similar method could be used to calculate the contribution. Zhang Yu and Bai Yongxiu (2009) analyzed from the perspective of women's human capital. They concluded that investment in women's human capital in the Midwest should be increased to reduce regional economic differences. Qian Xiaoye (2010) used China's provincial panel data from 1997 to 2006 to analyze the relationship between human capital, technology, and economic growth and introduced spatial factors. Based on the results of empirical research, they believe that workers with a high degree of education. It has a significant positive impact on innovation. Still, its contribution to economic growth is not significant.

Ma Ning et al. (2011) used Beijing's relevant data from 1978 to 2008 to estimate the contribution of human capital to the capital's economic development. They found that Beijing's human contribution rate is still far behind that of developed countries. Zhu Chengliang et al. (2011) used China's panel data from 1998 to 2008 and used a stochastic frontier analysis model to analyze the relationship between human capital and its structure and regional economic growth, and found that China's average education level is on the rise. At the same time, the structure of human capital is also in a state of continuous improvement. Still, these changes have obvious regional heterogeneity, and it also points out that human capital, especially senior human capital, can significantly enhance economic growth. Wang Dihai (2012) expands the Ramsey model and incorporates healthy human capital on this basis, analyzes its impact on economic growth, and considers factors such as material and consumption. The empirical results show that there is technological progress. Under the conditions, the increase in healthy human capital brought about by the consumption of food and nutrition will promote economic growth. Otherwise, it will not work, and it is found that economically developed countries have a significant advantage over backward countries in terms of health and consumption levels.

Yuan Fuhua et al. (2015) compared the data of some countries in Asia and the Americas. They found that developing countries with faster economic growth generally have upgraded in the level of human capital. Still, most of them have an accumulation of middle and low-level human capital. The phenomenon of insufficient high-level human capital and the bottleneck of economic growth in many countries is this. It also emphasized the importance of human capital cultivation and pointed out the importance of today's human capital cultivation for future economic development and transformation. Hu Yan and Zhang Wei (2018) compared the contribution of

human capital to economic growth in Anhui Province and Jiangsu Province from 1998 to 2015. They analyzed that the difference in the output elasticity of human capital was the main reason for the huge gap in economic development between the two provinces.

Meng Wangsheng (2019) analyzed the relationship between gender structure and economic development from the perspective of the difference in human capital between men and women, using data from 2001-2006. The result found that the influence of the quantity and quality of the female labour force on economic growth is U-shaped. At the same time, as technology evolves, the influence of gender differences on economic growth will decrease. Cao Ze et al. (2019) divided human capital into three types: innovation, entrepreneur, and macro according to their role, and analyzed how the three types of human capital collaborate in economic development based on data from 2007 to 2016. Cui Wei (2019) analyzed the relationship between human and social capital and economic development. It is pointed out that the promotion of human capital to economic growth is based on social capital. Therefore, we should pay attention to the adaptability of human capital and social capital to better promote economic development.

Chen Hanpeng and Bu Zhenxing (2019) rearranged China's population and education data, and based on this, reanalyzed the role of human capital in China's economic growth. The results showed that if the 20-59 years old group is regarded as the Chinese working population, It will be beneficial to China's economic development. For a long time, in China's economic development, the role of material capital is more critical, and then education and labour. In recent years, the slowdown in China's economic development is mainly due to the decline in investment and total factor productivity. Zhang Jinshan et al. (2019) analyzed the effects of human capital in rural areas of China on economic growth from the perspective of rural revitalization. They pointed out that investment in rural education should be emphasized, and human capital development in rural areas should be accelerated to promote economic development.

Jun Li (2019) analyzed China's provincial panel data from 1998 to 2015 and found that household education investment will slow down the economic growth rate, and income inequality also hurts economic growth. Zhang Aiqin and Gao Chunlei (2019) used panel data from 2001 to 2016 to analyze the relationship between human capital and economic development in ethnic regions from the perspective of education. The results show that education in ethnic areas continues to rise; The proportion of the population with low education is gradually decreasing; Although the density of human capital has increased, compared with other regions, the density of human capital in ethnic areas is still at a disadvantage; The education level has a significant role in promoting the national per capita GDP, but the role of human capital density in promoting is not obvious in ethnic areas. Su Yan and Lu Jin (2019) analyzed the coupling relationship between the intellectual and physical factors of China's human capital and economic growth based on China's provincial panel data from 1982 to 2016. They pointed out the degree of coupling between the three. It is always in an increasing trend and has obvious regional heterogeneity.

Zhao (2019) used China's provincial panel data from 2000 to 2016 and used a spatial regression model to analyze the spatial characteristics of the impact of regional scientific research capital and human capital on economic growth, and found that regional intermediate human capital has an impact on neighbouring regions. While the total factor productivity and technological progress have a positive effect, high-level human capital has a negative impact on neighbouring regions while improving TFP and technology in the region, and pointed out that this impact has the heterogeneity of existing regions. Yu Jingwen and Miao Yanqing (2019) used panel data from 1991 to 2014. They used the number of ancient temples built as an instrumental variable to analyze the impact of healthy human capital on economic development. The results found that this effect was significantly positive. They, therefore, proposed that China should pay more attention to public health issues and promote economic development by improving healthy human capital.

Jing Weimin et al. (2019) used the principal component analysis method to calculate the high-quality economic development index. They conducted an empirical analysis of the relationship between it and the human capital structure of education. The results show that the advanced level of human capital structure has a significant positive impact on the high-quality development of the regional economy, and this impact also has regional differences. The effect is particularly strong in eastern China, and it also suggests that the country should pay more attention to high-level talent. Wei Xiuhua et al. (2019) studied the relationship between human capital and economic development from an industry perspective. Based on panel data from 1999 to 2016, they analyzed the effect of human capital on the growth of the forestry economy in the south. The results show that human capital has played a key role in promoting, and the promotion effect is increasing.

Fan Rujing and Zhang Wen (2019) analyzed the impact of human capital on the coordinated development of regional economies by using panel data from Shanghai, Zhejiang, and Jiangsu from 2011 to 2015, and considering the factors of spatial correlation. The results found that education and labour quality have a more significant role in promoting the balanced development of the regional

economy than the number of labours. Cheng Mingwang (2019) analyzed the reasons for China's huge economic breakthroughs since the reform and opening-up based on China's provincial panel data from 1978 to 2015 and pointed out that technological progress and human capital are important reasons for China's rapid economic growth. These factors have a greater impact in economically developed areas, and economically backward areas rely more on capital and labour input.

Liu Wei and Zhang Liyuan (2020) used their deduced human capital quality measurement methods to measure the major economies around the world. They combined the measurement results with economic growth for analysis. The results show that the quality of human capital has strong explanatory power for the level of output per capita, and the quality of human capital in China is at a significant disadvantage compared with developed countries, and the growth rate is slowing. Based on this, to narrow the gap with developed countries, the rapid improvement of the quality of human capital is currently an extremely important part of China's development, and China's human capital and per capita output level in the next few decades are predicted.

Zhao Xiaojun and Yu Shuang (2020) analyzed the relationship between China's economic development and human capital by using provincial panel data from China's reform and opening up to 2016. In addition, the structural factors of human capital are introduced in the research process, pointing out that different stages of economic development have different requirements for human capital at different levels. Due to China's current high demand for innovative human capital, human capital with high academic qualifications will bring more effective promotion to China's economic development. In contrast, the role of low- and middle-level human capital is not obvious. At the same time, it also explained the regional development differences with the help of the analysis results. Dong Xiangyu (2020) discussed the theory and mechanism of human capital in the current economic development model based on the theory of labour factors and made a theoretical contribution to how the theory of human capital works under the new economic conditions.

In the existing studies, most of the simple two-dimensional divisions of human capital based on education and professional are lacking in the specific value of human capital at each level. Liu Zhiyong et al. (2018) borrowed the structural advanced measurement method used by the predecessor when studying the industrial structure, applied it to the measurement of human capital, and formed a structural advanced measurement method of human capital. He also pointed out that the upgrading and evolution of human capital structure can greatly advance the structure of technology and industry, and also have a certain promoting effect on economic development. It also explains the regional economic gap in China from the perspective of human capital structure. He also believes that the government should adjust the school curriculum and the degree of attention so that the human capital structure can be further developed and promote the sustainable development of the economy.

III. FOREIGN LITERATURE REVIEW

Galor & Tsiddon (1997) analyzed the relationship between human capital distribution, technological progress and economic development, and pointed out that the composition of human capital is a key element that determines economic progress. And the relationship between the distribution of human capital, the distribution of income, and economic growth is formed under the combined effect of the domestic environment and the international environment and will continue to change. Kalemli et al. (2000) analyzed the effect of the increase in life expectancy on human capital in the process of economic growth. He also pointed out that the increase in life expectancy has significantly increased the level of education and consumption. This is because the increase in life expectancy has increased the long-term income of education. It also confirmed that healthy human capital has an important role in economic growth. Asterioua & Agiomirgianakis (2001) used Greek time series data to examine the relationship between human capital and economic growth. They found that there is a positive relationship between education level and GDP per capita. There is the possibility of reverse causality between higher education and GDP per capita. Castelló & Doménech (2002) calculated the educational Gini coefficient and quintiles of 108 countries from 1960 to 2000 (5 years interval), and obtained the relevant human capital inequality Cross-country data, and pointed out that, first of all, most countries in the world are experiencing a reduction in educational inequality. Second, compared with income inequality, human capital inequality is more robust in estimating economic growth and investment.

Jones (2003) constructed an economic growth model that includes human capital and ideas, and especially emphasized the importance of ideas and technology. This model shows that education should be regarded as a kind of economic growth model. Investment should be incorporated into the economic growth model in the form of investment rate, instead of measuring education as the stock of human capital. This view effectively explains the empirical growth problem in the relationship between human capital and economic growth in the previous literature. Krebs (2003) used his incomplete market model, including physical capital, human capital and risk factors to analyze how risk factors affect human and physical capital investment choices and the relevance of economic development. It also pointed out that special labour income

with a high degree of risk may adversely affect economic growth. Engelbrecht (2003) used the Nelson-Phelps method, the Lucas method, and a combination of the two methods to construct an economic growth model, and used the human capital panel data of OECD countries to determine the applicability of the model Discussed. At the same time, an empirical test was conducted, and the results found that in the three models, human capital has a significant positive effect on economic growth.

Gyimah-Brempong & Wilson (2004) conducted a survey of healthy human capital in the Yasahara region and OECD countries. Based on this data, combined with the expanded Solow model, it is found that both the stock and investment of healthy human capital significantly positively affect the growth of the country's per capita income. He also pointed out that in sub-Saharan African countries, 22% of per capita income can be attributed to healthy human capital, while in OECD countries, the estimated value is 30%. This also shows that the per capita income gap caused by health factors is not Ignore. Based on Schumpeter's economic growth theory, Howitt (2005) constructed a brief economic growth model that includes factors such as material capital, innovation, learning ability, health, and technology to explain economic growth and the gap between rich and poor. He pointed out that health significantly affects the per capita income of a country's residents. Residents in countries with higher life expectancy and lower infant mortality have higher per capita GDP, which is also a key factor for poor and backward regions to catch up with developed regions.

Jones & Schneider (2006) analyzed the role of human capital in economic growth from the perspective of intelligence level based on the classic Bayesian model averaging method and using the national average IQ database. He pointed out that human capital has an impact on the economy. Growth has a significant positive effect, and it is proposed that if a country's average IQ increases by 1%, the country's per capita GDP will increase by 0.11%. Vinod & Kaushik (2007) used panel data from 18 developing countries from 1982 to 2001 to conduct an empirical study on the role of human capital in economic growth. It also pointed out that not only in OECD countries, but also in developing countries, education and technical human capital also have an important and positive effect on economic growth, and proposed to expand developing countries' educational opportunities, increase education and technology attention and policies. Improvement is particularly important for economic growth. Dinda (2008) studied the role of human capital in economic growth based on the Cobb Douglas function. In addition, Dinda also added formal social capital. After empirical testing of the model, the final research results show that both human capital and social capital have an impact on economic growth.

Fleisher et al. (2010) found that human capital has a significant positive impact on economic growth, and believe that investing in human capital in underdeveloped regions can help reduce regional inequality. Escosura & Rosés (2010) used panel data from Spain to analyze the impact of human capital on economic growth. It turns out that the skill premium can explain Spain's total factor productivity growth better than education. This may be due to the high-income elasticity of education itself. In addition, although human capital promotes labour productivity and technological innovation, this impact is relatively small. Faisal & Abdul (2011) used panel data from Pakistan between 1978 and 2007, based on the Cobb Douglas production function. It examines the relationship between human capital and economic growth, including health and education indicators. It turns out that human capital, including health and education status, is an important factor in determining economic growth. Therefore, recommendations are made for the health and education departments, hoping to start from the perspective of health and education to promote the country's long-term economic growth. Adelakun (2011) used the government's total expenditure on education and health to refer to human capital, and through empirical analysis once again verified the important role of human capital in economic growth, and pointed out that the government should establish more effective human capital. The capital system framework can better develop human capabilities and meet the human needs of various departments to promote economic growth.

Heckman & Yi (2012) pointed out that China's rapid economic growth since the reform and opening-up is mainly due to the rapid expansion of the number of middle-skilled labour. However, this situation is difficult to maintain in the long-term. Therefore, China should now pay more attention to the improvement of labour quality, education inequality, and reduce restrictions on labour mobility to maintain a steady increase in human capital to promote sustained economic growth. Isola & Alani (2012) use Nigeria's panel data, combined with an economic growth model that includes labour and capital. Research on the impact of economic growth from multiple perspectives of human capital, and pointed out that although the government invests a larger proportion of human capital in education, healthy human capital also plays an important role in economic growth, and this impact should not be ignored. Mehrara & Musai (2013) used panel data from some developing countries from 1970 to 2010 to conduct an empirical analysis of the relationship between the education system and the economy of the countries mentioned above. He also pointed out that education is an important driving factor for economic growth, and pointed out that if education can be more market-oriented, it may lead to faster economic growth.

Whalley & Zhao (2013), based on Schultz's human capital theory, created a new way of measuring human capital and re-evaluated the contribution of human capital to China's economic growth. Using panel data from 1978 to 2008 in China, they calculated that the contribution of human capital to economic growth in China accounted for about 38.1%. In recent years, with the expansion of university enrollment, the actual benefits of China's educational investment have declined. The decrease in efficiency may be caused by the improper distribution of physical capital and human capital. Therefore, the effectiveness of its investment should be emphasized in the process of human capital investment. Eric (2013) pointed out that because human capital is regarded as the driving force of economic growth, developing countries have shown an excessive emphasis on school education in the past, which has also led to a greater improvement in education. However, compared with developed countries, there is still a big gap in school quality in developing countries. Given the important role of cognitive skills in economic growth, developing countries should pay more attention to improving the quality of education; otherwise, it will be difficult to improve long-term economic performance.

Čadil et al. (2014) analyzed EU data and found that human capital must be compatible with the economic structure to promote economic development. Pelinescu (2015) analyzed the effect of human capital on economic growth by using panel data from some European countries. The results show that there is a significant positive relationship between innovation ability and education in human capital and economic growth. However, the share of education expenditure in GDP has a negative relationship with per capita GDP. The author believes that this effect may be due to the heterogeneity of the proportion of education expenditure among countries. Ogundari & Awokuse (2018) used panel data from 35 countries in sub-Saharan Africa from 1980 to 2008, the method based on system generalized moment estimation analyzes whether human capital can promote economic growth in these areas. The results show that human capital has a significant positive impact on the economy in terms of health and education. Still, at the same time, the impact of health factors is greater than that of education and pointed out that there is no complete substitute relationship between the two, so it should be more important Attach importance to the common development of the two types of human capital to promote economic development better.

IV. SUMMARY

Human capital has played an extremely important role in the process of promoting economic development. It has been extensively and in-depth studied by domestic and foreign scholars for a long time. And with the development of relevant theories and the deepening of research, scholars have gradually gone through a long process of development and made great progress in understanding human capital from quantity to quality to structural factors. It has made an important contribution to clarifying the relationship between human capital and economic growth. The research on the relationship between human capital and economic growth is of great significance, not only of theoretical progress but also of very important practical significance. It can explain the factors of economic growth and guide the direction of future economic development planning. Especially for developing countries, research on the relationship between human capital and economic growth has provided an important direction for the economic development of developing countries. It has also helped many developing countries achieve important economic development achievements.

REFERENCES

[1] Adelakun O J. “Human capital development and economic growth in Nigeria[J]”. European Journal of Business and Management, 2011, 3(9): 29-38.

[2] Asteriou D, Agiomirgianakis G M. “Human capital and economic growth: time series evidence from Greece[J]”. Journal of Policy Modeling, 2001, 23(5): 481-489.

[3] Čadil J, Petkovová L, Blatná D. “Human capital, economic structure and growth[J]”. Procedia Economics and Finance, 2014, 12: 85-92.

[4] Castelló A, Doménech R. “Human capital inequality and economic growth: some new evidence[J]”. The economic journal, 2002, 112(478): C187-C200.

[5] de la Escosura LP, Rosés J R. “Human capital and economic growth in Spain, 1850–2000[J]”. Explorations in Economic History, 2010, 47(4): 520-532.

[6] Dinda S. “Social capital in the creation of human capital and economic growth: A productive consumption approach[J]”. The Journal of Socio-Economics, 2008, 37(5): 2020-2033.

[7] Engelbrecht H J. “Human Capital and Economic Growth: Cross-Section Evidence for OECD Countries[J]”. Economic Record, 2003, 79(special issue): S40-S51.

[8] Faisal Sultan Qadri F, Abdul Waheed W. “Human capital and economic growth: Time series evidence from Pakistan[J]”. 2011.

[9] Fleisher B, Li H, Zhao M Q. “Human capital, economic growth, and regional inequality in China[J]”. Journal of development economics, 2010, 92(2): 215-231.

[10] Gyimah-Brempong K, Wilson M. “Health human capital and economic growth in Sub-Saharan African and OECD countries[J]”. The Quarterly Review of Economics and Finance, 2004, 44(2): 296-320.

[11] Heckman J J, Yi J. “Human capital, economic growth, and inequality in China[R]”. National Bureau of Economic Research, 2012.

[12] Howitt P. “Health, human capital, and economic growth: A Schumpeterian perspective[J]”. Health and economic growth: Findings and policy implications, 2005, 1: 19-40.

[13] Isola W A, Alani R A. “Human capital development and economic growth: Empirical evidence from Nigeria[J].” Asian Economic and Financial Review, 2012, 2(7): 813.

[14] Jones C I. “Human capital, ideas and economic growth[M]//Finance”, Research, Education and Growth. Palgrave Macmillan, London, 2003: 51-74.

[15] Jones G, Schneider W J. “Intelligence, human capital, and economic growth: A Bayesian averaging of classical estimates (BACE) approach[J]”. Journal of economic growth, 2006, 11(1): 71-93.

[16] Kalemli-Ozcan S, Ryder H E, Weil D N. “Mortality decline, human capital investment, and economic growth[J]”. Journal of development economics, 2000, 62(1): 1-23.

[17] Krebs T. “Human capital risk and economic growth[J]”. The Quarterly Journal of Economics, 2003, 118(2): 709-744.

[18] Mehrara M, Musai M. “The relationship between economic growth and

human capital in developing countries[J]". International Letters of Social and Humanistic Sciences, 2013, 5(55): 55-62.
[19] Ogundari K, Awokuse T. "Human capital contribution to economic growth in Sub-Saharan Africa: does health status matter more than education?[J]". Economic Analysis and Policy, 2018, 58: 131-140.
[20] Pelinescu E. "The impact of human capital on economic growth[J]". Procedia Economics and Finance, 2015, 22(1): 184-190.
[21] Schultz T W. "Investment in human capital[J]". The American economic review, 1961: 1-17.
[22] Vinod H D, Kaushik S K. "Human capital and economic growth: evidence from developing countries[J]". The American Economist, 2007, 51(1): 29-39.
[23] Whalley J, Zhao X. "The contribution of human capital to China's empirical data of China [J]". Economic issues exploration, 2019 (08): 9-15
[28] Dai Qian, biechaoxia. "FDI, human capital accumulation and economic growth [J]." Economic research, 2006 (04): 15-27
[29] Dong Xiangyu, Zhao Shouguo, Wang Zhongmin. From demographic dividend to human capital dividend -- Based on the consideration of new economic production mode [J]. Journal of Yunnan University of Finance and Economics, 2020,36 (02): 3-11
[30] Fan Rujing, Zhang Wen. "Research on the influence of human capital and floating population on regional economic growth differences -- An Empirical Analysis Based on the data of Jiangsu, Zhejiang and Shanghai in 2011-2015". Population and development, 2019, 25 (03): 14-26
[31] Galor O, Tsiddon D. "The distribution of human capital and economic growth[J]". Journal of Economic Growth, 1997, 2(1): 93-124.
[32] Gui Zhaoming. "Theoretical research on the contribution rate of talent capital to economic growth [J]". China talent, 2009 (23): 10-13
[33] Hu Yan, Zhang mast. Empirical Study on the contribution of human capital to economic growth -- Based on comparative analysis between Anhui and Jiangsu Province [j]. Economic longitude, 2018,35 (03): 1-7
[34] Hu Yong. "Human Capital and Economic Growth: An Empirical Analysis[J]".Economic Science,2003(01):54-60.
[35] Jing Weimin, Wang Yao, Mo longjiong. "Education human capital structure, technology transformation and upgrading and high-quality development of regional economy [J]". Macro quality research, 2019,7 (04): 18-32
[36] Lai Mingyong, Zhang Xin, Peng Shuijun, Bao Qun. "The source of economic growth: human capital, research and development and technology spillover[J]". Chinese Social Sciences,2005(02):32-46+204-205.
[37] Li Jun. "Income inequality, education investment and economic growth: an analysis based on multiple mediating effects [J]". Jinyang academic journal, 2019 (05): 92-104
[38] Li Yaling, Wang Rong. "Distribution structure of human capital and regional economic gap: An Empirical Study Based on Gini coefficient of human capital in different regions of China [J]". Management world, 2006 (12): 42-49
[39] Liu Wei, Zhang, Liyuan. "Economic development potential and human capital quality [J]". Management world, 2020,36 (01): 8-24 + 230
[40] Liu Zhiyong, Li Haizheng, Hu Yongyong, Li Chenhua. "Advanced human capital structure and economic growth -- Also on the formation and narrowing of the gap between the eastern, central and western regions [J]". Economic research, 2018,53 (03): 50-63
[41] Ma Ning, Wang Xuanhua, Rao Xiaolong. "Research on the contribution rate of human resources in Beijing's economic growth [J]". China human resources development, 2011 (04): 5-12 + 23
[42] Meng Wangsheng. "Does the gender structure of the labour force affect the efficiency of economic growth? -- an explanation of "men and women work together, not tired of working" [J]. Economic and management research, 2019,40 (09): 39-53
[43] Qian Xiaoye, Chi Wei, Li Bo. "The impact of human capital on regional innovation and economic growth in China: An Empirical Study Based on Spatial Econometrics"[J]. Research on the quantitative economy, technology and economy, 2010,27 (04): 107-121
[44] Su Yan, Fu Jin. "Measurement of the coordination between human capital and economic growth in China's provinces" [J]. Urban issues, 2019 (08): 69-78
economic growth[J]". China Economic Policy Review, 2013, 2(01): 1350001.
[24] Cao Ze, Zhu Xiaowan, Jin Xiufang, Han Xi. "Research on human capital structure and innovation drive in economic growth [J]". Regional research and development, 2019, 38 (05): 1-6
[25] Chen hanpeng, bu Zhenxing. "Measurement of human capital and empirical research on economic growth -- Based on the data of the sixth national census [J]". Chongqing Social Sciences, 2019 (11): 66-79
[26] Cheng Mingming, Jia Xiaojia, Qiu Huanguang. "China's economic growth (1978-2015): inspiration or sweat? [J]". Economic research, 2019, 54 (07): 30-46
[27] Cui Wei. "Social capital, human capital and economic growth:
[45] Wang Dihai. Health human capital, economic growth and poverty trap [J]. Economic research, 2012,47 (06): 143-155
[46] Wang Yu, Jiao Jianling. "Research on the relationship between human capital and economic growth "[J]. Management Science, 2005 (01): 31-39
[47] Wei Xiuhua, Yang Jianzhou, Cao Wei. "Interactive effects of human capital, industrial structure and forestry economic growth: An Empirical Analysis Based on the Southern Collective Forest Region" [J]. Fujian Forum (HUMANITIES AND SOCIAL SCIENCES), 2019 (12): 144-153
[48] Yang Jianfang, Gong Liutang, Zhang Qinghua. "The formation of human capital and its impact on economic growth: an endogenous growth model, including investment in education and health and its test [J]". Management world, 2006 (05): 10-18 + 34 + 171
[49] Kratika Sharma, Nitin Jaiswal, "Human Capital Management: An Emerging Human Resource Management Practice" SSRG International Journal of Economics and Management Studies 5.3 (2018): 36-41.
[50] Yang Jun, Li Xuesong. "Education inequality, human capital accumulation and economic growth: An Empirical Study Based on China"[J]. Research on the quantitative economy, technology and economy, 2007 (02): 37-45
[51] Yang Liyan, Pan Huifeng. "Human Capital, Basic Research and Economic Growth"[J]. Economic Research,2003(04):72-78+94.
[52] Yao Xianguo, Zhang Haifeng. "Education, human capital and regional economic differences "[J]. Economic research, 2008 (05): 47-57
[53] Yu Jingwen, Miao Yanqing. "Healthy human capital and regional economic growth in China" [J]. Journal of Wuhan University (PHILOSOPHY AND SOCIAL SCIENCES), 2019, 72 (05): 161-175
[54] Yuan Fuhua, Zhang Ping, Lu Mingtao. "Human capital structure in the process of long-term economic growth -- and on the gradient upgrading of China's human capital" [J]. Economic trends, 2015 (05): 11-21
[55] Zhang Aiqin, Gao Chunlei. "The impact of educational expansion and human capital on economic growth in ethnic minority areas" [J]. Ethnic studies, 2019 (03): 61-72 + 140
[56] Zhang Jinshan, Peng Shuhua, Yuan Hang. "Human capital theory and Its Enlightenment on Rural Revitalization" [J]. Taxation and economy, 2019 (03): 38-44
[57] Zhang Yu, Bai Yongxiu. "Analysis of the relationship between regional economic growth and female human capital" [J]. Journal of Northwest A & F University (SOCIAL SCIENCE EDITION), 2009,9 (01): 46-50
[58] Zhao Shasha. R & amp; D capital, heterogeneous human capital and total factor productivity: An Empirical Analysis Based on spatial correlation and regional heterogeneity [J]. Discussion on the modern economy, 2019 (03): 44-56
[59] Zhao Xiaojun, Yu Shuang. "Research on China's economic development stage and human capital structure since the reform and opening up" [J]. Economic science, 2020 (01): 5-20
[60] Zhou Xiao, Zhu Nong. "On the Effect of Human Capital on China's Rural Economic Growth"[J].China Population Science,2003(06):21-28.
[61] Zhu Chengliang, Shi Ping, Yue Hongzhi, Han Xianfeng. "Human capital, human capital structure and regional economic growth efficiency" [J]. China soft science, 2011 (02): 110-119
[62] Zhu Yimin, Zhong Qingcai. "An Empirical Analysis of the Contribution of Human Capital to Guangdong's Economic Growth"[J]. China Industrial Economy,2002(12):73-80.