

教育、土地、資本、勞動力與失業率 對經濟發展影響的跨國研究

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人力資本、土地資源、資本、勞動力，失業率與經濟發展有密切關係。上述生產因素與失業率，哪一項對經濟發展最重要呢？本研究以 2010、2015、2016 年各國的土地資源、資本、勞動力、高等教育在學率與失業率對國民生產毛額分析。結論顯示：土地資源、資本、勞動力與高等教育在學率對經濟發展都有正向影響，其中高等教育在學率對經濟發展的貢獻解釋力在 29.4%至 31.1%，在生產要素中最重要；其他三要素在三個年度不僅重要性都在它之後，且隨著年度推移對經濟發展貢獻僅在 2.2%至 10.5%。各國在三個年度的失業率對經濟發展具有負向影響，對經濟發展解釋力各為 2.2%、2.8%、5.2%。代表各國經濟發展過程，除了生產要素重視，高等教育在學率具有關鍵影響之外，失業率也是不可以忽略因素。

臺灣的面積為 36,197 平方公里，2015 年的總人口數為 2,346 萬人，平均每平方公里人口為 648 人，是全球人口最密集地區之一。臺灣的自然資源相當少，近數十年來，促進臺灣經濟發展的重要因素是政府投資教育，累積了大量的人力資本，以及政府有良好的經濟發展策略因應。尤其 1980 年至今，臺灣面對不同國際發展情勢及國內經濟發展轉型，提出了不同階段的國家人力發展計畫，其中對人力發展供需進行估計，調節勞動市場的人力供需，以因應國家經濟發展需求，促進經濟發展。例如，1980 年代推動經濟自由化與發展技術密集產業；1990 年代推動亞太營運中心與發展資訊產業；2000 年代推動知識經濟與接軌國際經貿體制；2010 年代之後推動產業創新與全球連結等。這些

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經濟發展政策，臺灣都能提出人力發展計畫，以配合國家發展的人力需求，因此國家與經濟及產業發展都有其重要的人力資本支持。因此，臺灣不僅每年勞動者失業率在 5% 以下，而且平均國民生產毛額更不斷提升。這有一部分要歸因於政府對於人力資本的投資與累積所帶來的效果。

然而臺灣於 1995 年之後，打破菁英式高等教育政策，讓更多高等教育學齡人口接受高等教育。因而在高等教育擴張之後，過量教育問題隨之浮現。所幸雖然臺灣有過量教育問題，但據估計高等教育畢業者的教育收益仍然維持在 8% 左右，依然符合世界發展趨勢。這說明了臺灣雖然過量教育問題，但是在大學畢業生仍有一定的教育收益率。可見，臺灣教育投資的人力資本仍有其價值效益存在，然而為了避免持續過量教育衍生的人力供需失衡、人力資本貶值及人力閒置，臺灣應在未來持續估計高等教育發展，以與各國發展接軌。也就是，臺灣應以各國經濟發展平均趨勢，從各國經驗中找出較為合宜的高等教育擴充模式。

例如張芳全、蓋浙生（2018）以 2017 年一百多個國家的迴歸分析模式，做為未來高等教育在學率的移動平均方向，他們研究指出，臺灣在不同經濟發展階段的高等教育在學率之可能性，臺灣在每人平均國民所得為 25,000 美元及 30,000 美元，高等教育在學率為 79.1% 與 84.1%，而在 35,000 美元時，高等教育在學率才可以達到 89.1%。在生產要素對經濟展貢獻中，高等教育在學率是重要因素，但是為了避免過量教育，仍需要考量臺灣的經濟、社會及教育發展狀況，透過科學化評估做為高等教育擴充參考，才不會因為過量教育與失業問題而影響經濟發展。換言之，臺灣應嚴謹的透過適切數據資料科學分析，評估未來高等教育擴充，以避免過度擴充高等教育而影響了經濟發展。

本研究除了針對結論建議各國應持續人力資本投資、降低失業做為國家發展策略，而且應證人力資本理論，並對各國發展有實務啟發、創新與貢獻。

關鍵詞：人力資本、失業率、高等教育在學率、經濟發展

A Transnational Study on the Contribution of the Education, Land, Physical Capital, Labor, and Unemployment Ratio to Economic Development

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Human capital, land resources, capital, labor, and unemployment rates are closely related to national development. However, among these production factors and the unemployment rate, which is the most important to economic development? This study aimed to analyze the contribution of these factors to gross domestic per capita in 2010, 2015, and 2016, respectively. The results were as follows: The land resource, capital, labor, and the higher education enrolment rate have a significant and positive impact on development. Specifically, the explanatory power of higher education enrolment rate to development was between 29.4% and 31.1%, which was the most important among the production factors. The other factors were important behind the higher education enrolment rate in the three years, but these factors also significantly contributed to the development between 2.2% and 10.5%. In the three years, the unemployment rate had significantly and negatively affected development, and its explanatory power for the development was 2.2%, 2.8%, and 5.2%, respectively. This means that in the development process, besides higher education enrolment rate being the key factor that impacts development, unemployment rate also plays a significant role that cannot be ignored.

With an area of 36,197 square kilometers, Taiwan has a total population of 23.46 million in 2015, with an average population of 648 people per square kilometer, making it one of the most densely populated areas in the world. Taiwan's natural resources were relatively few. In recent decades, crucial factors that have promoted Taiwan's economic

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growth have been the government's investment in education, the accumulation of a large amount of human capital, and the government's sound economic development strategy. Especially since 1980, in the face of different international development situations and domestic economic development transformation, Taiwan has put forward national human development plans at various stages, in which the supply and demand of human development are estimated. The supply and demand of labor in the labor market are adjusted to meet the needs of national economic development and promote economic growth. For example, in the 1980s, it promoted economic liberalization and the development of technology-intensive industries; in the 1990s, it promoted the Asia-Pacific operation center and the development of the information industry; in the 2000s, it promoted the knowledge economy and the integration of the international economic and trade system; after the 2010s, it promoted industrial innovation and global connectivity. With these economic development policies, Taiwan can put forward human development plans to meet the human needs of national development. Therefore, the country's economic and industrial development had important human capital support. Hence, not only does the unemployment rate of workers in Taiwan fall below 5% each year, but the average gross national product keeps increasing. This was partly due to the effects of the government's investment and accumulation of human capital.

However, after 1995, Taiwan broke the elite higher education policy and allowed more people of higher education school age to receive higher education. Therefore, the issue of excess education emerged after the expansion of higher education. Fortunately, despite the over-education problem in Taiwan, it is estimated that the educational income of higher education graduates remains at around 8%, which is still in line with the world's development trend. This showed that despite the over-education problem in Taiwan, university graduates still had a certain rate of return to education. It can be seen that the human capital invested in Taiwan's education still had its value and benefits. However, to avoid the imbalance of human supply and demand, the devaluation of human capital, and the idleness of human resources caused by continuous excessive education, Taiwan should continue to estimate the development of higher education in the future to be in line with the development of other countries. That is to say, Taiwan should use the average trend of

economic development of various countries to find a more appropriate mode of higher education expansion from the experience of different countries.

Chang and Gai (2018), for example, used the regression analysis model of more than 100 countries in 2017 as the moving average direction of the enrollment rate of higher education in the future. Their research pointed out the enrollment rate of higher education in Taiwan at different stages of economic development. Taiwan's average national income per person was between 25,000 US dollars and 30,000 US dollars. The higher education enrollment rate was between 79.1% and 84.1%. For those earning an annual income of 35,000 US dollars, the higher education enrollment rate reaches 89.1%. Among the contributing factors of production to economic development, the enrollment rate of higher education was an important factor. However, to avoid excessive education, it was still necessary to consider Taiwan's economic, social and educational development, as excessive education and unemployment will affect economic development. In other words, Taiwan should rigorously evaluate the future expansion of higher education through appropriate scientific data analysis to avoid excessive expansion of higher education that affects economic development.

In addition to suggesting that countries should continue to invest in human capital and reduce unemployment as national development strategies, this study also supported the theory of human capital and had practical inspiration, innovation, and contributions to the development of countries.

Keywords: *Economic Development, Higher Education Enrolment Rate, Human Capital, Unemployment Rate*