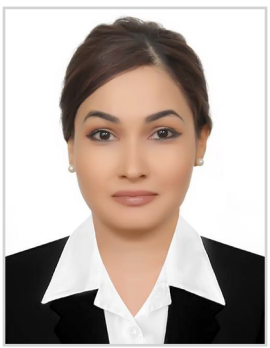

**ECONOMIC ANNALS-XXI**
ISSN 1728-6239 (Online)
ISSN 1728-6220 (Print)
https://doi.org/10.21003/ea
http://ea21journal.world

Volume 207 Issue (1-2)'2024

Citation information: Abdullaeva, B., Abdullaev, D., Kholmurodova, D., Rakhmatova, F., & Tashtemirova, G. (2024). The role of higher education in economic development and reducing the unemployment rate: a comparative study of developing countries. Economic Annals-XXI, 207(1-2), 10-15. doi: https://doi.org/10.21003/ea.V207-02

**Barno Abdullaeva**
PhD (Mathematics), Professor, Department of Mathematics and Information Technologies,
Vice-Rector for Scientific Affairs,
Tashkent State Pedagogical University
103 Yusuf Xos Xojib ko'chasi Str.,
Tashkent, 100070, Uzbekistan
barno.abdullaeva.72@mail.ru
ORCID ID:
https://orcid.org/0000-0003-3648-4601

**Diyorjon Abdullaev**
PhD (Pedagogics),
Department of Scientific Affairs,
Vice-Rector for Scientific Affairs,
Urgench State Pedagogical Institute
1-A Gurlan Str., Urgench,
220100, Uzbekistan
editory1001@gmail.com
ORCID ID:
https://orcid.org/0000-0001-8560-5604



**Dilnoza Kholmurodova**
PhD (Pedagogics),
Dean, Faculty of Joint Education Programs,
Samarkand State Institute of Foreign Languages
93 Bustonsaroy Str., Samarkand,
Samarkand Region, 140104, Uzbekistan
sherzodbek4810@mail.ru
ORCID ID:
https://orcid.org/0009-0006-1747-4685

**Feruza Rakhmatova**
PhD (Pedagogics), Associate Professor,
Head, Department of Educational Theory of Pedagogy,
Jizzakh State Pedagogical University
4 Rashidov Str., Jizzax, Jizzax viloyati, 130100, Uzbekistan
laylo.djuraeva@gmail.com
ORCID ID: https://orcid.org/0000-0002-5607-8136

**Gulnoza Tashtemirova**
PhD (Pedagogics),
Department of Primary Education Pedagogy,
Tashkent State Pedagogical University
103 Yusuf Xos Xojib ko'chasi Str., Tashkent, 100070, Uzbekistan
author.uzb@mail.ru
ORCID ID: https://orcid.org/0000-0001-5545-661X

# The role of higher education in economic development and reducing the unemployment rate: a comparative study of developing countries

**Abstract.** Education is the basic pillar and foundation of all-round development in any country. The impact of higher education on subject development is undeniable. Applicable education alignment with the industry and business in society is required to economic growth, however, the unbridled and unplanned increase of higher education institutions and the number of students is not the basis for achieving development.
In this research, an attempt is made to investigate the effect of research and development costs in the higher education sector in developing countries on economic growth in three areas: the quantitative indicators of higher education, the application and efficiency of higher education, and the creation of employment. The method of this comparative study is quantitative and the data collection of the country of Uzbekistan has been analyzed using a statistical approach.
The results of model estimation using the data of 2014-2023 for the country of Uzbekistan show that the amount of research and development expenses in the higher education sector has a positive and significant effect on economic growth. Also, in the estimated model, the amount of growth of the workforce and the amount of physical capital (non-cash capital of the company) have a direct impact on economic growth. The amount of research and development expenses in the higher education sector with the variable of applied education has the most impact on the growth of manpower and the amount of physical capital stock on the growth of the gross domestic product.

**Keywords:** Economic Growth; Higher Education; Employment; Workforce; Expenses; Costs
**JEL Classifications:** E24; E41; E64; I18; J28; J31
**Acknowledgements and Funding:** The authors received no direct funding.
**Contribution:** The authors contributed equally to this work.
**Data Availability Statement:** The dataset is available from the authors upon request.
**DOI:** https://doi.org/10.21003/ea.V207-02

## 1. Introduction and Brief Literature Review

The interweaving of education and employment structures is one of the important features of any successful economic system; The fundamental relationship between work and education is always mentioned in economic and social planning as one of the ways to reduce unemployment. Today, the training of entrepreneurial and skilled forces and the expansion of skill training are on the agenda. Despite the fact that the democratization and generalization of higher education was expected to bring development in all parts of the world, its effects in the world led to different results, according to the economic, social and political context, its relative weight has varied from one university to another. As Yang & Chan (2017) state, the result of such a transformation is not necessarily accompanied by development in all countries. In this connection, Qazi et al. (2017) point out that the development and democratization of the higher education system has given more people access to education, but in some parts of the world, it has contributed little to economic development.

Abdullah et al. (2022) believe that the success of investing in human capital depends on the characteristics and conditions of the labor market, and the economic growth and development of countries depends on their competitive advantage. Ragmoun (2023) emphasizes that investment in higher education, especially for countries with high income and development levels, is the main predictor of economic growth and development. In this regard, Yongjin (2011) states that the institutionalization of competition in the economy and the need for professionals will lead to the emergence of a growing demand for wide access to universities and higher education institutions to produce a knowledge-oriented, competent and competitive workforce. Competition in the economy strengthens the quality of higher education and increases its accountability. It is in such a context that universities succeed in giving birth to companies that link academic research to entrepreneurship in scientific and research parks and towns by attracting academics (Tjahjanto et al., 2023; Purwanti et al., 2023). In this type of economy, research and its application is emphasized and with the activity of university research parks, companies are located near university for purpose of potential synergy and turn university knowledge into an economic brand.

Over the recent years, we have witnessed the expansion of higher education in Uzbekistan in line with most developing countries; However, it is necessary to pay special attention to the equality, proportionality and quality of higher education at the same time in the post-communization stage. In this regard, high quality along with increasing accessibility should be regarded as two sides of the education development; since high access to low-quality higher education and high-quality education with low access are not working. Quantitative growth can never reduce the problems of society if it is not accompanied by qualitative growth. If there is no qualitative growth in higher education along with that, an army of mediocre graduates will be trained who will be a burden on society (Giang, 2020). At this stage, it is necessary to implement quality assurance and monitoring mechanisms in all departments of higher education and to become the headline of all programs and policies of those involved in higher education, and finally, to become a discourse in the society in order to increase access and provide conditions for completing education. However, policies should be adjusted in such a way that increasing the quality of higher education and emphasizing rigid criteria and standards for entering the university do not hinder people's choice and equality in education (Eneji et al., 2013); Therefore, the goal should be participation and successful completion, along with ensuring student welfare and appropriate material and educational support for the poor and marginalized communities. Also, the world economy and economic globalization affect the relationship between the development of higher education and economic development. Snieska et al. (2015) believe that countries with more open economies have higher growth rates; Therefore, the success of investing in human capital depends on the characteristics of labor market conditions and perfect competition (Algül, 2024). The increase in human capital reserves accelerates the economic growth rate when it is accompanied by an outward-looking economic structure, otherwise education will not have a significant effect on economic growth. The

externalization of the economy causes the interaction of economic enterprises with universities and academic centers, and by influencing the functioning of universities, it changes the effect of universities and the higher education system on economic growth and development.

In this research, to evaluate the impact of higher education on economic development, the factors affecting economic development as well as the variables of higher education have been identified and the impact of each of these factors has been evaluated. As it was clear from the theoretical literature and previous researches, they mainly emphasize the relationship between education and its quality with development. Therefore, according to the researches reviewed about the quantitative and qualitative relationship between higher education and economic development, the theoretical model of the research is presented in Figure 1.

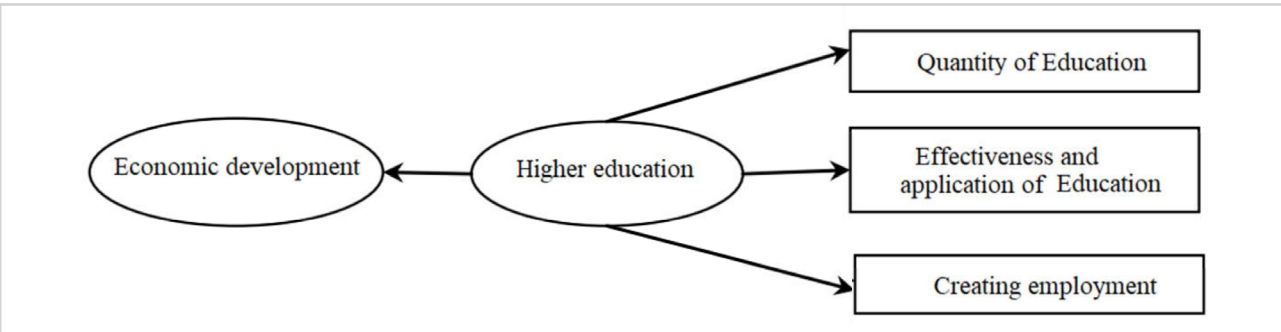



Figure 1:
**Research model**
Source: Authors' own research

## 2. Methodology

The current research is of a quantitative and comparative type using the data analysis method obtained from the Ministry of Higher Education and the Ministry of Economy in Uzbekistan during the years 2014-2023. The collected data included the questionnaires completed by the experts and the output statistics of the two ministries of Uzbekistan. In some cases, the data were completed by using the method of repeating and averaging the scores to prevent the loss of samples. In this case, the system input is the amount of changes in higher education variables, which include the quantitative parameters of education (the number of university graduates), the efficiency and application of education (academic research and knowledge production), employment creation (the connection of university with the market and industry and employment after or during the education). The economic development was evaluated based on four factors: Gini coefficient, inflation rate, unemployment rate and purchasing power parity - GDP.

Gross domestic product (GDP) is one of the measures of the size of the economy. GDP includes the total value of goods and services that are produced in a country during a certain period, usually one year. In this regard, final products and those that are placed at the end of the production chain and they do not purchase other products and services. Examining the conditions of economic growth in selected countries shows that many factors are effective on economic growth, among these factors we can refer to the growth of the workforce, physical capital stock, research and development costs. The statistical sample used in this research is the higher education and economic statistics of Uzbekistan. In this article, in order to investigate the effect of research and development costs in the higher education sector on economic growth, the following function is used (Manullang et al., 2024):

$$GDPit = \text{function}\ (GDP_{i(t\text{-}1)}, CAPITAL_{it}, EMPLOYG_{it}, HEDURD_{it}), \quad (1)$$

where:
$GDPit$ presents the growth rate of gross domestic product in $i_{th}$ country in $t_{th}$ time;
$GDP_{i(t\text{-}1)}$ is the rate of growth of the gross domestic product in the $i_{th}$ country at the time $t$-1;
$EMPLOYG_{it}$ is the amount of physical capital stock in country $i$ at time $t$;
$HEDURD_{it}$ is the amount of research and development costs in the higher education sector in country $i$ at time $t$-1.
$CAPITAL_{it}$ is the amount of the capital in country $i$ at time $t$.

## 3. Results

The results of the hierarchical regression test to some extent confirm the findings of the correlations of higher education and economic variables. Hierarchical regression shows the effect of adding any variable or variables in explaining the dependent variable. According to the findings reported in Table 1, it can be seen that the variable of the quantity of higher education explains the least impact on the variable of economic development. This means that the increase in the number of university graduates without considering the market and industry and creating a balanced balance cannot have a positive effect on the economic parameters, and therefore, a mere quantitative expansion, the unbridled entry of students with heterogeneous motives and goals into the higher education system, especially in developing countries that do not have long-standing university traditions will decrease the minimum quality of the previous elitist educational and research systems and create a crisis and challenge in its internal functions. Contrary to that, the variables of efficiency and application of education and job creation have the greatest impact on economic variables, so that the efficiency and application of higher education can reduce the Gini coefficient and inflation rate by 30%.

Table 1:
**The effect of education variables on economic performance variables**

| Variable | Gini coefficient | Inflation rate | Unemployment rate | Purchasing power |
|---|---|---|---|---|
| Quantity of education | -0.19 | -0.11 | 0.12 | -0.08 |
| Efficiency and application of education | -0.33 | -0.31 | -0.38 | 0.25 |
| Creating employment | -0.22 | -0.25 | -0.35 | 0.22 |

Source: Authors' own research

Skill training can play an important and key role in creating productive and sustainable employment in the society, in addition to the training of efficient and expert personnel in order to supply the labor market, and in the current situation, skill training is an integral part of achieving national self-sufficiency. The main goal of skill training is to train a skilled and capable workforce; A force that has up-to-date knowledge and skills can play an effective role in sustainable development, and in fact, the use of human resources is one of the requirements to achieve development.

Currently, many countries have moved towards skill training and are looking for its development; Because having skills in any field is the first priority. Emphasizing the important and special role of skill training at the community level, skill, technical and professional training is considered as the most key component of development and the only way to pass the development path of the country is to pay attention and expand skill training in the society.

By looking closely at the general policies of the system and the rules of the program, the importance of skill training and the need to pay attention in development programs to the creation of the necessary mechanisms for coordination in the policy making and implementation of professional qualifications, internships and internships and empowering the workforce is clarified. Achieving these lofty goals, which play an irreplaceable role in achieving sustainable development and achieving the goals of a resilient economy, is not possible without long-term plans, appointing trustees, coordination, and having information about the labor market and its needs.

Neglecting skill training in development programs in the country will cause the country's need for technical and skilled manpower to face a crisis. Therefore, in the laws and decrees of the 7$^{th}$ development program of Uzbekistan, special attention should be given to skill training and detailed and serious solutions should be considered for this issue so that this vital part of the country's higher education is not neglected.

On the other hand, in sustainable development, the phenomenon of social capital is seen as an executive factor of poverty alleviation. In this social capital, the employee and skilled worker are the output of skill training. The goals of this strategy, regardless of the classical approach and purely theoretical training in higher education, can be joint programs between skill training and the labor market.

Meanwhile, one of the basic challenges of the country is the unemployment crisis, which despite the government's efforts, its consequences still cast a shadow on various political, economic and cultural sectors of the country. To solve this problem, effective and quick measures should be taken in the economic, political, social and cultural fields, one of which is attention to the quantitative expansion and qualitative improvement of technical and skill training in the country in the upcoming development programs.

World Bank researches (Cohen & Soto, 2007) show that focusing on human capital in higher education can cause efficacy in economic growth, and statistical data in some cases of the world has shown that the social profit on investment in higher education section is high, and this leads to more investments in this section. It should be noted that in this information, the rate of return evaluates just the economic profits resulting from higher education; while the positive effects and cultural, political and social added value are not included in this research. The costs incurred in the higher education sector include direct costs (including tuition fees), general education subsidies, technological facilities, research costs and educational construction.

According to Figure 2, it can be seen that the amount of changes in GDP has been increasing since 2014-2019, so that the growth of GDP has increased from 1.8% to 4%, but in 2022-2019, due to the economic crisis caused by the Corona virus and the decrease of the economic value, the amount of changes in GDP has taken a downward trend, so that in 2022, the amount of changes in GDP has reached -01.8% and after the end of Corona, this trend is improving. Consequently, the employment rate follows up the GDP trends in 2012-2023 which is shown in Figure 3.

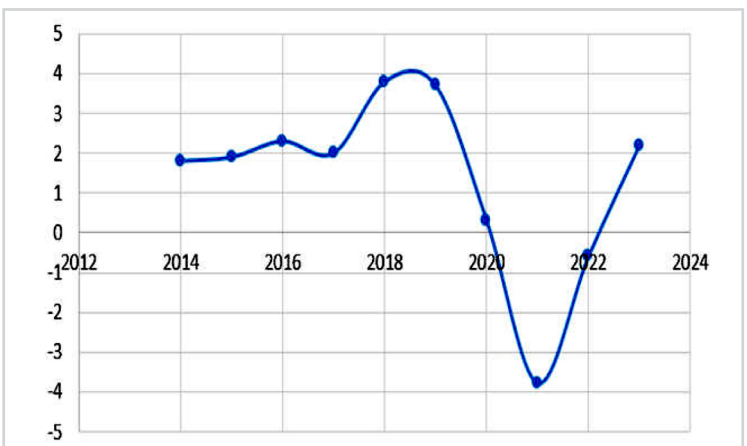



Figure 2:
**GDP rate**
Source: Authors' own research

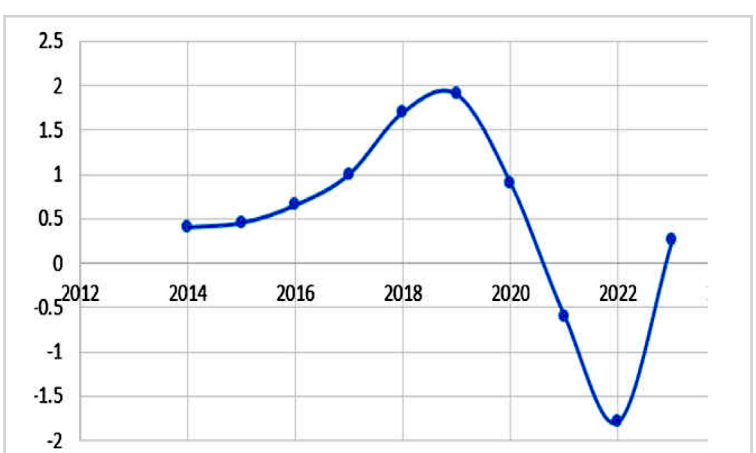



Figure 3:
**Employment rate**
Source: Authors' own research

## 4. Conclusion

In today's world, where science and technology are rapidly growing in the world, higher education institutions play a more important role in the economic, social and cultural development. That is why we evaluated the impact of higher education on economic development and reducing the unemployment rate. The research was done in the Uzbekistan in the period of 2014-2023. Overall, the findings show that in the long run, the expansion of educational opportunities will have the greatest impact on economic growth, which indicates the high importance of higher education in accelerating the country's economic development. Also, with an increase in the rate of educated

and skilled manpower, economic growth will increase. Furthermore, the results show a significant and direct link between the quantity of higher education graduates and employment rate, whilst by increasing of the higher education graduation by the 38%, the employment rate increased by about 12%. This proves the impact of human capital on economic growth. However, the skill-based education can be more useful. According to the results of this study, it can be concluded that spending on higher education, research and development has a direct impact on increasing economic prosperity. Therefore, developing countries should consider spending on higher education as a strategic national investment to move towards a knowledge-based economy.

## References

1. Abdullah, N. S. S., Majid, M. Z. A., & Hussin, M. (2022). Systematic literature review of higher education and unemployment in Asian countries. International Journal of Academic Reserach in Economics and Management Sciences, 11(1), 63-81. https://doi.org/10.6007/IJAREMS/v11-i1/12141
2. Algül, Y. (2024). Higher Education and Unemployment in Turkey: Regional Panel Analysis with Undergraduate, Master's, and PhD Perspectives. Trends in Business and Economics, 38(2), 128-136. https://doi.org/10.16951/trendbusecon.1473077
3. Cohen, D., & Soto, M. (2007). Growth and human capital: good data, good results. Journal of economic growth, 12, 51-76. https://doi.org/10.1007/s10887-007-9011-5
4. Eneji, M. A., Mai-Lafia, D., & Weiping, S. (2013). Socio-economic impact of graduate unemployment on Nigeria and the vision 20:2020. International Journal of Development and Sustainability, 2(1), 148-176. https://isdsnet.com/ijds-v2n1-12.pdf
5. Giang, N. T. (2020). Long-run Relationship of Economic Growth with Consumption, Unemployment Rates and Saving Rates in Developing Countries: A Case Study of Vietnam. Journal of Business and Management Sciences, 8(2), 61-66. https://pubs.sciepub.com/jbms/8/2/4/index.html
6. Manullang, R. R., Amran, E., Syofya, H., Harsono, I., & Awalauddin. (2024). The Influence of Government Expenditures on the Human Development Index with Gross Domestic Product As A Moderating Variable. Reslaj: Religion Education Social Laa Roiba Journal, 6(4), 2059-2068. https://doi.org/10.47467/reslaj.v6i4.2039
7. Purwanti, M., Afif, M., Siahaan, R., Khairiah, K., Suganda, D. A., & Sharipov, Sh. (2023). Education management impact on the financial performance of companies: a case study of IT companies in Indonesia. Economic Annals-XXI, 206(11-12), 41-45. https://doi.org/10.21003/ea.V206-07
8. Qazi, W., Raza, S. A., & Sharif, A. (2017). Higher education development and unemployment in Pakistan: Evidence from structural break testing. Global Business Review, 18(5), 1089-1110. https://doi.org/10.1177/0972150917710344
9. Ragmoun, W. (2023). Institutional quality, unemployment, economic growth and entrepreneurial activity in developed countries: a dynamic and sustainable approach. Review of International Business and Strategy, 33(3), 345-370. https://doi.org/10.1108/RIBS-10-2021-0136
10. Snieska, V., Valodkiene, G., Daunoriene, A., & Draksaite, A. (2015). Education and unemployment in European Union economic cycles. Procedia-social and behavioral sciences, 213, 211-216. https://doi.org/10.1016/j.sbspro.2015.11.428
11. Tjahjanto, H., Tuhana, T., Mafruhah, I., Istiqomah, N., & Ismoyowati, D. (2023). High unemployment, disrupted economic growth and sustainable development goals: Analyzing unemployment reduction. Economics & Sociology, 16(1), 106-120. https://doi.org/10.14254/2071-789X.2023/16-1/7
12. Yang, Ch.-Ch., & Chan, Sh.-J. (2017). Is Higher Education Expansion Related to Increasing Unemployment Rates?: A Comparative Analysis of Japan, South Korea, and Taiwan. International Journal of Chinese Education, 5(2), 162-186. https://doi.org/10.1163/22125868-12340066
13. Yongjin, S. (2011). Government size, economic growth and unemployment: Evidence from advanced and developing economy countries (a time series analysis, 1996-2006). International Review of Public Administration, 16(2), 95-116. https://doi.org/10.1080/12264431.2011.10805198

*Received 9.01.2024*
*Received in revised form 19.01.2024*
*Accepted 23.01.2024*
*Available online 22.02.2024*