



ECONOMIC EFFICIENCY OF INVESTMENTS IN HUMAN CAPITAL

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Abstract.: *This article analyzes the economic efficiency of investments in human capital within the context of foreign countries and Uzbekistan. Through statistical indicators, it highlights the intrinsic link between the growth of funding for education and healthcare and the subsequent rise in Gross Domestic Product (GDP), real population income, and labor productivity. The research findings demonstrate that investments in human capital serve as a critical factor in accelerating economic growth rates and enhancing national competitiveness.*

Keywords: *Investments in human capital, Gross Domestic Product (GDP), population income, labor productivity, economic efficiency.*

INTRODUCTION

In recent years, the importance of human capital in global and national economies has grown significantly, emerging as a primary factor directly influencing societal well-being and economic stability. Human capital is regarded not only as a fundamental determinant of labor force quality but also as a core source of national economic growth, production efficiency, innovative potential, and competitiveness. Investing in human capital – specifically through education, vocational training, healthcare, and continuous professional development – ensures a highly skilled workforce, enhances productivity, facilitates job creation, and contributes to the growth of Gross Domestic Product (GDP).

Human capital represents the aggregate of intellectual and physical resources that enhance labor productivity and expand an individual's economic potential [1]. By investing in human capital factors, the productivity of the workforce increases, leading to a rise in per capita income. In turn, skilled and healthy human resources strengthen the competitiveness of the national economy and ensure the sustainable growth of GDP. Research indicates that each additional year of education increases an individual's income by approximately 10 percent; thus, every investment in education yields a significant positive impact on the subsequent professional activity of an educated employee [2]. Consequently, the more resources allocated to education and healthcare, the greater the productive capacity of the workforce.

According to economist Saite Lu, economic theory suggests that higher levels of human capital enhance labor productivity, thereby increasing a country's GDP



per capita [3]. In essence, the long-term effect of investment in human capital creates the foundation for an innovation-driven economy and qualitative growth within society.

Among local scholars, research on investments directed toward human capital and their socio-economic outcomes has been conducted by K.Kh. Abdurakhmanov, N.K. Zokirova [4], A.B. Irmatova [5], and others.

Analysis and Results

Investments in human capital are interpreted as actions aimed at enhancing an employee's labor productivity through education, vocational training, or healthcare. In other words, investments directed toward human capital are not only effective in increasing individual earnings but also boost labor productivity at the enterprise level and ensure the continuity of economic growth rates at the national level. This is because the employee perceives the economic efficiency of the capital invested in them through their personal income, the enterprise gains higher production results from this process, and society as a whole benefits from the rise in gross output and competitiveness indicators. [6] In short, every additional expenditure on labor resources yields economic benefits by enabling them to work faster and more efficiently.

Investing in human capital is not conducted solely through educational institutions and the healthcare system; it is also intrinsically linked to processes such as foreign investment. According to recent research, a high level of human capital combined with foreign direct investment (FDI) provides a positive impetus for economic growth. Particularly, given the high potential of the local workforce, the necessity of technology transfer through foreign investment brings additional gains in productivity.

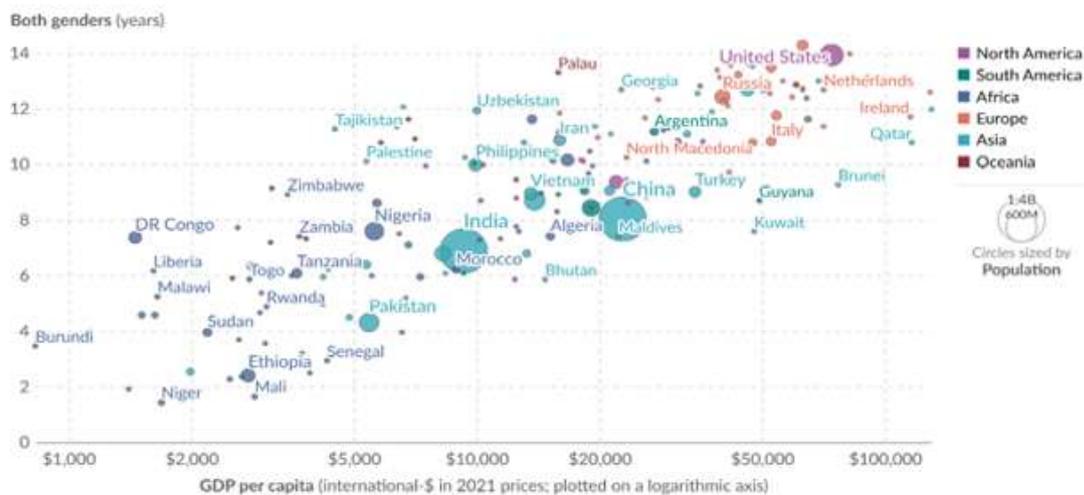


Figure 1. Correlation between average years of schooling and GDP per capita across countries (2023) [7]

Figure 1 illustrates the disparities between countries in 2023 regarding average years of schooling and Gross Domestic Product (GDP) per capita. It



demonstrates that countries with higher levels of education also possess higher levels of economic development. The highest indicators are primarily observed in developed nations. Specifically, in countries such as the USA, the Netherlands, and Ireland, the average duration of education for the labor force is approximately 13–14 years, with GDP per capita exceeding 50,000 USD. It is evident that long-term investments in human capital in these countries have ensured high labor productivity, technological progress, and sustainable economic growth. Conversely, in nations like Burundi, Niger, and Mali, the average years of schooling hover around 2–4 years, resulting in very low GDP per capita. This situation indicates that insufficient investment in education limits economic opportunities and complicates the transition out of the poverty cycle.

Uzbekistan is positioned within the middle-income group, with an average of 12 years of education and a GDP per capita of approximately 10,000 USD (PPP). While this indicator shows that educational coverage in Uzbekistan is relatively high, it also signifies the necessity of enhancing educational quality, vocational training, and scientific potential to increase the economic efficiency of human capital. In particular, aligning higher education, as well as technical and vocational training, with labor market demands will expand economic growth opportunities. According to the data reflected in the graph, investments directed toward human capital, especially education, are a vital factor in economic development. As the duration and quality of education increase, so do labor productivity, income, and public welfare. Therefore, for Uzbekistan, investments in the education and healthcare systems remain one of the most critical strategic directions for yielding high economic efficiency in the long run.

In recent years, Uzbekistan has also been developing large-scale policies focused on human capital. In the Development Strategy of New Uzbekistan for 2022-2026, the development of human capital is designated as a priority area of socio-economic policy, as its contribution is essential for the development of an innovative economy and cutting-edge technologies. [8]

The government of Uzbekistan has drastically increased funding for education and healthcare, striving to form a skilled workforce reserve rich in investment. Specifically, according to data, state budget allocations for the education and health sectors increased sevenfold and sixfold, respectively, between 2017 and 2024. Consequently, the enrollment rate in higher education rose from 8.3 percent to 47.7 percent – a shift that will serve to prepare a highly qualified workforce and strengthen national competitiveness in the near future. [9]

Table 1

Efficiency of Investments in Human Capital in Uzbekistan [10]

Indicators	2019	2020	2021	2022	2023	2024
Gross	59	668	820	995	1,20	1,53



Domestic Product (GDP), billion UZS	4,660	,038	,537	,573	4,485	5,432
Total real income of the population, billion UZS	33 3,003	381 ,814	485 ,835	587 ,754	687, 537	817, 470
Real income per capita, thousand UZS	9,9 16.6	11, 153.7	13, 914.7	16, 487.7	18,8 81.9	21,9 91.9
Volume of investments in fixed capital, billion UZS	19 5,927	210 ,195	239 ,553	266 ,240	356, 071	507, 490
Number of higher education institutions	11 9	127	154	191	219	207
Expected years of schooling	13. 3	13. 4	14. 0	14. 5	14.3	14.3
Life expectancy at birth (years)	75. 1	73. 4	73. 8	74. 3	74.7	75.1

The data in Table 1 indicates a stable correlation between investments directed toward human capital and their socio-economic outcomes in Uzbekistan from 2019 to 2024. During the analyzed period, the Gross Domestic Product (GDP) demonstrated a consistent upward trend, rising from 594,659.6 billion UZS in 2019 to 1,535,432 billion UZS by 2024. This signifies an expansion of economic activity and an increase in production potential. This process is also reflected in the dynamics of real population income; the total volume of real income increased nearly 2.5 times, while real income per capita reached 21,991.9 thousand UZS from 9,916.6 thousand UZS, indicating a significant improvement in living standards.

The sharp increase in the volume of investments in fixed capital between 2019 and 2024, reaching 507,490.2 billion UZS in 2024, suggests an acceleration of modernization processes and the strengthening of long-term growth factors within the economy. This situation is directly linked to human capital, as increased



investment creates a foundation for improvements in education, healthcare, and labor productivity. According to the table, the number of higher education institutions grew from 119 in 2019 to 219 in 2023, representing a substantial expansion of educational infrastructure despite a slight contraction in 2024. Simultaneously, the increase in expected years of schooling from 13.3 to 14.3 years reflects an enhancement in the knowledge and skill levels of the population.

Positive shifts in the healthcare sector are evident in the life expectancy indicator, which, after a decline during the pandemic years, has returned to 75.1 years. Overall, the data confirms that investments in human capital have a significant impact on economic growth, the rise in real population income, and the improvement of social welfare, thereby justifying the importance of continuing policy initiatives in this direction.

Conclusion and Recommendations

In conclusion, investments in human capital enhance economic efficiency across multiple levels. First, at the individual level, each additional year of schooling and professional qualification leads to an increase in employee income and labor productivity. Second, at the corporate level, it boosts production efficiency and expands the scale of output. Third, at the societal level, such investments yield a significant positive effect by increasing the competitiveness of the national economy and expanding the volume of Gross Domestic Product (GDP).

In Uzbekistan, the state has identified the strategic development of human capital as a primary objective; consequently, the share of budget allocations for education and healthcare is rapidly increasing, and a new human resource policy is being implemented. As these indicators advance, they facilitate the acquisition of a highly skilled workforce and ensure economic competitiveness. The synergistic effect of foreign direct investment (FDI) and human capital in Uzbekistan has also had a substantial and positive impact on economic indicators. Specifically, by attracting a high-potential workforce, investors are inclined to import new technologies and knowledge, which serves to enhance competitiveness and gross output. These observations suggest that investment in human capital not only manifests in income growth within society but also enriches the economic structure through international cooperation and investment flows.

Overall, investments in human capital yield a profound long-term positive impact. The economic efficiency of this factor is clearly visible in the fields of education and health, as well as in professional retraining and innovative vocational training. Thus, human capital is the guarantee of sustainable economic growth and a prosperous society; investments in it not only increase individual earnings but also facilitate the continuous innovative advancement of the national economy.



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