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PRIORITY DIRECTIONS FOR HUMAN CAPITAL DEVELOPMENT IN UZBEKISTAN

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Abstract. *This article analyses the theoretical and practical foundations of introducing advanced foreign experiences in the process of human capital development in Uzbekistan. Global reforms, internal problems of Uzbekistan and state policy on their solution are analysed. Factors affecting human capital are divided into groups on education, health, labour market, innovation and institutional development, and are illustrated with quotes. The methodology describes the methods for calculating the Human Capital Index (HCI) and Human Development Index (HDI), international and national databases. The results and analysis section compares Uzbekistan's HCI and HDI indicators with those of foreign countries. The discussion section provides ways to adapt foreign experiences to the conditions of Uzbekistan.*

Keywords: *human capital, education, health, labour market, HCI, HDI, innovation, foreign experience, economic development.*

O‘ZBEKISTONDA INSON KAPITALINI RIVOJLANTIRISHNING USTUVOR YO‘NALISHLARI

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Annotatsiya. *Ushbu maqola O’zbekistonda inson kapitalini rivojlantirish jarayonida ilg‘or xorijiy tajribalarni joriy etishning nazariy va amaliy asoslarini tahlil qiladi. Jahon miqyosidagi islohotlar, O‘zbekistonning ichki muammolari va ularni hal etish yuzasidan davlat siyosati tahlil qilinadi. Inson kapitaliga ta’sir etuvchi omillar ta’lim, salomatlik, mehnat bozori, innovatsiya va institutsional rivojlanish bo‘yicha guruhlarga ajratilib, iqtiboslar bilan yoritiladi. Metodologiyada Inson Kapitali Indeksi (IKI) va Inson Taraqqiyoti Indeksi (ITI)ni hisoblash usullari, xalqaro va milliy ma’lumotlar bazalari tasvirlanadi. Natija va tahlil qismida O‘zbekistonning IKI va ITI ko‘rsatkichlari xorijiy davlatlar bilan solishtiriladi. Muhokama bo‘limida xorijiy tajribalarni O‘zbekiston sharoitiga moslashtirish yo‘llari beriladi.*

Kalit so‘zlar: *inson kapitali, ta’lim, sog‘liqni saqlash, mehnat bozori, IKI, ITI, innovatsiya, xorijiy tajriba, iqtisodiy rivojlanish.*

ПРИОРИТЕТНЫЕ НАПРАВЛЕНИЯ РАЗВИТИЯ ЧЕЛОВЕЧЕСКОГО КАПИТАЛА В УЗБЕКИСТАНЕ

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Аннотация. *В данной статье анализируются теоретические и практические основы внедрения передового зарубежного опыта в процесс развития человеческого капитала в Узбекистане. Рассматриваются глобальные реформы, внутренние проблемы Узбекистана и государственная политика по их решению. Факторы, влияющие на человеческий капитал, разделены на группы по образованию, здравоохранению, рынку труда, инновациям и институциональному развитию и проиллюстрированы цитатами. В методологии описаны методы расчета Индекса человеческого капитала (ИЧК) и Индекса человеческого развития (ИЧР), международные и национальные базы данных. В разделе результатов и анализа проводится сравнение показателей ИЧК и ИЧР Узбекистана с показателями зарубежных стран. В разделе обсуждения предлагаются пути адаптации зарубежного опыта к условиям Узбекистана.*

Ключевые слова*: человеческий капитал, образование, здравоохранение, рынок труда, ИЧК, ИЧР, инновации, зарубежный опыт, экономическое развитие.*

Introduction.

Human capital is one of the main drivers of the modern economy. As Becker (1975) noted, investments in human capital ensure the country's output, labour productivity and sustainable economic growth. Global trends in the 21st century show that the competitiveness of countries depends more on knowledge, skills and innovative potential than on natural resources.

In the current global context, some problems hinder the development of human capital: regional disparities in the quality of education (UNESCO, 2022); financial unsustainability of the health system (WHO, 2021); shortages of personnel due to migration flows (OECD, 2022); differences in digital competencies (WB, 2020).

The experience of developed countries shows that strategies focused on human capital have a direct impact not only on economic performance, but also on social well-being, innovative activity, competitiveness and sustainable development. For example, in countries such as South Korea, Singapore, Canada, and Germany, investment in human capital has directly led to the expansion of high-tech industries and increased export potential (OECD, 2021).

Although Uzbekistan has achieved positive results in recent years, a number of pressing problems remain, which are low quality of education in international rankings (PISA results); early morbidity and mortality in population health; lack of qualified personnel in the labour market; and weak innovation activity, among others.

The purpose of this article is to scientifically analyse foreign experience in human capital development, study effective approaches and mechanisms, and assess the possibilities of their application in the conditions of Uzbekistan.

Literature review.

Many studies have shown that education is a key element of human capital. Some scholars also confirm that the contribution of higher education to income is in the range of 10–15% (Psacharapoulos and Patrinos, 2018). The experiences of China, Singapore and Finland show that quality education accelerates economic growth. Grossman (1972) identifies health as one of the most important assets of human capital. According to WHO, labor productivity is

25–30% higher in countries with a healthy population (WHO, 2022). Schultz (1961) emphasises that retraining and advanced training systems play a crucial role in the development of human capital. According to OECD (2021) reports, digital skills are becoming the basis of market demand. Romer (1990) substantiates the inextricable link between technological growth and innovation. In the case of South Korea and Japan, innovation has dramatically accelerated economic growth. North (1990) argues that countries with effective institutions tend to have better human capital performance.

The UNDP Human Development Report 2025 re-evaluates human development in the context of modern technologies, particularly artificial intelligence (AI). Some studies suggest that the economic impact of AI will be limited in countries with low human capital (Gomez, 2025). A study by Zervas and Stiakakis (2024) shows that digital skills are one of the key factors for sustainable economic development. Digital skills among middle- and high-skilled workers have a direct impact on economic sustainability. At the regional level, levels of digital and general human capital also directly affect entrepreneurs' use of digital technologies, with regions with higher digital literacy having a significant advantage in innovative entrepreneurship (Boschma, Pardy & Petralia, 2023). Research shows that a high level of digital competencies of employees allows for the successful implementation of innovative solutions, acceleration of production processes and improvement of the quality of products and services. At the same time, the presence of adaptive, transversal skills, such as interdisciplinary thinking, creative approach and the ability to manage information flows, is also important (Rakhimov, 2025).

In Uzbekistan, the Government has adopted many legislative documents aimed at increasing the income of the population and improving the well-being of the population through the development of human capital. In particular, within the framework of the UN Sustainable Development Goals, national goals and objectives in the field of sustainable development in Uzbekistan for the period up to 2030 have been set. Also, according to the Development Strategy of "New Uzbekistan" for 2022–2026, conducting a fair social policy and developing human capital is set as the fourth priority goal. Within the framework of this strategy:

- increasing the coverage rate in preschool education from the current 67 per cent to at least 80 per cent;
- increasing the level of coverage of higher education to 50 per cent and improving the quality of education;
- increasing per capita income by 2030 to more than 4 thousand US dollars by ensuring stable, high growth rates in economic sectors;
- entering the ranks of "upper-middle-income countries" is a pressing task (Iskandarova, 2025).

Research methodology.

In the study of international experience, a comparative analysis of education, health and innovation policies was carried out using the examples of foreign countries - South Korea, Singapore, Finland, Germany, Canada, and Estonia (World Bank, 2022). Classical and modern studies on human capital theory, in particular the works of Becker, Schultz, Romer and North, were taken as a basis. Based on data from OECD, WB, WHO, UNDP and UNESCO, specific indicators (education quality, healthcare spending, innovation indicators, labour productivity) were studied. Official strategies of states, national education programs and policy documents on the labour market were analysed. The following sources were used for the analysis: - World Bank Open Data (HCI, health and education indicators), - UNDP Human Development Reports, - Data from the Statistical Agency of Uzbekistan, - UNESCO Institute for Statistics.

Analysis and discussion of results.

According to the UN Development Project, the Human Development Index (HDI) includes: life expectancy; education index (literacy and duration of education); and income (GNI per capita). Table 1 shows the developed countries and Uzbekistan that are ranked high in terms of HDI and its components. The results show that although the HDI of the above countries is relatively the same, the values of their indicators differ from each other. For example, Singapore has a significantly higher life expectancy and gross national income per capita, but according to the HDI results, it is lower than Germany and Finland.

Table 1.

Countries with the highest Human Development Index rankings include Uzbekistan. (UNDP, 2023)

HDI ranking	HDI 2023	Life expectancy	Expected years of schooling	Mean years of schooling	Gross domestic product per capita (2017 PPP$) 2023
Germany	0.959	81.4	17.3	14.3	64,053
Finland	0.948	81.9	19.5	13.0	57,068
Singapore	0.946	83.7	16.7	12.0	111,239
Korea (Republic of)	0.937	84.3	16.6	12.7	49,726
Uzbekistan	0.740	72.4	12.5	11.9	8,826

The World Bank Human Capital Index (HCI) is calculated based on the following components: child survival rate under 5; quality of education (PISA); average schooling duration; and healthy development indicator. The value of the HCI ranges from 0 to 1, with higher values reflecting higher human capital. Table 2 presents the values of the Human Capital Index and its components for the four selected foreign countries and Uzbekistan. Uzbekistan's HCI for 2023 is 0.62, which indicates that a child born today will be able to realize 62% of their potential.

Table 2.

Values of the Human Capital Index and its components. (WB, 2020)

Country name	Under 5 survival rates	Expected years of schooling	Harmonised test scores	Learning adjusted years of schooling	Fraction of children under 5 not stunted	HCI 2020
Finland	1.00	13.7	534	11.7	-	0.80
Germany	1.00	13.3	517	11.0	-	0.75
Republic of Korea	1.00	13.6	537	11.7	-	0.80
Singapore	1.00	13.9	575	12.8	-	0.88
Uzbekistan	0.98	12.0	474	9.1	0.89	0.62

The results show that the Human Capital Index indicators describe this model more clearly than the Human Development Index. That is, the HCI indicators of countries are growing in line with their components. Comparisons show that Uzbekistan has average results among

Central Asian countries, but its performance is significantly lower than that of leading Asian countries.

Investment in human capital will remain one of the most important drivers of Uzbekistan's future economic growth. In this regard, it is appropriate for Uzbekistan to use the experience of developed countries.

Below, I will highlight the experiences of leading countries in developing Human Capital through Table 3.

Table 3.

Examples of practical experiences from top countries on HCI

Country name	Projects/models in human capital development	Content and main features
Finland	*School quality and the status of the teaching profession*	In Finland, teachers are highly qualified, requiring a master's degree, the profession is highly respected, and entry is highly competitive, and teachers are given independence and a creative approach, which contributes to the high quality of education. This system is considered a key factor in improving the quality of human capital. (OECD, 2025)
Germany/ Austria/ Switzerland	*Dual Education and Business Participation*	Dual VET is common in these countries, combining school and work experience; companies are actively involved in the learning process, while the state sets standards. In this model, students acquire vocational skills along with knowledge from school and work, creating a skilled workforce that is relevant to market needs. (OECD, 2025)
Singapore	*Skills Future – lifelong learning*	*Skills Future is a program that engages workers in lifelong learning, fosters resilience and upskilling through public-private partnerships. It offers courses, financial support, and market-relevant training to the population. (NITI Aayog, 2020)*
South Korea	*STEM, R&D and innovation ecosystem*	Korean education places a strong emphasis on STEM subjects and supports an R&D and innovation ecosystem. This system includes integrated curricula in science, technology, engineering and mathematics from primary to tertiary level, as well as close links with innovation sectors and businesses (resulting in a large number of STEM students and opportunities for them in research areas). (OECD, 2021)
Estonia	*Digital government and digital education*	Estonia has implemented digital services at the state level, which also affects school education. With programs such as Tiigrihüpe, IT and digital literacy are strengthened in school. The quality of education is improved through training teachers in AI and digital methods, as well as innovative materials. (European Commission, 2025)
Canada	*Skilled Migration Strategy (capital through immigration)*	Attracting skilled migrants is a key strategy in Canada's immigration plans. The country will attract a skilled workforce through the 2025-27 Immigration Levels Plan, which will help meet the overall labour market demand and contribute to economic growth. (Harrap et.al, 2021)
Australia	*Skilled Migration Strategy (visa regimes)*	Australia actively supports skilled migration and selects skills that match the needs of the economy through the new Skills in Demand (SID) visa system; this strategy aims to meet labour demand and increase economic efficiency. (Hawthorne, 2014)

South Korea has transformed from a poor agricultural country into one of the world's most innovative economies in 40 years, thanks to its intensive human capital policy. Key areas include: large investments in STEM; the development of technical and vocational education; the introduction of digital literacy into general education; raising the status of teachers; and a high salary system. The teacher selection system in Korea is very strict, with the top 5% of students being accepted as teachers (UNESCO, 2020). This is one of the main factors in the high quality of education.

Singapore has emphasised flexibility and competitiveness in its education and innovation policy: "Lifelong Learning" - a lifelong learning system; grants for professional development are allocated to every citizen through the SkillsFuture programme; an assessment system centred on skills and creativity, not IQ; programming, robotics, and media literacy are taught from primary school. The Singaporean education model consistently ranks high in the world PISA rankings (OECD, 2021).

The strengths of the Finnish education system are its emphasis on equality and social support: free education, free meals, free educational materials; minimal homework; regular monitoring of students' psychological well-being; and 100% of teachers holding a master's degree. The Finnish model demonstrates that there is a direct link between social stability and the quality of human capital (Sahlberg, 2015).

In Germany, vocational education is inextricably linked to production: a dual system: 50% theory plus 50% practice; large enterprises are direct participants in the educational process; employers participate in the development of qualification standards and curricula. As a result, Germany remains one of the countries with the lowest youth unemployment rates in Europe (Eurostat, 2022).

The experience of the studied countries shows that there are universal elements of successful human capital development: a quality and inclusive education system; high qualification and status of teachers; access to lifelong learning; development of vocational and technical education; investments in the healthcare system; strategic attention to the development of innovation and R&D.

Uzbekistan should introduce the following elements of foreign experience in the development of human capital: deepening STEM education and digital skills based on the Korean model; introducing "Lifelong Learning Vouchers" similar to SkillsFuture based on the Singapore experience; strengthening psychological support services based on the Finnish experience; expanding dual education in all regions based on the German model.

Conclusion and suggestions.

The results of the study show that human capital is of strategic importance for the sustainable development of the economy of Uzbekistan and the social progress of society. The quality of the education system, the efficiency of the healthcare sector, the shortage of qualified personnel in the labour market, the low level of innovative activity and the existing restrictions in the institutional environment are the main factors that negatively affect the development of human capital. To eliminate these problems, it is of great importance to conduct a thorough analysis of advanced foreign experience and implement it in accordance with national economic and social conditions.

A comparative analysis based on the Human Capital Index and the Human Development Index clearly showed that there are certain opportunities for increasing the potential of human capital in Uzbekistan, but there is a need to further develop the quality of education and innovative potential. International practice confirms that the synergy of state policy, the active participation of the private sector and effective institutional mechanisms in the development of human capital contribute to achieving high economic results. From this perspective, the implementation of comprehensive and integrated measures aimed at developing human capital

is an important condition for increasing Uzbekistan's long-term competitiveness and ensuring economic stability.

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