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CHALLENGES OF ATTRACTING INVESTMENTS IN HUMAN CAPITAL AND STRATEGIES FOR THEIR RESOLUTION

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Abstract. This article examines the current issues of attracting investment in human capital in Uzbekistan from a scientific and analytical perspective. It identifies key challenges related to the quality of the education system, insufficient investment in the healthcare sector, labor market imbalances, the migration of qualified personnel abroad, and institutional barriers. The article also proposes scientifically grounded ways to address these issues. Based on the research findings, practical recommendations are developed through the synthesis of international experience and the national characteristics of Uzbekistan.

Keywords: human capital, investment, education, healthcare, labor market, innovation, economic growth.

Аннотация. В статье с научно-аналитической точки зрения исследуются актуальные проблемы привлечения инвестиций в человеческий капитал в Узбекистане. Выявлены ключевые проблемы, связанные с качеством системы образования, недостаточным уровнем инвестиций в сферу здравоохранения, дисбалансом на рынке труда, оттоком квалифицированных кадров за рубеж и институциональными барьерами. Предложены научно обоснованные пути решения указанных проблем. На основе результатов исследования разработаны практические рекомендации с учетом международного опыта и национальных особенностей Узбекистана.

Ключевые слова: человеческий капитал, инвестиции, образование, здравоохранение, рынок труда, инновации, экономический рост.

INTRODUCTION

In the global economy, the role of human capital is becoming increasingly important in ensuring competitiveness, accelerating innovative development, and creating sustainable sources of economic growth. According to modern economic theories, the key drivers of economic development include not only material resources and physical capital, but also the population's level of education, professional skills, health status, and innovative capacity. Therefore, expanding investment in human capital and improving its efficiency have become priority areas of state economic policy.

Investment in human capital primarily includes expenditures directed toward education, healthcare, research and development, vocational training, and professional skills development systems. Such investment serves as a crucial factor in ensuring long-term economic efficiency, increasing labor productivity, developing high-value-added industries, and improving public welfare. In the context of the digital economy and the knowledge-based economy, the quality of human capital has become a strategic resource that determines a country's competitive advantages in the international arena.

In recent years, Uzbekistan has implemented large-scale reforms aimed at developing human capital. In particular, a number of programs have been introduced to modernize the education system, expand access to higher education, improve the quality of healthcare services, and support science and innovation. At the same time, several challenges remain in attracting investment into human capital. These include limited financial resources, insufficient private sector participation, underdeveloped mechanisms for evaluating investment effectiveness, disparities in regional development, and relatively high investment risks.

Furthermore, the structure and volume of funds allocated to human capital do not always fully correspond to the modern needs of the economy. Existing mismatches between the education system and labor market requirements, as well as certain shortcomings in the system of training qualified personnel, affect the effectiveness of investment. As a result, there is a growing need to improve the institutional, financial, and organizational mechanisms for attracting investment into human capital.

Under these circumstances, conducting an in-depth analysis of existing challenges in attracting investment into human capital, assessing their economic consequences, and developing effective solutions based on international experience are of significant scientific and practical importance. The primary objective of this article is to identify the key issues associated with attracting investment in human capital, examine the factors contributing to their emergence, and formulate practical recommendations aimed at increasing investment activity in this area.

Achieving these objectives requires directing both domestic and foreign investment toward the development of human intelligence, knowledge, qualifications, and skills. Recognizing the strategic importance of this issue, the President of the Republic of Uzbekistan adopted the Decrees “On the Development Strategy of New Uzbekistan for 2022–2026” and “Uzbekistan–2030.” These policy documents define a number of priority goals aimed at strengthening the country’s human capital potential.

In particular, the targets include achieving 100 percent enrollment of children in school preparation groups, increasing to 50 percent the share of general secondary education institutions that implement the assessment system used in Presidential and specialized schools, raising to 70 percent the proportion of higher education graduates positively evaluated by employers, and increasing public healthcare expenditures financed from the state budget to 5 percent of gross domestic product (GDP) by 2030 [1]. These objectives represent important development priorities that are expected to contribute significantly to the enhancement of human capital and the sustainable socio-economic development of the country.

LITERATURE REVIEW

The theoretical foundations of the concept of human capital have been extensively studied by prominent economists such as Adam Smith, David Ricardo, Jacob Mincer, Gary Becker, Theodore Schultz, William Petty, and many others. Their research made a significant contribution to the development of human capital theory and highlighted the role of education, skills, knowledge, and health in promoting economic growth and increasing productivity.

Among the scholars from the Commonwealth of Independent States (CIS) who have conducted research on the theoretical and practical aspects of human capital are S. Dyatlov, V. Krutko, T. Smirnova, V. S. Golubev, R. A. Perelet, V. V. Bushuev, and others. Their studies focus on the formation, development, and effective utilization of human capital under modern socio-economic conditions.

Uzbek scholars have also conducted numerous scientific studies on the role and significance of human capital in the innovative development of the national economy. In particular, researchers such as Q. Kh. Abdurakhmonov, A. Yu. Magrupov, A. J. Najmitdinov, A. Sh. Bekmurodov, A. V. Vakhobov, D. Kh. Vakhabova, B. Kh. Umurzakov [2], and others have examined the importance of human capital in economic development, emphasizing its contribution to increasing labor productivity, enhancing competitiveness, and ensuring sustainable economic growth.

RESEARCH METHODOLOGY

In covering this topic, both general economic research methods and special approaches to data systematization were used. In particular, the study applied methods of comparison, synthesis of theoretical and practical materials, systematic analysis, abstract-logical reasoning, and generalization.

ANALYSIS AND RESULTS

In Uzbekistan, human capital development has become one of the priority directions of state policy in recent years. The Development Strategy for 2022–2026, the “Uzbekistan–2030” Strategy [3], and the State Program for 2025 specifically identify tasks related to improving the quality of education and healthcare, increasing employment, reducing poverty, and strengthening social protection. These policy documents emphasize the strategic objective of creating favorable conditions for individuals to realize their potential, expanding access to quality education and healthcare services, and ensuring that economic growth is closely linked with human development. However, despite the increasing volume of resources allocated to human capital, several systemic challenges remain in transforming these resources into measurable outcomes and higher levels of effectiveness.

The first challenge is the insufficient measurement of the relationship between resources and outcomes. In practice, reporting is often focused on the amount of funding allocated, the number of facilities constructed, or the number of beneficiaries reached. However, there is limited systematic analysis of how these expenditures influence educational quality, employment, cognitive skills, healthy life expectancy, or labor productivity. According to the World Bank’s Public Expenditure Review of Uzbekistan, the country’s Human

Capital Index (HCI) stands at 0.62, indicating that by the age of 18, children are expected to achieve only 9.1 years of effective learning compared to the expected 12 years of schooling [4]. This finding suggests that the effectiveness of resource utilization is more important than the volume of resources allocated. Therefore, human capital investment policy should shift its focus from the “volume of expenditures” to the “returns on investment.” Addressing this challenge requires strengthening the principles of results-based management.

In the education sector, evaluation should extend beyond enrollment and admission indicators to include learning outcomes, graduate employment rates, teacher quality, and regional equity indicators. Similarly, in healthcare, monitoring should focus not only on the volume of services provided but also on preventive care coverage, treatment outcomes, patient satisfaction, the effectiveness of primary healthcare services, and regional accessibility. Such an approach enables policymakers to manage not only resource allocation but also the social and economic impact of investments. Consequently, human capital policy can evolve from a “spending for reporting” model to an “investment for results” model.

The second major challenge is regional disparity. While the capital city and major urban centers generally enjoy relatively high levels of educational opportunities, healthcare services, digital infrastructure, and access to qualified personnel, the quality and availability of these resources remain comparatively lower in certain remote regions. Such disparities affect the balanced development and reproduction of human capital, encourage internal migration, and contribute to uneven economic growth across regions. According to the World Bank’s poverty assessment report on Uzbekistan, the national poverty rate was estimated at 32 percent, while the Human Capital Index remained at 0.62 [5]. These indicators highlight the need for more balanced and inclusive investment policies aimed at strengthening human capital throughout the country. Although the Human Capital Index is calculated at the national level, it suggests that challenges related to education quality exist even in the early stages of human capital development and may be more pronounced in some regions.

Therefore, regional disparities should be considered a systemic risk factor in human capital policy. To reduce such imbalances, it is advisable to adopt differentiated approaches to financing, personnel policies, and digital infrastructure development. First, resource allocation in education and healthcare should be based not only on quantitative indicators but also on regional needs, service quality, shortages of qualified personnel, and levels of social vulnerability. Second, targeted incentive mechanisms should be introduced to attract qualified teachers and healthcare professionals to remote areas. These may include salary supplements, service housing, career advancement opportunities, and continuous professional development programs. Third, expanding access to digital services, distance learning, and telemedicine can contribute to narrowing regional disparities. Such measures would support more balanced human capital development and ensure that the benefits of investment are distributed more broadly across society.

The third major challenge is the insufficient alignment between the education system and labor market requirements. According to reports published by the World Bank and the Asian Development Bank, a significant gap exists in Uzbekistan’s labor market between the competencies demanded by employers and those supplied by the education system. This mismatch reduces the effectiveness of investments in education, limits graduate employability, and constrains the economy’s ability to fully utilize its human capital potential. Consequently, strengthening cooperation between educational institutions and employers, regularly updating curricula in accordance with labor market requirements, and expanding practice-oriented and competency-based education models have become key priorities for enhancing the effectiveness of human capital investments [6].

Although access to higher education has expanded significantly in recent years, labor market demand for graduates is not evenly distributed across all fields of study. Likewise, the vocational education and training system is not always sufficiently aligned with the actual needs of regional economies. As a result, labor market imbalances have emerged, characterized by an oversupply of specialists in certain fields and shortages of qualified professionals in others. This situation prolongs the economic payback period of educational investments, creates additional challenges for youth employment, and reduces the efficiency of resource utilization directed toward human capital development.

To address this challenge, it is necessary to strengthen the alignment between the education system and labor market requirements. First, demand for human resources should be regularly forecast across regions and sectors of the economy, and admission quotas in higher and vocational education institutions should be aligned with these forecasts. Second, the participation of employers, industry enterprises, and professional associations in the design and revision of educational programs should be expanded. Third, it is advisable to further develop dual education systems, practical internships, industrial placements, and enterprise-integrated learning models. Such measures would facilitate graduates’ transition into the labor market, improve their employability, and increase the economic returns on investments in human capital. By ensuring closer integration between education and employment systems, policymakers can enhance labor market efficiency, reduce structural imbalances, and maximize the contribution of human capital investments to sustainable economic growth and national competitiveness.

The fourth challenge is the limited participation of the private sector in human capital investment. The Asian Development Bank's Partnership Strategy for Uzbekistan (2024–2028) identifies private sector engagement as a priority area, emphasizing its role in strengthening education, skills development, and institutional capacity building [7]. This suggests that, although the state and international development partners play a leading role, many enterprises have not yet fully embraced employee training, retraining, healthy workplace development, and innovation-oriented competency building as strategic investments. As a result, the expansion of corporate education, continuous professional development, and lifelong learning practices remains limited.

To address this issue, greater incentives should be provided for private sector investment in human capital. First, tax incentives or compensation mechanisms for corporate training and retraining expenditures should be introduced. Second, the establishment of corporate academies, training centers, and practical laboratories within large enterprises should be encouraged. Third, dual education programs, targeted internships, and graduate adaptation initiatives should be expanded with active private sector participation. Under such conditions, human capital development will become not only a state responsibility but also an important investment direction for business entities directly interested in long-term economic growth.

The fifth challenge is the fragmentation of the quality assessment system and the limited integration of data. According to World Bank reports on education, Uzbekistan still faces certain limitations in educational data collection and system monitoring [8]. In education, indicators such as enrollment, attendance, and graduation rates are often measured, whereas outcome indicators—including critical thinking, practical competencies, graduate employment, and learning achievements—are not sufficiently integrated into evaluation systems. Similarly, in healthcare, monitoring is largely focused on service volumes and infrastructure indicators, while outcome measures such as patient satisfaction, effectiveness of prevention programs, quality of diagnosis, and territorial equity receive less comprehensive assessment. This situation complicates performance management and limits the ability to accurately evaluate the return on investments.

To overcome this challenge, information exchange among education, healthcare, employment, and social protection systems should be strengthened. First, a unified database of human capital outcome indicators should be established. Second, quality, outcome, and impact indicators should be incorporated into mandatory monitoring frameworks alongside expenditure and coverage indicators. Third, transparent and comparable monitoring mechanisms should be introduced through independent evaluations, external audits, and digital dashboards. Such measures would make it possible to clearly identify where resources are directed, how they are utilized, and what outcomes they generate.

The sixth challenge is the digital divide and the persistence of competency gaps. The “Digital Uzbekistan–2030” Strategy identifies the digitalization of public administration, education, healthcare, and other sectors of the economy as a strategic priority [3]. Nevertheless, significant differences remain across regions and social groups in terms of digital infrastructure, internet quality, access to equipment, and the skills required to use digital technologies effectively. Therefore, the availability of digital platforms and technical infrastructure alone is insufficient; it is equally important to develop the human capital necessary to utilize these opportunities effectively. Otherwise, the benefits of digitalization may not be distributed evenly across society.

To reduce the digital divide, it is essential to improve internet quality and digital infrastructure across all regions. In addition, digital literacy, data processing skills, artificial intelligence competencies, and practical IT knowledge should be strengthened at all levels of education, from primary schools to higher education institutions. Furthermore, targeted digital skills programs should be expanded for socially vulnerable groups, unemployed youth, and women. Under such conditions, digitalization will be accompanied not only by technological modernization but also by qualitative improvements in human capital.

The seventh challenge is the insufficient integration of scientific research and innovation activities into human capital policy. World Bank assessments of higher education in Uzbekistan highlight quality constraints related to STEM disciplines, laboratory infrastructure, curricula, and faculty qualifications [9]. If human capital policy focuses solely on training specialists without advancing to the creation of new knowledge, practical application of research outcomes, and commercialization of innovations, the economy may remain dependent on external technological sources. Therefore, the limited integration of science, higher education, and business should be regarded as a separate systemic challenge.

To overcome this issue, cooperation among higher education institutions, research centers, and the private sector should be strengthened. First, scientific and practical laboratories, startup centers, and technology transfer units should be further developed within universities. Second, grants and state support mechanisms should be directed not only toward fundamental research but also toward applied innovation and commercialization activities. Third, scientific capacity should be strengthened in STEM fields, engineering, biotechnology, artificial intelligence, and the digital economy. Such measures will not only adapt human capital to current economic needs but also contribute to the creation of new drivers of economic growth.

The eighth challenge is the weakness of institutional coordination. Human capital is inherently a cross-sectoral concept that encompasses education, healthcare, employment, digitalization, social protection, and regional development. However, in practice, these areas are often managed through separate programs and institutions. As a result, information and resource coordination is slower than desired, overlaps may occur among programs, and the overall effectiveness of policy implementation can be reduced. In some cases, measures undertaken in one sector may not be fully aligned with the objectives pursued in another sector.

CONCLUSION AND RECOMMENDATIONS

To address the existing challenges in attracting investment for human capital development in Uzbekistan, the following recommendations may be proposed.

First, qualitative reforms in the education system should be consistently implemented. The dual education model, based on the experience of Germany and Austria, should be expanded through parallel training in enterprises and educational institutions, increasing the share of practical training to 60–70 percent. State investment in STEM education should be increased threefold by 2030. Innovative clusters, technoparks, and regulatory sandbox environments should be established. Teacher retraining programs should be systematically introduced, and teachers' salary levels should be increased. Joint research laboratories should be established between higher education institutions and industrial enterprises, while distance learning platforms and internet infrastructure should be further developed in rural areas.

Second, investment in the healthcare sector should be expanded. Increasing healthcare expenditure to 5 percent of GDP by 2030 is a target indicator consistent with international standards. Investment in preventive healthcare should be strengthened through mass population screening programs and the promotion of healthy lifestyles. In this regard, international practice shows that 1 sum spent on prevention can save 7–8 sums in treatment costs. Programs aimed at increasing the availability of medical personnel in rural areas should be implemented through scholarships, housing support, and guarantees of higher wages. A system of tax incentives and state guarantees should be developed for private medical centers. Telemedicine systems should be expanded, and shared health service models should be introduced.

Third, the labor market should be modernized. The national qualifications system should be aligned with international standards, and a real-time monitoring system should be introduced to track the balance between labor market supply and demand. Targeted programs should be implemented to increase women's economic participation, including the construction of childcare facilities, the introduction of part-time employment opportunities, and the provision of microcredits. To formalize the informal economy, the tax burden should be optimized and bureaucratic barriers reduced.

Fourth, policies should focus not only on preventing the outflow of talent but also on encouraging the inflow and return of qualified specialists. Relations with the diaspora should be institutionalized through the creation of professional networks and knowledge-sharing platforms for the Uzbek diaspora. "Return to Homeland" programs should provide guaranteed employment for 2–3 years, competitive salaries, and social support packages. Uzbek students studying at foreign universities should be offered scholarships through contracts with local enterprises, with an obligation to work for 3–5 years after graduation. Investment in research and development should be expanded through increased grant funding and broader international scientific cooperation.

Fifth, institutional and policy reforms should be implemented. Special tax incentives should be introduced for investment in human capital, including tax deductions for corporate training expenditures, employee retraining costs, and medical insurance expenses. A public-private partnership fund for "Human Capital Investment" should be established with the participation of both domestic and foreign investors. An annual National Report on Human Capital Indicators should be prepared and publicly released to strengthen the principles of transparency and accountability. Procedures for the recognition of foreign academic and professional qualification certificates should also be simplified.

According to the results of this study, the challenges associated with investment in human capital in Uzbekistan are systemic and closely interconnected. Issues related to the quality of education, insufficient investment in healthcare, labor market imbalances, talent outflow, and institutional barriers should not be addressed separately, but rather as components of an integrated system. The proposed solutions are based on four key principles: (1) comprehensiveness — the simultaneous development of all relevant sectors; (2) measurability — evaluation of the effectiveness of each measure through quantitative indicators; (3) adaptation of international experience to national conditions; and (4) sustainability — focusing on long-term effectiveness rather than short-term results.

Within the framework of Uzbekistan's strategic goals through 2030, the country has the opportunity to increase its World Bank Human Capital Index from the current level of 0.57 to 0.70 and become one of the

leading countries in the region. Achieving this objective requires a balanced combination of political will, financial resources, and professional management capacity.

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