

ARTIFICIAL INTELLIGENCE-DRIVEN ENHANCEMENT OF HUMAN CAPITAL INVESTMENT ATTRACTION MECHANISMS

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Annotation: *This article explores the role of artificial intelligence (AI) in enhancing mechanisms for attracting investments in human capital within the context of the digital economy. The study examines theoretical foundations, including the Resource-Based View and Dynamic Capabilities Theory, to explain the strategic value of human capital as a key driver of sustainable economic development. Particular attention is devoted to AI-driven solutions such as machine learning, predictive analytics, natural language processing, generative AI, big data analytics, and reinforcement learning that improve decision-making in human capital investment planning and resource allocation.*

Keywords: *Human capital, artificial intelligence, investment attraction, investment mechanisms, investment efficiency, machine learning, digital economy, workforce analytics, big data, labor market, digital skills.*

At present, digital transformation is affecting all sectors of the economy, and this process is fundamentally changing the demand for human capital. The success of enterprises is increasingly dependent on their ability to attract, develop, and retain qualified personnel. However, traditional mechanisms of investment in human capital, which rely on intermediary indicators such as training costs, staff turnover rates, and labor productivity, are no longer able to fully meet these demands. Determining and measuring the direct relationship between expenditures on employee qualifications and financial performance has long remained a scientific and practical challenge. It is precisely as a tool capable of filling this gap that artificial intelligence (AI) technologies are coming to the forefront.

In the context of the digital economy, human capital is emerging as one of the most important strategic resources of enterprises and organizations. However, the modern labor market, intensifying innovative competition, and the acceleration of technological transformation demonstrate that traditional approaches to human capital management are no longer sufficient. In particular, the rapid development of

artificial intelligence (AI) technologies has created new opportunities in the processes of employee selection, investment in personnel, skills development, talent retention, and the improvement of labor productivity.

First, machine learning technology serves as an important tool for assessing employees' existing competencies, forecasting their development trends, and identifying their individual professional pathways. Through this technology, the return on investments directed toward human capital can increase by 32–48%, while costs associated with talent retention are reduced. This indicates that artificial intelligence acts as a factor that strengthens corporate growth and improves the efficiency of using strategic resources. In particular, the application of this technology generates substantial economic benefits in highly dynamic sectors such as IT, finance, and logistics.

Second, predictive analytics technology is of particular importance in identifying the risk of staff turnover in advance, forming employee risk profiles, and developing strategies for talent retention. This technology enables organizations to detect the probability of employee turnover 6–12 months before it occurs. As a result, talent retention rates increase by 15–25%, while recruitment and adaptation costs decline. The universality of this technology across all sectors further enhances its practical significance. This demonstrates that artificial intelligence is transforming investments in human capital into a proactive rather than reactive management instrument.

Third, generative artificial intelligence (GenAI) is initiating a new stage in the development of human capital. This technology makes it possible to create personalized learning programs, introduce mentor-bot systems, and design educational content tailored to employees' individual needs. According to the table data, when GenAI tools are applied, employee learning efficiency increases by 60–80%, while training costs decrease. This not only improves the qualitative indicators of human capital, but also strengthens the efficiency of investments directed toward education and retraining. This technology is particularly relevant in the fields of education, healthcare, and IT.

Fourth, big data analytics makes it possible to integrate numerous human capital indicators into a single platform, create comprehensive dashboards, and conduct real-time monitoring. It has been noted that decisions made on the basis of this technology increase in accuracy by 94%, while strategic errors decline. This ensures that decisions related to human capital management within organizations are made in a more substantiated, precise, and data-driven manner. In the context of industry

and the digital economy, big data analytics is becoming an important instrument of strategic management.

Finally, reinforcement learning technology is applied to more complex and dynamic aspects of human capital management. In particular, this technology serves as an effective tool for optimizing workforce rotation, matching employees to positions, and maintaining organizational balance. As a result, organizational productivity increases by 18–22%, while employee dissatisfaction decreases. This technology is especially effective in sectors such as manufacturing and logistics, where rapid decision-making is required. At the same time, empirical observations show that the positive effects of artificial intelligence become fully visible only after its complete and systematic implementation. Although all the technologies reflected in the table differ from one another in certain respects, the common feature that unites them is that they increase the efficiency of investments in human capital, improve the quality of decision-making, and strengthen the long-term competitiveness of organizations. Therefore, integrating artificial intelligence technologies into human capital management is not only a technological necessity, but also a strategic imperative for modern organizations.

The conducted analysis confirms that artificial intelligence technologies are an important driver of the processes of attracting investment into human capital and managing it efficiently. Technologies such as machine learning, predictive analytics, natural language processing, generative artificial intelligence, big data analytics, and reinforcement learning ensure high effectiveness at various stages of identifying, developing, retaining, and managing employee potential. Their practical application makes it possible to increase the economic return on investments directed toward human capital, reduce costs, and improve the quality of strategic management. From this perspective, the consistent introduction of artificial intelligence technologies into human capital management systems is an essential condition for ensuring the innovative development and long-term competitiveness of organizations. In particular, under the conditions of the digital economy, the integration of human capital and artificial intelligence forms a new model for increasing investment efficiency. Therefore, in the future, the comprehensive use of the potential of artificial intelligence technologies in the development of human capital-oriented policies within enterprises and organizations will remain one of the priority directions.

Overall, integrating artificial intelligence technologies into mechanisms for attracting investments in human capital ensures high economic efficiency by

improving the quality of education, optimizing costs, expanding coverage, improving employment indicators, and strengthening innovative capacity. From this perspective, in the future, one of the priority directions in developing human capital financing policy will remain the comprehensive use of artificial intelligence tools, the expansion of adaptive learning platforms, the improvement of systems for forecasting labor market needs, and the development of digital education infrastructure on the basis of public-private partnerships. This approach not only increases the quality and returns of human capital, but also contributes to the sustainable growth, competitiveness, and innovative development of the national economy.

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