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STATISTICAL APPROACHES TO ASSESSING THE EFFICIENCY OF HUMAN CAPITAL IN THE CIVIL SERVICE

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Abstract:

The article analyzes, on the basis of statistical data, the state of human capital development in the state bodies and organizations of Uzbekistan, and proposes an integrated approach aimed at the comprehensive assessment of human capital efficiency in the civil service. It examines changes in the educational and digital base of human capital, as well as indicators of personnel selection, professional development, digital human resource management, and performance evaluation in the civil service. In addition, a five-component integral index is proposed for assessing the efficiency of civil service human capital, covering professional development, competency alignment, KPI performance, readiness of digital human resource management, and personnel stability.

Keywords: human capital, civil service, statistical analysis, professional development, competency, KPI, digital human resource management, personnel stability, integral index.

Introduction:

The effectiveness of modern public administration is closely linked to the quality of human capital, the professional and digital competencies of civil servants, and the performance outcomes of their service activity. For this reason, it is important to assess human capital not only by the level of education or the number of employees, but also by the degree to which it translates into practical results in



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civil service. The statistical dynamics of human capital development in Uzbekistan, the professional development of civil servants, digital human resource management, and performance indicators are analyzed.

Main findings:

In Uzbekistan, during 2020–2025 the educational base of human capital expanded considerably. In particular, higher-education coverage of the population aged 18–23 rose from 18.7% in 2020 to 47.7% by the start of the 2024/2025 academic year. The number of students enrolled in higher education increased from 571,500 in the 2020/2021 academic year to 1.535 million by the start of the 2025/2026 academic year. Positive dynamics were also observed in digital human capital: the share of the population using the internet rose from 76.6% in 2021 to 94.2% in January–August 2025. However, quantitative growth does not automatically mean an increase in the quality of human capital; it must be linked to practical competencies and service performance. In 2024, 35,214 open competitions were held for recruitment to the civil service, in which more than 1,110,000 candidates took part and 18,813 candidates were hired. In the area of professional development, 155 training courses and 64 express-trainings were conducted, with 154,052 instances of participation recorded; on the edu.argos.uz platform, 26,147 civil servants completed courses and received certificates. In addition, 2,534 organizations were connected to the hrm.argos.uz platform, and the data of nearly 94,000 civil servants were digitized. In performance evaluation, 1,216 deputy hokims (heads of local administration) in 208 districts (cities) were assessed quarterly on the basis of 44 indicators, and 832 sector heads on the basis of 9 indicators.



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Research objective: As a result of the analysis, a five-component integral index is proposed for the comprehensive assessment of civil service human capital: professional development (Kdev), competency alignment (Kcomp), KPI performance (Kperf), readiness of digital human resource management (Kdig), and personnel stability (Kstab). The base weighting scheme is defined as follows:

$$\text{IHCCS} = 0.20\text{Kdev} + 0.25\text{Kcomp} + 0.25\text{Kperf} + 0.15\text{Kdig} + 0.15\text{Kstab}$$

The weights were determined based on the priority given to assessing the degree to which human capital translates into practical results in civil service; higher weight was assigned to competency alignment and performance effectiveness. The dissertation substantiates the need to test the stability of the index, before its practical implementation, through alternative weighting scenarios and sensitivity analysis.

The civil-service certification model of South Korea over the period 1995–2023 was chosen as the object of study, on the basis of which the development of a competency-based certification mechanism adapted to the conditions of Uzbekistan is envisaged. This approach makes it possible to view HRD (human resource development) and HRM (human resource management) processes as a single, unified system.

South Korea is characterized as a country that places high priority on education in the development of human capital. Among the key aspects of the Korean experience are the dual-education model aimed at harmonizing education and labor practice, professional certification, and performance-based assessment approaches. It is also noted that Korea's high level of investment in research and development is an important condition for linking human capital to innovative potential.

In order to link Korea's approach in the HRD/HRM field to Uzbekistan's practice, emphasis is placed on the chain of identifying competencies, diagnosing them,



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targeted training, certification, linking them to service performance, and monitoring through digital HRM platforms. In Uzbekistan, elements close to this approach are also taking shape: 2,534 organizations are connected to the hrm.argos.uz platform, and the data of nearly 94,000 civil servants have been digitized; through edu.argos.uz, 26,147 civil servants have completed courses and received certificates. These indicators show that an institutional foundation is forming for integrating HRD and HRM processes in a digital environment.

From this standpoint, the main methodological significance of Korea's experience for Uzbekistan lies in treating certification not merely as evidence of having completed a training course, but as an element confirming an employee's competence, practical skills, and service performance. This idea is logically consistent with the “professional development,” “competency alignment,” and “KPI performance” components of the integral index proposed in the dissertation.

Methodological limitation and practical significance: In open aggregate data, there is no unified employee contour or common denominator for all components of the index. For this reason, it is methodologically justified to refrain from mechanically calculating a single conditional score at the republic-wide level. To fully calculate the index, it is necessary to compile data on professional development, competency diagnostics, KPI assessments, electronic personnel profiles, and personnel stability for each state body, based on a single reporting period and a uniform employee contour.

Conclusion:

Although the educational and digital base of human capital in Uzbekistan continues to expand, increasing the efficiency of the civil service should focus primarily on the qualitative composition of human capital and the degree to which



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it translates into practical results. Statistical analysis shows that the processes of personnel selection, professional development, and digitalization in the civil service have expanded. At the same time, the inconsistency of data coverage across various sources is a significant methodological problem for comprehensive assessment. The proposed five-component integral index can serve as a scientific and methodological basis for resolving this problem on the basis of uniform-methodology personnel data at the level of each state body. Applying the index together with an organizational-economic mechanism will make it possible to form a continuous management cycle of diagnosing human capital, targeted training, performance evaluation, monitoring, and incentivization.

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