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STATISTICAL ANALYSIS TOOLS OF TAX DATA AND THEIR IMPORTANCE IN DECISION-MAKING

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Abstract. This article examines the theoretical and methodological foundations of statistical analysis of tax data, as well as the use of analytical results in the process of making fiscal and managerial decisions. In the context of the digital economy, the growing volume of tax data and the increasing complexity of their structure necessitate the effective application of statistical analysis tools. The study scientifically analyzes the role of descriptive statistics, correlation and regression analysis, time series analysis, and risk assessment methods in tax administration. The findings contribute to the development of tax policy and the improvement of the effectiveness of fiscal decision-making.

Keywords: tax data, statistical analysis, fiscal decisions, regression analysis, time series, tax administration.

Taxes are the primary source of budget revenues in the public finance system. Therefore, ensuring the stability of tax revenues, expanding the tax base, and strengthening tax compliance are among the key priorities of tax policy. The effective implementation of these objectives requires in-depth statistical analysis of tax data and the adoption of scientifically grounded decisions.

Tax data comprise a set of indicators related to taxpayers, types of taxes, revenue volumes, tax incentives, tax arrears, and the results of tax audits. Systematic analysis of these data makes it possible to identify fiscal risks, expand forecasting capabilities, and optimize tax policy.

Statistical analysis enables the quantitative assessment of processes and trends occurring within the tax system. In particular, statistical approaches play a crucial role in analyzing the dynamics of tax revenues, identifying differences across regions and economic sectors, and assessing the distribution of the tax burden.

Descriptive statistical methods, including measures of central tendency, variance, and coefficients of variation, are used to evaluate the overall state of tax indicators. These measures help determine the stability and variability of tax revenues, thereby providing a basis for conclusions regarding the level of fiscal stability.

Correlation and regression analysis are widely applied to identify relationships between tax revenues and macroeconomic indicators. The impact of factors such as gross domestic product, household income, inflation, and employment on tax revenues is quantitatively assessed through regression models. This approach allows for the evaluation of changes in the tax base and the effectiveness of tax policy measures in advance.

Tax revenues are dynamic in nature and closely linked to the time factor. Time series analysis serves to identify trend, seasonal, and random components of tax revenues. Based on this analysis, short- and medium-term tax revenue forecasts are developed and applied in the preparation of state budget drafts and fiscal planning processes.

The results of statistical analysis strengthen the information base for fiscal and managerial decision-making. Decisions grounded in statistical evidence reduce subjectivity and enhance the transparency and effectiveness of tax policy. In particular, risk assessment enables the identification of regions and sectors with a high probability of tax arrears, thereby improving the targeting of tax control measures.

In recent years, the importance of digital technologies, big data analytics, artificial intelligence, and machine learning algorithms in the analysis of tax data has increased

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significantly. These approaches make it possible to detect tax evasion at an early stage, uncover hidden patterns in tax revenues, and improve the accuracy of forecasts.

Through clustering and classification methods, taxpayers can be grouped according to their risk levels, enabling a differentiated approach to tax control. This contributes to reducing tax administration costs and ensuring more efficient use of public resources.

In conclusion, the comprehensive application of statistical analysis tools to tax data is a key factor in enhancing the effectiveness of fiscal policy. Descriptive statistics, regression and time series analysis, along with modern digital approaches, provide opportunities to forecast tax revenues, manage fiscal risks, and make scientifically grounded decisions. The widespread implementation of these tools in tax administration practice contributes to strengthening the stability and transparency of the public finance system.

References:

1. Raxmonqulova, N. O. (2025). HUDUDLAR IQTISODIYOTIDAGI MUHIM TARKIBIY O ‘ZGARISHLAR VA ULARNI BAHOLASH USULLARI (BUXORO VILOYATI MISOLIDA). *YANGI RENESSANSDA ILM-FAN TARAQQIYOTI*, *1*(3), 525-527.

2. Toshov, M. H., & Bobojonova, M. D. (2025). RAQAMLI IQTISODIYOTNI SHAKLLANTIRISH. *Modern Science and Research*, *4*(4), 622-628.

3. Алимова, Ш. А. (2025). РОЛЬ НАЛОГОВОЙ ПОЛИТИКИ В СТИМУЛИРОВАНИИ РЕГИОНАЛЬНОГО РАЗВИТИЯ: ОПЫТ УЗБЕКИСТАНА. *Modern Science and Research*, *4*(5), 52-57.

4. Sodiqova, N. (2025). METHODOLOGY FOR DEVELOPING STUDENTS'TECHNICAL THINKING IN ECONOMICS LESSONS. *Journal of Multidisciplinary Sciences and Innovations*, *1*(3), 674-678.

5. Supiyevna, B. M. (2025). FOREIGN EXPERIENCE OF BANK CREDIT IN FINANCIAL SUPPORT OF SMALL BUSINESSES. *NEW UZBEKISTAN, NEW JOURNAL OF RESEARCH*, *2*(9), 715-721.

6. Mahmudovna, Q. G. (2025). Indicators for assessing the competitiveness of educational institutions. *Multidisciplinary Journal of Science and Technology*, *5*(6), 1956-1959.

7. Qayumovna, J. Z., Ne’matovna, R. N., & Azizovna, P. A. FAVORABLE INVESTMENT CLIMATE FORMATION ISSUES FOR ATTRACTING ACTIVE INVESTMETNS. *GWALIOR MANAGEMENT ACADEMY*, *29*.

8. Bahodirovich, K. B., & Mahmudovna, Q. G. (2025). RISK REGULATION IN BANKING SYSTEM. *MODERN EDUCATIONAL SYSTEM AND INNOVATIVE TEACHING SOLUTIONS*, *1*(5), 231-237.

9. Shadiyev, A. X. (2025). IMPROVING THE ORGANIZATIONAL MECHANISM FOR REGIONAL SOCIO-ECONOMIC DEVELOPMENT. *SHOKH LIBRARY*.

10. Ikromov, E. (2025). FISCAL POLICY: TOOLS AND CHALLENGES FOR ECONOMIC STABILIZATION. *Journal of Applied Science and Social Science*, *1*(4), 287-290.

11. Azimov, B. (2025). INNOVATIVE INFRASTRUCTURE EFFICIENCY ASSESSMENT INDICATORS AND THEIR DEVELOPMENT STAGES. *International Journal of Artificial Intelligence*, *1*(4), 827-832.

12. Bustanovna, J. Z. (2025). METHODOLOGY FOR ASSESSING THE EFFECTIVENESS OF AN ORGANIZATION'S MARKETING STRATEGY. *SHOKH LIBRARY*.

13. Naimova, N. (2025). THE CONCEPT OF A MANAGER, THE ESSENCE OF PERSONAL AND PROFESSIONAL CHARACTERISTICS, AND THEIR CLASSIFICATION. *International Journal of Artificial Intelligence*, *1*(4), 950-954.

14. Bobojonova, M. (2025). MARKETING IN THE GREEN ECONOMY: STRATEGIES, TRENDS, AND IMPACTS. *International Journal of Artificial Intelligence*, *1*(4), 1401-1404.

pISSN:2349-5707 Volume:13,Issue 2, February -2026 eISSN:2349-5715

15. Ibragimov, A. (2025). IMPROVING INVESTMENT AND INNOVATION STRATEGIES IN THE LEATHER AND FUR INDUSTRY. *International Journal of Artificial Intelligence*, *1*(4), 938-941.

16. Djurayeva, M. (2025). ADVANCING COMMERCIAL BANKING THROUGH INNOVATIVE APPROACHES. *International Journal of Artificial Intelligence*, *1*(4), 1125-1128.

17. Umarova, H. (2025). PROCESSES TO IMPROVE LIVING CONDITIONS AND ENSURE EMPLOYMENT OF THE POPULATION IN RURAL AREAS IN UZBEKISTAN. *Journal of Applied Science and Social Science*, *1*(3), 213-217.