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THE ROLE OF INTERNAL AUDIT IN CORPORATE GOVERNANCE AND THE ACCOUNTING INDICATORS FOR ITS EVALUATION

Khamidov Javokhir Shavkat ugli

Independent Researcher
Urgench State University
javoxir22282@gmail.com

In an environment where audit activities are becoming increasingly complex, evaluations based solely on human judgment cannot fully ensure objectivity. Statistical and econometric methods, by contrast, reduce randomness and enhance the scientific validity of results. Therefore, transitioning to a quantitative assessment of audit effectiveness represents an objective and inevitable necessity.

This approach is grounded in probability theory, regression analysis, information asymmetry theory, and agency theory. Audit is considered an integral institution of economic relations, and its effectiveness can be explained through statistical regularities. Such an approach enriches audit theory with empirical evidence and ensures the reliability of scientific conclusions.

Foreign scholars have conducted extensive research on modern statistical and econometric methods for measuring audit effectiveness. For instance, Sheu, G.-Y., and Liu, N.-R. (2024) investigated the integration of a Naïve Bayes classifier into the audit sampling process, offering a deeper analytical perspective. This approach links statistical sampling with emerging trends and enhances audit effectiveness in complex data environments.

Elumilade et al. (2025) examined how statistical sampling methods improve audit efficiency. The authors demonstrate that random, stratified, and monetary unit sampling techniques accelerate the analysis of financial statements, optimize resources, reduce time and costs, and improve audit quality. They also analyze the integration of statistical sampling with modern data analytics, automation, and digital technologies as a significant factor in enhancing audit efficiency.

Tarkh et al. (2024) explored the relationship between the quantitative measurement of risks of material misstatement and the efficiency of determining audit sample sizes. Their findings indicate that quantitative risk assessment significantly increases the efficiency of sample size determination, thereby balancing the effectiveness and efficiency of the audit process.

Bednarek and Ciak (2022) studied performance audit effectiveness indicators in Poland's public audit institutions. The research applies statistical approaches to analyze processes, results, and audit impact, highlighting the importance of statistical analysis and in-depth indicator evaluation in assessing audit effectiveness.

Li et al. (2025) applied unsupervised outlier detection models to audit analytics using U.S. spending data. These models help identify statistical anomalies and enhance the efficiency of analyzing large datasets, thereby improving overall audit effectiveness.

In the context of the modern digital economy, as business entities become increasingly complex, the requirements for internal audit systems are undergoing fundamental changes. Traditional audit approaches are often limited by reliance on restricted datasets and retrospective analysis. In contrast, the use of Big Data analytics transforms internal audit into a proactive, continuous, and

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data-driven management instrument. From this perspective, analyzing the application of Big Data technologies in internal audit across the stages of planning, examination, and reporting has significant scientific and practical importance.

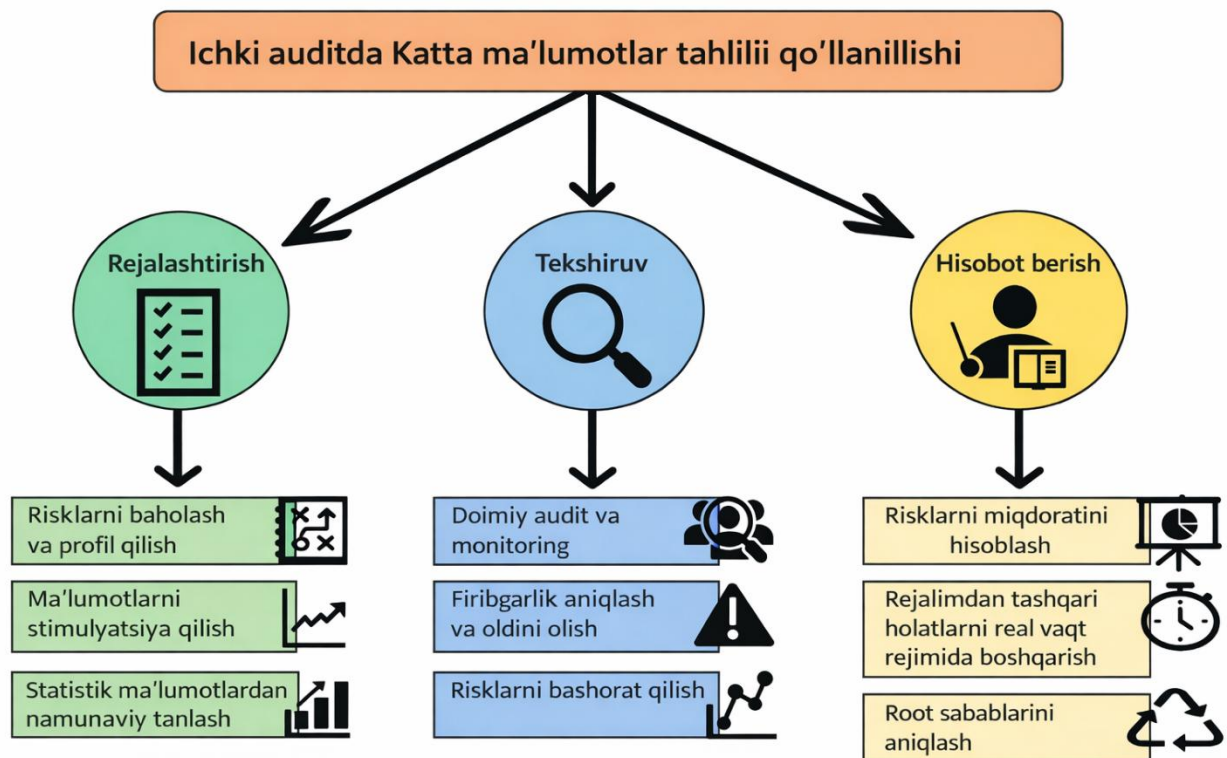


Figure 1.2.1. Conceptual Model of Using Big Data Analytics in the Internal Audit Process

The first stage of the internal audit process—planning—reaches a qualitatively new level through Big Data analytics. Risk assessment and risk profiling are no longer based solely on subjective expert evaluations but on a comprehensive set of historical, operational, and external data. As a result, audit objects and processes are clearly segmented according to priority levels. Data simulation enables the modeling of potential risks in advance, allowing more efficient allocation of audit resources. Furthermore, the application of statistical sampling methods expands audit coverage while minimizing time and costs. Overall, Big Data analytics transforms the planning stage into a strategically oriented and goal-focused management system.

The second stage—fieldwork or examination—becomes a continuous, real-time process through Big Data analytics. Continuous auditing and monitoring mechanisms ensure that financial, operational, and managerial processes remain under constant observation. This approach enables immediate detection of deviations and irregularities rather than limiting audit activities to periodic reviews. Big Data analytics is particularly significant in fraud detection and prevention, as it allows the identification of unusual transactions, repeated suspicious operations, and hidden relationships within large datasets. Risk management thus moves beyond merely recording existing issues to analyzing root causes and developing preventive measures. Consequently, the examination stage strengthens the operational and proactive nature of internal audit.

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The final stage—reporting—also acquires new qualitative characteristics through Big Data analytics. At this stage, risks are quantitatively measured and calculated, and audit results are presented to management in precise, measurable, and comparable indicators.

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