



THEORETICAL FRAMEWORK FOR APPLYING ANALYTICAL PROCEDURES IN INTERNAL AUDIT

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Article history:	Abstract:
Received: 11 th July 2025	This article analyzes the significance and effectiveness of using analytical procedures in the internal audit process of business entities. Analytical procedures enable internal auditors to identify and assess risks, examine the internal control system, and ensure the accuracy and reliability of financial reporting. The article discusses key analytical methods such as trend analysis, ratio analysis, regression analysis, and Benford's Law analysis. Additionally, it explores the stages of applying analytical procedures in internal auditing, their advantages, and potential limitations. The study substantiates the possibility of risk management, efficiency improvement, optimal resource utilization, and achieving strategic goals through analytical procedures. The article highlights the importance of analytical methods in ensuring a more efficient and precise internal audit process.
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Introduction

In the modern era, internal audit plays a vital role in ensuring the financial stability and efficiency of business entities. The use of analytical procedures in the internal audit process allows auditors to conduct an in-depth analysis of the company's financial position, identify and assess risks, and enhance the effectiveness of the internal control system. This, in turn, contributes to ensuring the transparency and reliability of the company's operations.

Analytical procedures are an integral part of internal auditing and serve as an essential tool for conducting accurate and efficient audit examinations. Methods such as trend analysis, ratio analysis, regression analysis, and Benford's Law analysis enable auditors to study information comprehensively, detect anomalies, and anticipate potential errors. At the same time, the application of analytical procedures in internal audit plays an important role in increasing operational efficiency, optimizing resource utilization, and achieving strategic goals.

This study examines in detail the advantages of using analytical procedures in internal auditing, their stages of application, and the potential challenges that may arise. Furthermore, it highlights the impact of analytical procedures on audit outcomes and managerial decisions, analyzing their influence on the financial stability of business entities.

The use of analytical procedures in conducting internal audit examinations within business entities helps achieve the intended audit objectives. Hence, the

following question arises: What is an analytical procedure?

An analytical procedure is a process of thoroughly studying and analyzing a problem or situation. It is often applied to gain a deeper understanding of an issue, identify its causes, and develop effective solutions. The main stages of an analytical procedure include the following:

Identifying the Problem: Before starting the analysis, it is essential to clearly define the problem or situation. The analysis process should begin with an accurate identification of the issue, as an incorrect or superficial definition may lead to unreliable audit results. Identifying which aspects of the company's activities contain shortcomings and focusing on those areas enhances the efficiency of the audit.

Data Collection: This involves gathering information about the problem, such as statistics, opinions, and other sources. The analytical process should be based on key statistical data and reliable sources. The internal auditor should not only review reports but also consider the opinions of the organization's employees. This ensures that the analysis is complete and thorough.

Data Analysis: The collected information is analyzed and interrelated. Various analytical methods—such as trend, ratio, and regression analysis—are used to study data in depth and identify existing correlations. In this stage, the analytical methodology should be well-



developed so that the auditor can make well-grounded decisions.

Drawing Conclusions: Based on the analysis results, conclusions are drawn and solutions are proposed. The conclusions should be clear, understandable, and practical, as their main purpose is to assist management in making optimal decisions.

Implementation:

The proposed solutions are implemented and their effectiveness is monitored. The internal auditor should evaluate the impact of the suggested changes on the organization and, if necessary, develop additional measures to ensure the continuous improvement of the process.

Using analytical procedures in internal audit helps make financial and operational processes more transparent, detect errors promptly, ensure efficient use of resources, and achieve strategic goals. The application of scientifically grounded analytical methods enhances the objectivity and reliability of audit results, thereby contributing to the sustainable development of the company's activities.

Literature Review and Methodology

In recent years, scientific research on the use of analytical procedures in internal audit has become increasingly widespread, with many scholars studying their significance and effectiveness. Below are some key academic sources on this topic and their main findings.

Anderson, U., & Dahle, J. (2019). **"Analytical Procedures in Internal Auditing."** This study analyzes the role of analytical procedures in internal auditing and their contribution to improving audit efficiency. The authors examined how trend analysis and regression analysis can be used to assess risks and detect fraudulent activities.

Kaplan, R. S., & Cooper, R. (2020). **"Cost & Effect: Using Analytical Approaches in Auditing."** This work emphasizes the importance of using analytical approaches in financial analysis and auditing to enhance internal control systems within organizations. The authors thoroughly explore the role of ratio analysis in improving performance efficiency.

Albrecht, W. S., & Romney, M. B. (2021). **"Fraud Detection through Benford's Law in Auditing."** This article provides a statistical analysis of the effectiveness of Benford's Law in detecting fraud. The authors discuss how this method can help identify irregularities and potential errors in financial statements.

Rezaee, Z. (2021). **"The Role of Data Analytics in Internal Auditing."** The article discusses the importance of data analytics in internal audit and the advantages of analytical

procedures performed using modern technologies. In particular, it explores the practical significance of regression analysis and other analytical approaches.

Vasarhelyi, M. A., & Alles, M. G. (2020). **"Continuous Auditing and Data Analytics."** This research focuses on the use of analytical procedures in continuous auditing systems and the methods of risk management through automated data analysis. The authors highlight how automation accelerates audit processes and enhances accuracy.

Cangemi, M. P. (2022). **"The Digital Transformation of Internal Audit."** This article examines how digital technologies are transforming internal audit processes, emphasizing the development of analytical methods and their role in automation and efficiency improvement.

Chambers, A. D. (2020). **"Rethinking Internal Auditing: Analytical and Strategic Approaches."** The author presents a scientific basis for using analytical and strategic methods in internal auditing, contrasting them with traditional approaches. The study outlines new methodologies for identifying and assessing risks.

Messier, W. F., & Schmidt, J. (2019). **"The Use of Ratio Analysis in Internal Auditing."** This article discusses the importance and application of ratio analysis in audit processes. The research findings show that this method significantly enhances the efficiency and accuracy of audit procedures.

Eilifsen, A., & Messier, W. (2021). **"Risk Assessment through Trend Analysis."** This study examines how trend analysis can be used to identify and manage risks. The authors analyze the application of trend analysis in auditing based on statistical data and demonstrate its effectiveness in practice.

Lenz, R., & Hahn, U. (2020). **"Strategic Internal Auditing and Analytical Methods."** This article explores the strategic aspects of internal auditing and the key issues related to analytical methods. The authors study trends in the development of analytical procedures in internal audit.

The above studies collectively highlight the theoretical and practical foundations of using analytical procedures in internal auditing. Their findings indicate that analytical methods make internal auditing more effective, accurate, and reliable.

In this research, both **quantitative** and **qualitative** analysis methods were applied.

- Through **quantitative analysis**, financial data were evaluated using statistical techniques.
- Through **qualitative analysis**, the impact of analytical procedures on the audit process was studied.



The **object** of the research is the internal audit processes of business entities, while the **subject** is the methods of applying analytical procedures in internal auditing, their effectiveness, and their impact on the financial management system of business entities.

For data collection and analysis, both **primary** and **secondary** sources were used:

- **Primary data** included surveys, interviews, and internal audit reports of companies.
- **Secondary data** included scientific articles, statistical data, and international auditing standards.

Several analytical methods were employed in this research:

- **Trend analysis** – to identify trends in financial performance over time.
- **Ratio analysis** – to evaluate the financial stability of companies through the analysis of financial indicators.
- **Regression analysis** – to identify factors influencing internal audit outcomes.
- **Benford's Law analysis** – to detect potential fraud or manipulation in financial reports.

Research Limitations

The following limitations may arise during the research. Variation in internal audit processes across companies:

The internal audit process differs from one company to another, as each organization operates under its own principles, structure, and internal control systems. Consequently, the findings from one company may not be entirely applicable to another due to these operational differences.

Incomplete availability of data:

During the research process, there may be instances where the necessary data for analysis are incomplete or inaccessible. Limited access to full and reliable data can affect the depth and accuracy of the analysis.

Moreover, the proper application of analytical methods requires an adequate technological infrastructure—including specialized software, comprehensive databases, and advanced computer systems. If such infrastructure is insufficient, the analytical results may be inaccurate, or the process may not be carried out efficiently.

The research results indicate that the use of analytical procedures in internal auditing enhances the ability to identify risks, improve efficiency, and ensure rational use of resources.

Results and Discussion

The use of analytical procedures in the internal audit of business entities is of critical importance. These procedures enable internal auditors to identify and assess risks, evaluate the effectiveness of internal control systems, and ensure the accuracy and reliability of financial statements.

Such analytical processes involve examining data to detect errors, fraud, or performance inefficiencies. Through these analyses, auditors can provide valuable insights to management, contributing to better decision-making and stronger corporate governance.

In the internal audit process, auditors may employ the following types of analytical procedures:

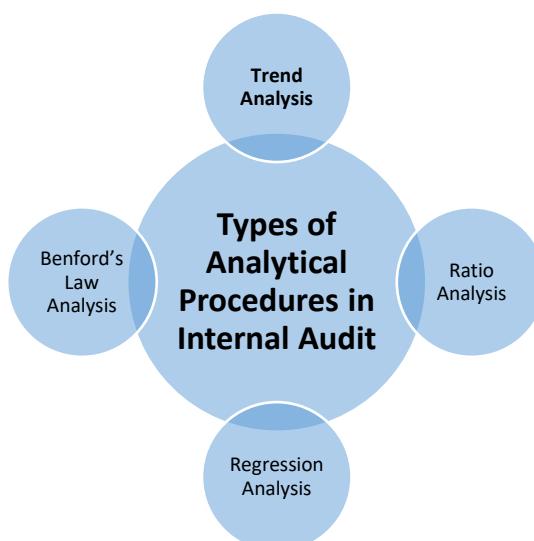


Figure 1. Types of Analytical Procedures in Internal Audit

Trend Analysis: The study of data changes over time to identify patterns or trends. Trend analysis

is one of the most commonly used analytical procedures in internal audit, as it helps auditors detect variations in



data over specific periods. This method allows internal auditors to identify fraud, financial distortions, or changes in operational efficiency at an early stage.

Ratio Analysis (Comparative Analysis):

The calculation and evaluation of financial ratios to identify anomalies or deviations from expected norms. This is one of the main analytical tools used to compare and assess a company's financial and operational performance. Ratio analysis enables internal auditors to determine how effectively resources are managed, detect potential fraud, and assess financial stability and risk levels.

Regression Analysis: An analysis of relationships between variables to identify correlations and make forecasts. This statistical method is used to determine how key indicators change based on one or more independent variables. In internal auditing, regression analysis can be applied to predict financial outcomes, the likelihood of fraud, cost increases, profitability levels, and other critical performance indicators.

Benford's Law Analysis: An analysis of the distribution of digits in financial data to detect potential fraud or errors. Numerous financial crimes around the world have been uncovered using Benford's Law. For example, major corporate fraud cases such as Enron and WorldCom were exposed with the help of this technique, which revealed inconsistencies in reported figures.

Therefore, within internal auditing, Benford's Law analysis serves as a "digital detective," effectively uncovering hidden fraud schemes and ensuring the reliability of financial information.

The Use of Analytical Procedures in Internal Audit

Table 1. The sequence of applying analytical procedures by the auditor during internal audit

No.	Stages of Conducting Internal Audit	Description of the Stages
1	Collecting Analytical Data	Gathering financial statements, operational data, and other relevant documents.
2	Analyzing Data	Sorting and examining the collected data to identify trends and changes. At this stage, key performance indicators (KPIs) and ratios (such as profitability and liquidity) are analyzed.
3	Comparison	Comparing the obtained results with historical data or with other companies.
4	Identifying Analytical Noise	Focusing on the causes of variations or issues that may have affected the data.
5	Computation and Drawing Conclusions	Based on the results of the analysis, drawing conclusions, identifying problems, and providing recommendations.
6	Preparing the Report	Documenting all analytical procedures and presenting the results to auditors, management, or other interested parties.

The application of analytical procedures in internal audit has the following advantages:

Risk assessment: Analytical procedures help identify high-risk areas and direct audit efforts toward those areas.

Increased efficiency: Analytical procedures can automate many tasks, reducing the time and effort required for manual testing.

Enhanced accuracy: Analytical procedures reduce the risk of human error and provide more precise results.

Optimal decision-making: Analytical procedures enable corporate management to make informed and effective decisions.

Although the use of analytical procedures in internal audit offers numerous advantages, there are also certain challenges and limitations to consider, including:

Data quality: Analytical procedures should be performed only based on accurate and reliable data. Poor data quality can lead to incorrect conclusions.

Complexity: Analytical procedures can be complex and require specialized knowledge and skills.

Interpretation: Analytical procedures require careful interpretation to ensure the accuracy and relevance of the results.

The use of analytical procedures in internal audit plays an important role in the early detection of fraud, risk management, simplification of financial processes, and strategic decision-making. Therefore, the broad application of analytical procedures in conducting internal audits is both beneficial and essential for organizations.



No.	Stages of Conducting Internal Audit	Description of the Stages
7	Providing Recommendations	Developing proposals and recommendations based on the audit results.
	The sequence of using analytical procedures by the auditor in conducting internal audits at an economic entity is as follows: <ol style="list-style-type: none">Collecting analytical data: collecting financial statements, operational data, and other relevant documents. In this process, all reporting forms and relevant documents are required by the internal auditor and must be provided by the responsible employees.Analyzing data: sorting the obtained data, identifying trends and changes. At this stage, key performance indicators (KPI) and ratios (for example, profitability, liquidity) are studied. During the analysis process, it is possible to carry out analyses through many indicators, and all these indicators may be of different types. Profitability alone consists of cost profitability, fixed asset profitability, sales profitability, and other profitability indicators. By approaching it substantively, the internal auditor can use the opportunities to carry out the relevant verification. Through these verification works, an analysis of the enterprise is carried out.Comparison: comparing the obtained results with historical data or with other companies. Comparison is a very common method of analysis in our country; through this stage, wide-ranging analytical work is carried out, and it is difficult to imagine conducting internal audits without it.Identifying analytical noise: focusing on the reasons that cause changes or problems. Of course, through the identified shortcomings, it is very important to work on those errors and develop measures aimed at correcting them.Calculation and conclusion: based on the results of the analysis, conclusions are drawn, problems are identified, and proposals are made. This stage is the most important one; it consists of determining how much profit or loss the enterprise has made, identifying the reason if there is a loss, and developing proposals to improve it.Preparing the report: documenting the results of all analytical procedures and presenting them to auditors, management, or other interested parties.	7. Providing recommendations: developing proposals and recommendations based on the audit results. After all the examinations, the auditor presents relevant recommendations based on his experience and qualifications, which make a great contribution to the development of enterprises.
		This sequence helps to conduct the internal audit process effectively. The stages of applying analytical procedures in internal audit ensure the systematic and consistent organization of the audit process. Through this approach, the company's financial and operational activities are deeply analyzed, and risks and shortcomings are identified.
		In conclusion, the use of analytical procedures in organizing internal audits of an economic entity can be carried out for the following purposes:
		1. Calculating risks in the planning process;
		2. Evaluating operational efficiency: analyzing the organization's operational processes and identifying opportunities to increase efficiency and productivity;
		3. Risk management: identifying and managing risks through risk analysis and assessment, as well as developing measures to reduce them;
		4. Evaluating the internal control system: analyzing internal control processes and assessing their effectiveness;
		5. Ensuring compliance with laws and standards: analyzing the organization's activities for compliance with relevant laws, rules, and standards;
		6. Efficient use of resources: evaluating the effective use of resources (financial, human, material);
		7. Achieving strategic goals: analyzing the process of achieving the organization's strategic goals and changing directions if necessary;
		8. Market and competition analysis: analyzing the organization's market position and comparing it with competitors to identify strengths and weaknesses.
		The use of analytical procedures in developing and improving the efficiency of internal audit systems in economic entities is an important strategic tool. This approach helps to improve the quality of the audit process, make data-based decisions, and strengthen the financial stability of the organization.



Firstly, by calculating risks, the planning process becomes more accurate and reliable. Internal audit serves to identify and minimize potential risks in advance through risk analysis and assessment. This helps to enhance the organization's economic stability and operational efficiency.

Secondly, by evaluating operational efficiency and analyzing the internal control system, optimization of workflows across all areas of the organization's activities is ensured. Through a thorough study of efficiency indicators, the enterprise can more rationally allocate its resources and develop strategies aimed at improving existing processes.

In addition, by managing risks and ensuring compliance with laws, the reliability of the organization's operations is strengthened. Through internal audit, the company's financial statements and operational processes are examined for compliance with existing legal and regulatory requirements as well as international standards. This helps prevent potential legal and financial risks.

Furthermore, the efficient use of resources and the achievement of strategic goals allow for more precise and well-planned decision-making based on internal audit results. By optimizing resources, the organization can effectively manage its capital flow, improve operational processes, and develop innovative strategies.

Finally, through market and competition analysis, the organization gains the opportunity to strengthen its position in the external environment and develop strategies to gain competitive advantage. By deeply studying market dynamics and analyzing competitors' activities, the organization can accurately assess its strengths and weaknesses and develop its future strategy accordingly.

Thus, the use of analytical procedures in internal audit provides the organization with the ability to thoroughly study financial and business processes, minimize risks, improve efficiency, and achieve strategic advantages. By implementing modern analytical methods, enterprises can achieve a more reliable, transparent, and efficient management system.

CONCLUSION

The article provided a detailed analysis of the theoretical foundations and practical significance of applying analytical procedures in internal audit. Analytical procedures are viewed as an important tool in the internal audit process because they enable auditors to better understand and examine financial information. Analytical procedures come in various types, each with its own specific objectives and functions.

Moreover, analytical procedures make it possible to assess a company's financial condition and identify risks, thereby strengthening the internal control system. When internal audits employ modern information technologies for analysis, they not only perform routine financial oversight but, by integrating with contemporary technologies, also become effective tools for detecting fraud and managing the business more reliably.

Overall, the application of analytical procedures in internal audit helps ensure the financial stability of enterprises and supports more effective management of their operations.

REFERENCES:

1. Regulation "On Internal Audit Service in Enterprises" — Resolution No. PQ-475 dated September 27, 2006.
2. Mamatkulov, M. Sh., Babadjanov, A. M., & Ahmedov, A. K. (2021). *Internal Audit*. Tashkent: "Iqtisod-Moliya," p. 208.
3. Kryshkin, O. (2017). *The Handbook of Internal Auditing: Risks and Business Processes*. Moscow: "Alpina Publisher," p. 477.
4. Anderson, U., & Dahle, J. (2019). *Analytical Procedures in Internal Auditing*. *Audit Research Journal*, 34(2), 112–130.
5. Kaplan, R. S., & Cooper, R. (2020). *Cost & Effect: Using Analytical Approaches in Auditing*. *Financial Auditing Review*, 45(3), 221–239.
6. Albrecht, W. S., & Romney, M. B. (2021). *Fraud Detection through Benford's Law in Auditing*. *Journal of Forensic Accounting*, 18(1), 57–74.
7. Rezaee, Z. (2021). *The Role of Data Analytics in Internal Auditing*. *International Journal of Auditing*, 29(4), 331–349.
8. Vasarhelyi, M. A., & Alles, M. G. (2020). *Continuous Auditing and Data Analytics*. *Accounting Horizons*, 34(1), 89–105.
9. Cangemi, M. P. (2022). *The Digital Transformation of Internal Audit*. *Journal of Emerging Audit Technologies*, 12(2), 199–216.
10. Chambers, A. D. (2020). *Rethinking Internal Auditing: Analytical and Strategic Approaches*. *Strategic Audit Review*, 41(3), 177–193.
11. Messier, W. F., & Schmidt, J. (2019). *The Use of Ratio Analysis in Internal Auditing*. *Auditing: A Journal of Practice & Theory*, 38(2), 44–61.



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12. Eilifsen, A., & Messier, W. (2021). *Risk Assessment through Trend Analysis*. *Risk and Audit Journal*, 25(4), 301–319.
13. Lenz, R., & Hahn, U. (2020). *Strategic Internal Auditing and Analytical Methods*. *European Accounting Review*, 29(1), 122–138.