Audit Quality Assessed through Independence Indicators

Research Assist. Cristian LUNGU, Ph.D. Student,
Faculty of Economics and Business Administration,
West University of Timișoara, Romania,
e-mail: cristian.lungu00@e-uvt.ro

Univ. Prof. Ovidiu Constantin BUNGET, Ph.D.,
Faculty of Economics and Business Administration,
West University of Timișoara, Romania,
e-mail: ovidiu.bunget@e-uvt.ro

Abstract
Audit quality is one of the most important concerns of audit firms, statutory audit regulators and academia. The purpose of this study is to analyze and evaluate the influence of auditor independence indicators on the quality of services provided. Based on the data available in the Audit Analytics database, a sample of 31 companies listed on the Bucharest Stock Exchange was selected, for which 124 observations were reported during four consecutive years. The results of the quantitative analysis performed demonstrated the existence of a significant and positive correlation between the variables that measure auditor independence, such as the provision of non-audit services, financial independence, Big 4 membership and turnover and the dependent variable - the quality of audit services.

Key words: audit quality; auditor independence; statutory audit;

JEL Classification: M42
1. Introduction

The statutory audit is an essential component of the system for ensuring the quality of financial information and, implicitly, the stability of the financial market. The independence of the auditors is a fundamental pillar of this process, guaranteeing that the evaluation and reporting of financial information is carried out with objectivity and impartiality. In light of the complexity of financial markets and the continuous growth of the size and diversity of audited entities, the assessment of audit quality through independence indicators becomes a particularly current and relevant topic.

In the context, this article focuses on assessing audit quality through specific independence indicators. These indicators, subject to a thorough analysis, include: the degree of financial independence of the auditor from the client, membership of the big audit firms (Big Four), the auditor’s turnover and the existence of related services provided by the auditor. Each of these indicators represent key factors that can influence the auditor’s independence during the audit process and significantly affect the integrity and quality of the audited financial information.

In this scientific endeavor we explore each of these independence indicators, evaluating their impact on a quality audit. Therefore, by using quantitative research methods of the variables included in the study carried out, we aim to contribute to the development of a deeper understanding and to the identification of optimal solutions for maintaining a high-quality audit in the current economic environment.

The proposed study was developed in five sections: the first part presents the context of the research, the second section is dedicated to the review of the specialized literature existing up to the present moment, and the following two sections include the research methodology, respectively the results obtained. The final section, the fifth, highlights the conclusions resulting from the econometric analysis.

2. Specialized literature overview

In a concise and selective way, the current state of knowledge, in a national and international context, will be highlighted in what follows.

In the context of the priority of providing a high-quality audit, the investigation of the determinants of audit quality has become a topic of significant academic interest.

Therefore, Djamil (2000) found that there are six factors influencing audit quality. These factors include: the scope of the audit mandate, the diversity of the client portfolio, the financial stability of the audited entity, the involvement of a third party in the review of the audit report, the audit fee and the degree of independence of the auditor.

According to the regulations and principles of the code of ethics of professional accountants and auditing standards, it is imperative that an auditor demonstrates independence during the performance of his duties and adopts a neutral position, avoiding any form of favoritism towards any party involved, in order to prevent any potential conflicts of interest (Arens et al., 2012).

Auditor independence focuses on the results of an audit engagement. According to research conducted by Sari (2011), it can be seen that the perception of the level of independence in the audit reasoning process tends to increase. A high degree of independence gives the individual greater freedom of action, allowing him to make superior judicious choices compared to those who lack this independence (Draupadi & Sudana, 2015).

In their paper, Rahmina & Agoes (2014) claim that 21.4% of the variation in audit quality can be explained by the degree of independence of the financial auditor. Researchers also note the existence of a directly proportional relationship between the dependent variable and the independent variable. In other words, an increase in the level of independence can positively influence the quality of services provided by an auditor.

Another complex study conducted by Sarwoko & Agoes (2014) highlighted that the auditor’s specialization within a particular industry and his degree of independence are significant factors in the implementation of audit procedures for fraud detection. Moreover, it was found that the auditor’s specialization in the specific field, the independence of the auditor and the application of audit methods to identify frauds have a significant influence on the quality of the audit process. These results suggest that improving the quality of the audit process can be achieved by strengthening the specific skills of the auditor’s industry, encouraging an independent attitude and implementing appropriate audit procedures to detect significant fraud in the financial statement audit process.

Also, Oziegb & Oden (2022) and Tepalagul & Lin (2015) found conclusively that auditor independence exerted a significant and positive impact on audit quality. The higher the level of independence of the auditor, the higher the quality of the resulting audit. Maintaining neutrality in the
exercise of audit responsibilities indicates that the auditor enjoys total independence from any external influences and observes ethical norms and correct principles in his relationship with creditors, society and other interested parties who rely on the audit results. Thus, guaranteeing a high quality in the audit process requires a consistent and firm attitude of independence on the part of the auditor.

Other studies, such as Enofe et al. (2013), Halim et al. (2014), Ezejiofor & Erhirhie (2018), Zayol et al. (2017) support previous findings, confirming the existence of a significant and positive correlation between audit quality and financial auditor independence.

On the other hand, to date, there is research that reports an inverse relationship between these two variables. Gamal et al. (2020) demonstrated a negative correlation between the independent variables expressed by the indicators of auditor independence and competence and the dependent variable, audit quality. In the same context, Ilaboya & Ohokha (2014) highlighted a negative influence of the variables: auditor independence, audit firm size and audit mandate duration on audit quality. Furthermore, Kabiru & Abdullahi (2012) and Ramdin (2021) identified that auditor independence did not significantly improve the quality of audited financial statements.

3. Research methodology

3.1 Structure of the analyzed sample

In order to carry out the quantitative analysis in this research, a rigorous selection of the enterprises that were taken into account was carried out. This selection focused on the companies registered on the trading list of the Bucharest Stock Exchange, in the "Standard" and "Premium" categories. From an initial set of 59 enterprises, a sample of 31 companies was chosen. This selection involved the elimination of firms for which the necessary information was not available, with the aim of examining statistical and causal relationships over as long a time period as possible, between the years 2018 and 2021.

The data used for the indicators of interest in this research were obtained from reliable sources, especially from the Audit Analytics database and from the official website of the Bucharest Stock Exchange. These data were collected with great care and were used to construct a set of 124 observations, representing the basic elements for the analysis performed in this study.

3.2 Identification and quantification of variables

3.2.1 The dependent variable

The quality of services provided by a financial auditor is assessed by means of the natural logarithm of the audit fees charged to the audited entity (Sultana et al., 2019 and Bédard et al., 2019). According to Yuniarti (2011), the value of the audit fee depends on the risk of the assignment, the complexity of the services provided, expertise and other professional considerations. This author suggests that higher remuneration for audit services may contribute to the provision of a higher quality audit.

Additionally, the use of audit fees as a variable expressing audit quality in the literature is supported by a number of arguments. Therefore, in this research, the following previous scientific findings can be considered relevant:

- Audit fees can signal differences between quality levels (Wolinsky, 1983);
- Higher audit fees contribute to the emergence of effective and qualitative resources for the provision of audit services (DeAngelo, 1981);
- Companies pay higher audit fees to recognize auditors' reputation, industry specialization and overall quality of service provided (Ferguson & Stokes, 2002).

3.2.2 Independent variables

In the context of this scientific research, the variables that quantify the level of independence of financial auditors are represented by indicators, such as: affiliation with the four big audit firms (Big 4), the degree of financial independence of the auditor from the client, the turnover of the entity audit and the provision of non-audit services. The selection of these variables was justified by means of scientific considerations, as presented in Table no. 1.

In the context of contradictory opinions, the inclusion of the variable regarding the provision of non-audit services was an essential step in the exploration of auditor independence and audit quality, thus contributing to more consistent conclusions and a more detailed understanding of this aspect within the audit environment. business.
Table no. 1. Justification for the selection of independent variables

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Big 4</td>
<td>Auditor independence is positively correlated with the size of the audit entity. Large audit firms, such as the Big 4, are found to have a higher degree of independence and competence (DeAngelo, 1981 and DeFond &amp; Zhang, 2014).</td>
</tr>
<tr>
<td>The degree of financial independence of the auditor from the client</td>
<td>Increased pressure is identified on auditors dealing with the effects of fee dependency on the exercise of independent audit judgment (Craswell et al. 2002).</td>
</tr>
<tr>
<td>Audit entity's turnover</td>
<td>Variables quantifying the size of a firm show a positive and significant correlation with auditor independence (Sanni et al. 2021).</td>
</tr>
</tbody>
</table>
| Provision of non-audit services                            | • The study shows that there is a positive relationship between audit fees and non-audit fees, which does not suggest a loss of independence (Zhang et al. 2016);  
  • There is no evidence of a relationship between auditor independence and non-audit services (Ghosh et al. 2009);  
  • Fees for non-audit services can be considered as a threat to auditor independence (Ahmed et al. 2022). |

Source: Own processing

3.3 Quantitative analysis tools

3.3.1 The correlation matrix

In the first stage of this study, the focus was on identifying the linear relationships between the analyzed indicators. To evaluate these relationships within our sample we chose to use a statistical approach known as Correlation Analysis.

Correlation analysis is an essential tool in scientific research, being used to evaluate and quantify assumed linear relationships between various variables. This statistical method provides researchers with a rigorous way to examine the degree of association between two or more variables and to measure the strength of that association. Correlation Analysis focuses on identifying and quantifying causal or direct influence relationships between variables, allowing researchers to assess whether changes in one variable are correlated with corresponding changes in another. Correlation coefficients, such as Pearson's coefficient or Spearman's coefficient, can be used to determine the degree of correlation, with values ranging between -1 and 1, where -1 indicates a perfect negative correlation, 1 indicates a perfect positive correlation, and 0 shows no correlation (Colton, 1974).

3.3.2. Ordinary Least Square

Ordinary Least Square (OLS) is a fundamental statistical technique used in research and data analysis that focuses on identifying and quantifying relationships between a dependent variable and one or more independent variables.

OLS provides regression coefficients that indicate how much the dependent variable varies as a function of a unit change in the independent variable, as well as an intercept value, which is the value of the dependent variable when all independent variables are zero.

The econometric function of the stated hypotheses used in the econometric regression is as follows:

\[ Y_t = \alpha + \beta * X_t + \epsilon_t, \]

where:

- \( Y_t \) – dependent variable: Audit fee;
- \( \alpha \) – the coefficient of the free term;
- \( \beta \) – the coefficient of the independent variable;
- \( X_t \) – independent variables: Auditor's turnover, Big 4 membership, Auditor's financial independence from the client, Provision of non-audit services;
- \( \epsilon_t \) – residual error;

Thus, the dependent and independent variables used in the regression model were represented and quantified based on the following indicators:
Audit Quality Assessed through Independence Indicators

1. Audit quality → Audit fee charged by the financial auditor;
2. The turnover of the financial auditor → natural logarithm of the turnover;
3. Belonging to the Big 4 → 1 represents affiliation with one of the four big audit companies (Big 4), while 0 indicates the absence of this affiliation;
4. Financial independence of the auditor from the client → calculated as: $1 - \frac{\text{The audit fee charged to client}}{\text{Auditor's turnover}}$;
5. Provision of non-audit services → 1 the existence of non-financial services provided, while 0 indicates the absence of these services.

4. Results and Discussion

4.1. Pearson correlation

By means of the Correlation Matrix (Table no. 2), which exposes the statistical correlations between the evaluated variables, it can be seen that the variation in audit quality:

1. It is influenced significantly and in a positive sense by more than 75% by the variation of the turnover and the membership of the auditor to the Big 4 group;
2. It is moderately and positively correlated by 59% to the variation of non-audit services provided;
3. There is a weak correlation between the financial independence of the auditor and the quality of the services provided.

<table>
<thead>
<tr>
<th>Audit quality</th>
<th>Provision of non-audit services</th>
<th>Financial independence of the auditor</th>
<th>Big 4</th>
<th>Log Turnover</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.598</td>
<td>0.197</td>
<td>0.767</td>
<td>0.786</td>
</tr>
</tbody>
</table>

1 To interpret the correlation coefficient, we relied on the study of Colton (1974). The author proposes the following rules of interpretation: 1. A correlation coefficient between -0.25 and 0.25 indicates a weak or null correlation; 2. A correlation coefficient between 0.25 and 0.50 (or between -0.25 and -0.50) suggests an acceptable degree of association; 3. A correlation coefficient in the range of 0.5 to 0.75 (or -0.5 to -0.75) indicates moderate to good correlation; 4. A correlation coefficient greater than 0.75 (or less than -0.75) signals a very strong association or correlation.

Source: own processing, with the help of SmartPLS.

Therefore, it can be seen that the dependent variable shows a similar variation to the independent variables as shown in Table no. 3.

<table>
<thead>
<tr>
<th>Table no. 3. Presentation of the correlation of the analyzed indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Independent variables</td>
</tr>
<tr>
<td>Provision of non-audit services</td>
</tr>
<tr>
<td>Financial independence of the auditor</td>
</tr>
<tr>
<td>Big 4</td>
</tr>
<tr>
<td>Log Turnover</td>
</tr>
</tbody>
</table>

Source: own processing.

4.2. Assessing the impact of auditor independence indicators on audit quality

Before proceeding to perform a linear regression, an essential step in building the model consisted in assessing the possibility of multicollinearity between the independent variables. This procedure is carried out by means of a multicollinearity analysis, and one of the techniques often used in this context is the calculation of the variance inflation factor (VIF).

According to the results obtained, it can be deduced that a VIF with a value greater than 1 and less than 5, as shown in Table no. 4, indicates that the respective independent
variable does not have a significant correlation with the other independent variables within the model. In other words, the absence of a multicollinearity problem suggests that the stability of the model is not significantly affected by strong correlations between variables.

Following the creation of the econometric model, we proceeded to apply the regression with the least square. As illustrated in Figure no. 1, we obtained a coefficient of determination (R-square) of 72.7%. This result suggests that 72.7% of the variation in audit quality can be attributed to changes in the variables: Big 4, Auditor Financial Independence, Auditor’s Turnover and Provision of Non-Audit Services. At the same time, the remaining 27.3% of the variation in audit quality was explained by other indicators outside of this regression model.

<table>
<thead>
<tr>
<th>Variables</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provision of non-audit services</td>
<td>1.487</td>
</tr>
<tr>
<td>Financial independence of the auditor</td>
<td>1.539</td>
</tr>
<tr>
<td>Big 4</td>
<td>3.689</td>
</tr>
<tr>
<td>Log Turnover</td>
<td>4.518</td>
</tr>
</tbody>
</table>

Source: own processing, with the help of SmartPLS

Subsequent, through the extended functions of the SmartPLS software, we obtained the detailed results (Table no. 5) associated with the developed regression model.
Audit Quality Assessed through Independence Indicators

Table no. 5. Regression coefficients

<table>
<thead>
<tr>
<th>Variables</th>
<th>Standardized coefficients</th>
<th>SE</th>
<th>T value</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provision of non-audit services</td>
<td>0.191</td>
<td>0.097</td>
<td>3.264</td>
<td>0.001</td>
</tr>
<tr>
<td>Financial independence of the auditor</td>
<td>0.238</td>
<td>0.473</td>
<td>4.001</td>
<td>0.000</td>
</tr>
<tr>
<td>Big 4</td>
<td>0.183</td>
<td>0.141</td>
<td>1.988</td>
<td>0.025</td>
</tr>
<tr>
<td>Log Turnover</td>
<td>0.661</td>
<td>0.072</td>
<td>6.495</td>
<td>0.000</td>
</tr>
<tr>
<td>Intercept</td>
<td>0.000</td>
<td>0.432</td>
<td>2.746</td>
<td>0.003</td>
</tr>
</tbody>
</table>

Source: own processing, with the help of SmartPLS

By examining the regression coefficients, some aspects are highlighted, as shown in Table no. 6.

Table no. 6. Interpretation of regression results

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>P value</th>
<th>Regression coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provision of non-audit services</td>
<td>The probability associated with the test is below the 5% significance level, which indicates that the indicator is statistically significant.</td>
<td>A 1% increase in the volume of non-audit services provided can contribute to an increase in audit quality by 0.19%.</td>
</tr>
<tr>
<td>Financial independence of the auditor</td>
<td>The probability associated with the test is below the 5% significance level, which indicates that the indicator is statistically significant.</td>
<td>A 1% increase in the auditor's financial independence from the client contributes to a 0.23% increase in audit quality.</td>
</tr>
<tr>
<td>Big 4</td>
<td>The probability associated with the test is below the 5% significance level, which indicates that the indicator is statistically significant.</td>
<td>A 1% increase in the number of companies audited by the Big 4 companies increases the quality of services provided by 0.18%.</td>
</tr>
<tr>
<td>Log Turnover</td>
<td>The probability associated with the test is below the 5% significance level, which indicates that the indicator is statistically significant.</td>
<td>An increase in the turnover of the financial auditor by 1% can imply an increase in the quality of audit services by 0.66%.</td>
</tr>
</tbody>
</table>

Source: own processing

The findings resulting from the quantitative analysis performed align with previous scientific research and can be rationalized as shown in Table no. 7.

Table no. 7. Explanation and correlation of research results with previous scientific approaches

<table>
<thead>
<tr>
<th>The independent variable</th>
<th>Relevant previous studies</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provision of non-audit services</td>
<td>Lim &amp; Tan (2008); Friedrich, et al. (2022); Svanström, (2013)</td>
<td>These services allow the audit firm to develop a better understanding of their client's business, which facilitates the identification of risks and key aspects of the audit. Also, by providing advice in related areas such as risk management or implementing more effective internal control systems, audit firms can support clients in reducing possible errors or fraud, which translates into a more rigorous and accurate audit. In addition, non-audit services can help develop the skills and knowledge of audit professionals by giving them a broader perspective on the business and the environment in which it operates.</td>
</tr>
</tbody>
</table>
The independent variable | Relevant previous studies | Explanation
--- | --- | ---
Financial independence of the auditor | Craswell et al. (2002) | Diversifying an auditor's client portfolio can be a crucial element in reducing the auditor's financial dependence on a particular client. This can reduce the pressure exerted by clients on the auditor in the context of conducting a quality-oriented audit engagement.

Big 4 | Jain & Agarwalla, (2022); Che & Hope, (2020) | The Big 4 firms are distinguished by the fact that they have significant independence in terms of available resources, which gives them the ability to provide high-quality audit services without being influenced by third parties. This independence is the result of the considerable financial, technological and human resources that these companies possess.

Log Turnover | Sanni et al. (2021) | Audit firm size indicators are a key factor in ensuring the provision of high-quality audit services, as they are essential in maintaining independence from the audited client. The size of an audit firm is reflected in its financial, human and technological resources, which influence its ability to provide impartial and objective audit services.

Source: own processing

5. Conclusions
Auditor independence, emphasized as an essential element in ensuring the provision of high quality audit services, represents an area of ongoing research and concern in the context of statutory audit activity. The results of the quantitative analysis carried out demonstrated the existence of a significant and positive correlation between the variables that measure auditor independence, such as: provision of non-audit services, financial independence, Big 4 membership and turnover, and the dependent variable - the quality of audit services. This finding only emphasizes the complexity of the interaction between these variables and their relevance in determining the quality of the audit process.

The proper understanding and management of these variables become imperative to ensure an audit process free from external influences or pressures, thus helping to guarantee the credibility and integrity of the financial data analyzed. The provision of non-audit services and the financial independence of auditors can influence how they fulfill their responsibilities in the audit process, and Big 4 membership and turnover can be indicators of the resources and expertise available to deliver a high-quality audit.

In a business environment characterized by complexity and continuous change, maintaining auditor independence becomes a fundamental pillar for ensuring public and investor confidence in audit results. By extension, this helps to strengthen confidence in the integrity of the financial market as a whole. In a rapidly evolving economic landscape, where financial information is the currency of strategic decisions, auditor independence can only be seen as a *sine qua non* condition for maintaining stability and transparency in the financial field. Thus, the research and application of effective practices for managing the auditor's independence remain subjects of major interest, with a direct impact on the integrity of financial information.

Limitations of the research consisted of lack of information for testing a sample and extended time interval. The data and indicators were extracted and calculated manually, being taken from the Audit Analytics database and from the website of the Bucharest Stock Exchange.

Future research directions aim to analyze other factors, both quantitative and qualitative, that may influence the value of audit service quality.

REFERENCES


