

Anul XX

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Nr. 3 (167)/2022

- Implicații ale rotației auditorilor asupra raportării în auditul financiar
- Implications of Auditors' Rotation in Financial Audit Reporting



- Influența reglementărilor contabile și de audit asupra strategiilor de creștere externă
 - Evoluția onorariilor de audit – perspectivă asupra riscurilor auditorilor
- Impactul raportului extins de audit asupra părților interesate
 - Studiu bibliometric privind negocierile auditor-client
 - Influența unor caracteristici ale companiilor cotate asupra presiunii fiscale

- The Influence of Accounting and Auditing Regulations on External Growth Strategies
 - Evolution of Audit Fees – Perspective on Auditors' Risks
- The Impact of an Expanded Auditor's Report on the Stakeholders
 - A Bibliometric Study upon Auditor-Client Negotiation Aspects
 - Influence of Some Characteristics of Listed Companies on Fiscal Pressure

Sumar / Content

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Nr. 3(167)/2022

- Mariana BULUCEA, Ovidiu Constantin BUNGET, Alin-Constantin DUMITRESCU, Valentin BURCĂ, Oana BOGDAN**
- *Implications of Auditors' Rotation in Financial Audit Reporting* 457
- George-Marian AEVOAE**
- *The Influence of Accounting and Auditing Regulations on Decisions Regarding External Growth Strategies in Romanian Industry*..... 471
- Andreea Claudia CRUCEAN, Camelia-Daniela HAȚEGAN**
- *Evolution of Audit Fees – Perspective on Auditors' Risks*..... 484
- Sagar ADHAU, Arumugam SEETHARAMAN, Koilakuntla MADDULETY, Priti BAKHSHI**
- *The Impact of an Expanded Auditor's Report on the Stakeholders* 499
- Ovidiu Constantin BUNGET, Anca Diana SUMĂNARU**
- *A Bibliometric Study upon Auditor-Client Negotiation Aspects* 511
- Carmen VÂLCU**
- *Influence of Some Characteristics of Listed Companies on Fiscal Pressure* 525
- Denisa ABRUDAN, Mihaela Gabriela HRISCU**
- *Navigating the Digital World – The Impact on the New World of Work, A Multigen Perspective* 541

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Implications of Auditors' Rotation in Financial Audit Reporting

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Abstract

The purpose of this paper is to study the implications of auditors' rotation on financial audit reporting in the case of companies listed on the Bucharest Stock Exchange in the period 2011-2021. It was analyzed the relationship between the rotation of audit firms and the audit opinion, the impact on the audit cost, as well as the effects on the key audit matters.

The regulatory framework has been modified at the same time for the key audit matters and the rotation of auditors, and it is therefore interesting to examine how they associate with each other. Using the descriptive statistical analysis method mainly oriented towards graphical analysis, it is illustrated that the rotation of audit firms leads to improved reporting in audit by reducing the number of modified opinions, respectively increasing the number of KAM communicated in the audit report. Finally, the change of auditor does not lead to substantial changes in the audit fees, which is why such a decision is not determined by considerations of reduction of audit costs, but rather by other reasons.

Key Words: *audit rotation; audit opinion; audit fees; key audit matters; financial audit reporting;*

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Introduction

The need for auditing has been explained by various theories, most of which have been associated, at some level, with the risk of misinformation and asymmetrical information faced by investors due to the different issues pursued by the management of the audited entities. The studies concluded that the need for auditors derives from the need to reduce the risk of misinformation of the third parties interested in the financial statements. (Smieliauskas et al. 2020; Salehi, 2011)

Since the audit report is the result of the financial audit process, and therefore represents the channel of communication between auditors and users of the company's financial statements (Ji, 2019), the audit profession has gone through changes to reduce information asymmetry. These reforms included, among other things, the introduction of ISA 701 and the mandatory rotation of auditors.

The main purpose of this article is to explore the implications of auditors' rotation on the financial audit report. We have conducted an analysis of the relationship between the rotation of audit firms and the audit opinion, the impact on the audit cost, as well as the effects on the reporting of key audit matters. The regulatory framework has been changed at the same time for the reporting of KAM and the rotation of auditors, and it is therefore interesting to examine how they associate with each other. The rotation of auditors and the reporting of key audit matters have been the subject of prior investigations, but there are still many that have not been covered.

1. Literature review

The European audit reform aimed to restore investor confidence in the financial statements of European companies, and in particular public interest entities, by strengthening the governance, competence of the auditor and the quality of the audit, as well as by increasing the independence of the main stakeholders involved in the audit process. The (mandatory) rotation of audit firms have been, and still is, intensely debated, but there is no clear consensus among academia whether changing auditors leads to improved quality of financial audit reporting.

Most studies focused on the correlation between key audit matters and the fees charged by auditors, the impact that their communication has on investors' perceptions, as well

as the factors influencing the reporting of key audit matters, respectively the number of KAM communicated. (Calixto de Sousa, 2018; Köhler et al., 2020; Lennox et al., 2021; Christensen, Glover, & Wolfe, 2014; Pinto & Morais, 2019; Pinto et al., 2020; Sierra-García et al., 2019; Velte & Issa, 2019; Chersan, 2018; Porumbăcean et al., 2021; Bunget et al. 2021; Grosu et al. 2020; Porumbăcean et al., 2022).

Regarding the effects of auditor rotation on audit opinion, there are several studies which reveal mixed results. Firth et al. (2012a) found that entities for which the rotation of auditors has been manifested often have a higher incidence of modified audit opinions compared to entities for which the financial auditor has not been changed. There are also studies that have documented a positive association between auditor rotation and audit quality (Kim et al., 2015), but without being able to establish a relationship between the rotation of audit firms and the audit opinion (Bulucea, 2020). Another part of the literature looked at the correlation between auditor rotation and audit fees. For example, Gutierrez et al. (2018), Liao et al. (2019), Reid et al. (2019) and Burke et al. (2021) note that the new disclosure requirements for key audit matters did not affect audit fees. However, Li et al. (2019) sees a significant increase in audit fees after the new reporting requirement for key audit matters was implemented in New Zealand. Pinto and Morais (2019) document a positive association between audit fees and the KAM number.

Key audit matters are a relatively new research topic in the field of accounting and auditing and, therefore, studies on the correlation between KAM and the rotation of audit firms have proven to be very limited. It is noted that the number of KAM releases is associated with the complexity of the firm, the type of industry, the profitability, the risk of litigation of auditors, the quality of corporate governance, as well as the rotation of auditors (Pinto & Morais, 2019; Wuttichindanon & Issarawornrawanich, 2020; Verho, 2021; Porumbăcean & Tiron, 2021). There are authors who say that different key audit matters are more likely to be communicated when auditors rotate (Hsiao-Lun Lin & Ai-RuYen, 2022). However, auditors may continue to report the same KAM when determining that there is no change in areas that require significant attention. Rousseau and Zehms (2020) illustrate the effect of auditor and audit firm style regarding the KAM reporting. They found that partners make unique judgments to report key audit matters, which contradicts the concern that

standardization at the audit firm level leads to the creation of certain patterns for reporting the key audit matters. However, the findings of Rousseau and Zehms (2020) also suggest that KAM reporting may not have comparability between partners, both at the level of the same audit firm and at the level of different audit firms. Thus, the rotation of auditors can affect both the number of key issues communicated and their category. Verho (2021) studied the effects of the rotation of audit firms on the number of KAM at EU level and found that their number increases when the audit firm rotates.

Also, the study conducted by Sierra-García et al. (2019) shows that auditor rotation is one of the independent variables of communicating key audit matters. However, the study found that there is no significant association between auditor rotation and the KAM number.

2. Research method

The purpose of the study is to analyze the implications of auditor rotation at the level of audit reporting, both in terms of changes in the auditor's opinion, in audit costs and key audit matters. Therefore, through this study we investigate the correlation between:

- the auditor's rotation and the auditor's opinion;
- auditor rotation and audit cost;

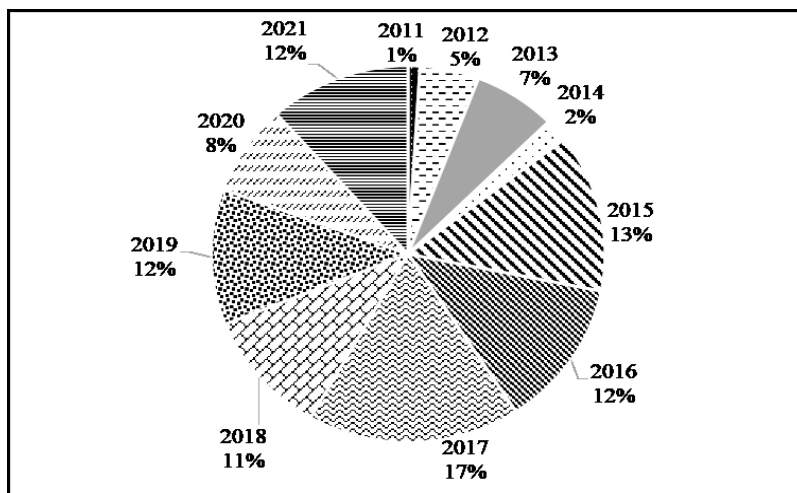
- auditor rotation and key audit matters reported in the audit report.

Each of these liaison relationships is analyzed by methods of graphical descriptive analysis, plus a series of F-tests, assessing the extent to which the auditor's rotation factor generates significant differences in the auditor's opinion and in the audit cost.

Data collection and sample analysis

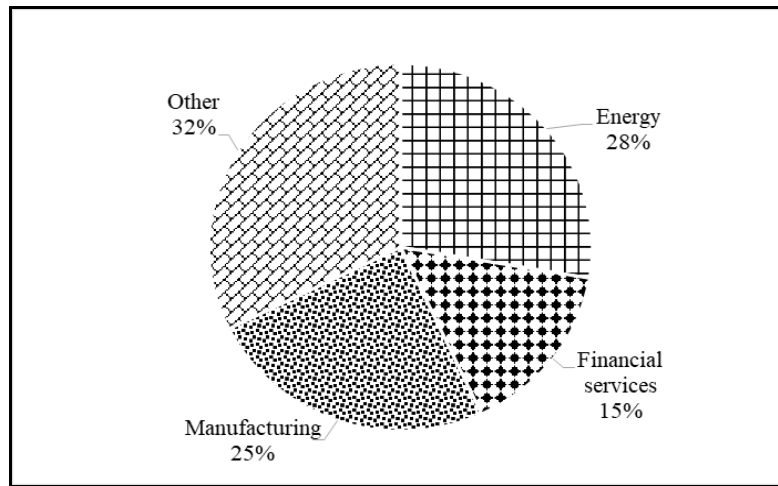
The analysis is based on a set of data extracted from the Audit Analytics database, for the period 2011-2021. The extracted sample considers the limitation of the analysis to a set of Romanian economic entities listed on the regulated market of the Bucharest Stock Exchange. The selected entities are those about which there is data available in Audit Analytics that reveals the decision to change the financial auditor, summing up a total of 103 observations. These annual observations refer to the change of financial auditor decided by 66 Romanian economic entities listed on the stock exchange. This information shall be disclosed either in the annual report made available by each economic entity or through the audit report issued and made available by the auditor. In the case of this sample, no change of auditor resulted from reasons related to complaints about the independence of the old auditor or for other reasons directly attributable to the audited entities.

Figure no. 1. Distribution of auditors' rotation



Source: Authors' projection

Figure no. 2. Distribution of the sample by sectors



Source: Authors' projection

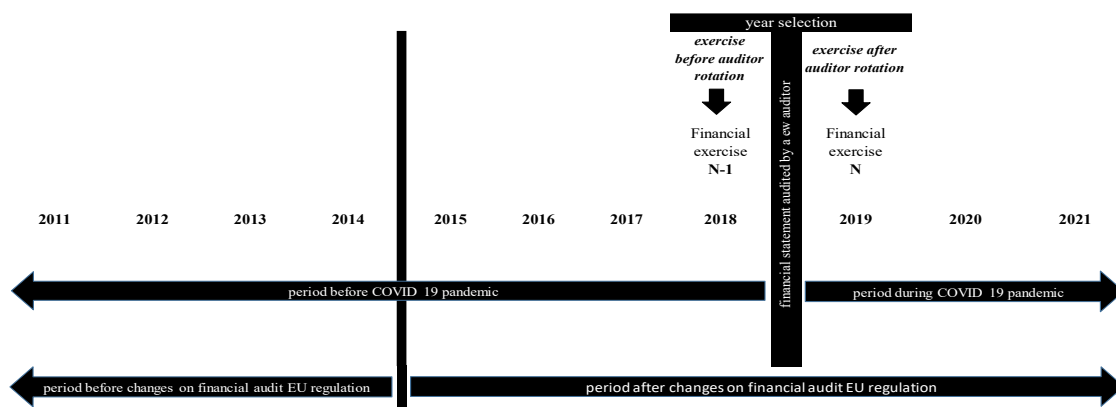
Out of a total of 66 cases of change of auditor, only 7 of them reported problems regarding the going concern, which shows that even in severe conditions, such as the COVID 19 pandemic, no negative effects were determined at the level of the economic entities listed on the Bucharest Stock Exchange.

According to the **Figure no. 1**, most of the changes in auditors occurred in the financial years related to the period 2015-2018, the period before the COVID 19 pandemic. Most of the entities in the sample analyzed are part of the energy sector (28%), followed by the

manufacturing industry (25%), respectively financial services (15%), as one can see in **Figure no. 2**.

Starting from the period 2011-2021 considered in the selection of data from the Audit Analytics database, only the data related to the financial years whose financial statements were audited by a new auditor were retained for analysis. To ensure a comparative analysis, designed to provide indications of the implications of the auditor's rotation on audit reporting, data relating to the preceding financial year of each financial year whose financial statements were audited by a new auditor were also retained. The procedure is described in **Figure no. 3**.

Figure no. 3. Selection of the year for the sample structure



Source: Authors' calculations and projections

In order to better understand the effect of the COVID 19 pandemic on financial audit reporting in the context of the auditor change, we proceed to the classification of the selected years into clusters of periods, according to **Figure no. 3**. At the same time, we would like to examine whether there is a voluntary practice regarding the rotation of auditors, separating the period analyzed according to the date of adoption of the European directive that made changes to the European legislative framework on statutory audit. Data analysis consists of descriptive statistical analysis methods, mainly oriented towards the graphical analysis of the results obtained by clustering the data according to the analysis framework described in **Figure no. 3**.

3. Results and discussions

In this study we analyse the implications of the rotation of financial auditors on the audit opinion on the quality of the published financial statements, i.e., the impact on audit costs, as well as on the key audit matters disclosed by the auditor in the audit report. Consequently, the sample of firms and the financial years analysed are limited to the years in which it was decided to change the financial auditor, respectively the years preceding them.

Considering the adoption of the European directive for the revision of the legal framework regarding the statutory audit, we want to analyze the extent to which the auditor's

rotation represents a practice already implemented at the level of the companies listed on the Bucharest Stock Exchange. Taking into account the fact that the deadline for the implementation of the provisions of this Directive on rotation is variable, being conditioned both by the duration of the mandates before the entry into force of Directive 56/2014, respectively by the way in which each national jurisdiction has transposed the minimum duration of a mandate in the case of statutory audit of public-interest entities, in this way, we want to assess the extent to which the analyzed companies opt for a voluntary adoption of the auditor's rotation mechanism. At the same time, we aim through this analysis to identify the extent to which the change of auditor is a practice that is based on regularity in time and formal framework, by formulating at the level of firms' corporate governance policies that directly or indirectly address requirements in this direction.

Analysis of the sample

In **Table no. 1** we present the calculations relating to the elementary descriptive statistics at the level of the sample analyzed. Given the limited availability of the data used in the study, the analysis is carried out on two levels of discussion. In the first phase we analyze the implications of the auditor's rotation on the audit opinion and audit costs, in which case we consider a sample of 63 firms. The second level of analysis is limited to the initial sample, which excludes firms for which we do not have information on key audit matters.

	Sample size	Min.	Max.	Mean	Std. Dev.
Auditor opinion	65	0	1	0.31	0.465
Going concern	65	0	1	0.11	0.312
Total KAMs per audit report	24	1	4	1.92	0.974
Big accounting firm	65	0	1	0.51	0.504
Audit Fees	63	7.54	13.87	10.12	1.659

Source: Authors' calculations projections

We note that the sample analyzed consists of audit reports that present a modified audit opinion or an unchanged audit opinion. The average of 0.31 reveals that most audit opinions are unchanged, which shows a high quality of the published financial statements. On the other hand, the average of 0.11 of the variable "going concern" reveals that only a small part of the audit reports analyzed signaled a significant risk regarding the premise of the continuity of the activity of the audited firms. Therefore,

the quality of the financial statements does not raise a concern regarding the risk of insolvency, especially in the context of the effects of the COVID pandemic. However, the quality of financial statements raises a question mark regarding the relevance of accounting policies and respectively the ability of management, on the one hand, and of regulatory and professional bodies, to adjust in a timely manner the financial reporting framework, and especially to provide support to firms, through practical

guides, recommendations or clarifications on controversial issues raised in the sphere of the private environment.

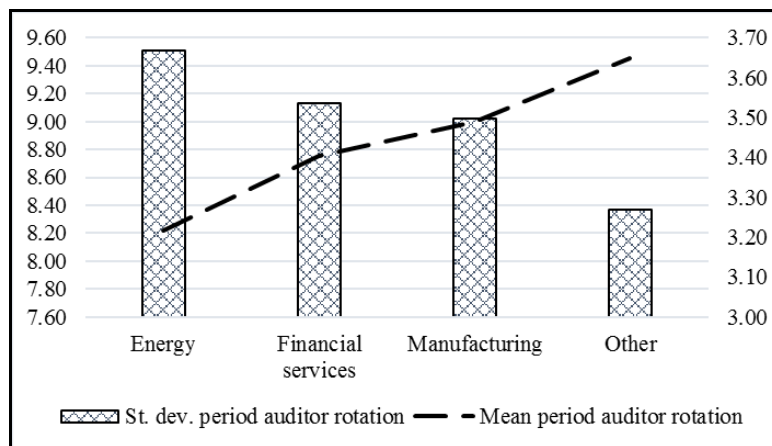
It should be noted that the average of 0.51 reveals that there is a relative balance at the level of the analyzed sample, from the perspective of the structure of the financial audit market in Romania (national audit firms, respectively international audit firms).

Analysis of auditors' rotation

In *Figure no. 4* we represent the average of the rotation period of the auditors in the case of the

sample of analyzed companies. This graph shows relatively similar averages across different areas of activity, ranging from 8.4 to 9.6 years. However, it should be noted that the rotation period of the auditors appears to be longer in the case of firms operating in the energy sector, followed by the rotation period of the auditors in the case of firms operating in the financial sector and the rotation period of auditors operating in the manufacturing area. At the same time, we see a higher level of homogeneity regarding the rotation period of auditors in the case of firms operating in the energy sector.

Figure no. 4. Differences regarding the rotation period of auditors



Source: Authors' calculations and projections

All this information indicates that, for sectors of activity characterized by more complex business models, there is a tendency to postpone the change of auditors. As Kend & Nguyen (2020) or Rahaman & Chand (2021) remarked, such a situation can be attributed to the increased level of specialization of auditors required in the case of such a sector of activity, which is why even the number of auditors holding this specialization is more limited. This is also supported by Pinto & Morais (2019), who argued that some industries may be more difficult to audit than others, noting that due to the complexity of the business segment and the industry in which the client operates, auditors could issue more key audit issues than for other types of companies, idea also highlighted by Kend & Nguyen (2020) or Porumbacean & Tiron (2021).

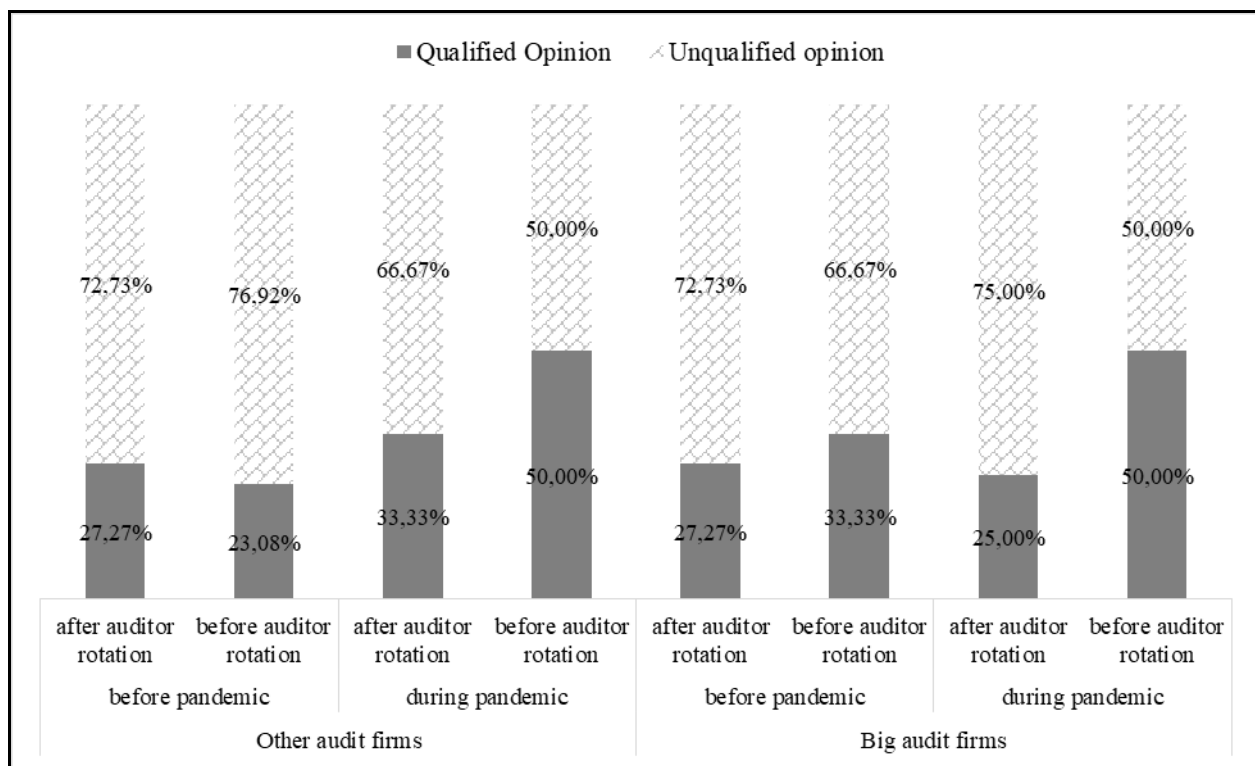
Also, the complexity of economic operations requires significant resources in the planning of audit activities,

including advanced skills to digitize audit processes (Bunget et al., 2021).

Implications of auditors' rotation on the audit opinion

In *Figure no. 5* we represent the implications of the change of auditors considering also the superimposed effect of the recent COVID 19 pandemic on the audit opinion. We note that differences generated by the auditor's rotation on the audit opinion are more visible during the pandemic crisis period. Thus, the change of auditor in the pandemic led to a decrease in the number of modified audit opinions by 25% in the case of big audit firms, respectively by 16.6% in the case of the others.

Figure no. 5. Impact of auditors' rotation on audit opinion



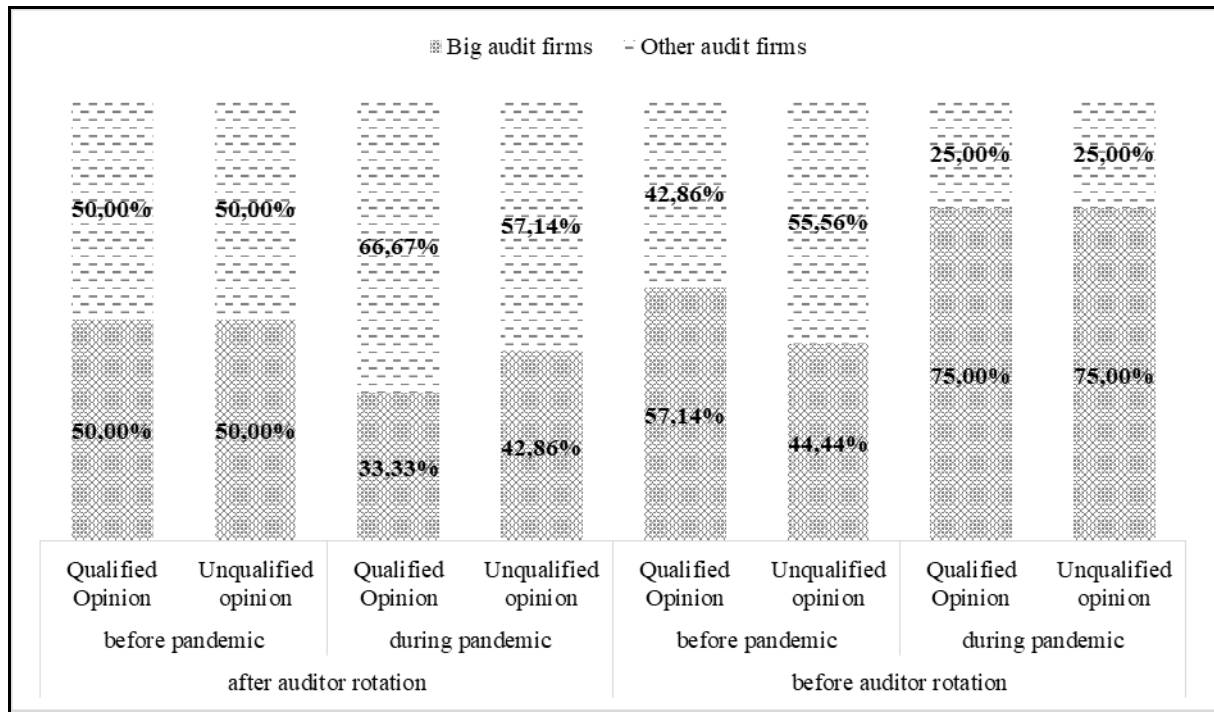
Source: Authors' calculations and projections

These differences may be justified based on better communication between the auditor and the client (Bunget et al., 2019).

As Rousseau and Zehms (2020) pointed out, each auditor has a personal style in the way of working, so both risk analysis and planning audit missions differ from one auditor to another. On the other hand, the analyzed data highlight the fact that the number of modified opinions has increased with the occurrence of the COVID 19 crisis. This can be justified against the background of a higher degree of economic uncertainty during the pandemic period, an aspect also demonstrated by Crucean & Hațegan (2021), who studied the effects of the COVID 19 pandemic on the companies listed on the BSE in the financial year 2019. Higher uncertainty leads to a lower level of accuracy of accounting estimates, which increases audit risk (Bunget et al., 2021). As the increase in economic uncertainty stemming from the restrictions imposed during the COVID 19 pandemic is causing systemic effects, it is expected that additional tests and audit procedures will identify less reliable accounting information.

In **Figure no. 6** we represent the frequency of opinion types (modified, respectively unmodified) expressed in the audit report in the case of selected firms. In this graph, we note notable differences in the audit opinion expressed by audit firms in the financial years affected by the COVID 19 pandemic, in the context of the auditor's change. The big audit firms issue modified audit opinions in a significantly lower proportion (33.33%), compared to other audit firms (66.67%). The experience and expertise of the big audit firms could be a cause of this situation, given that during the pandemic they had significantly greater resources than other audit firms in implementing the digitalization of audit processes, which has affected to some extent including the ability of auditors to plan missions and quantify audit risk, with implications for audit opinion. As mentioned in other articles "the big players in the financial audit market continuously invest in digitalization and emerging technologies, such as Blockchain, Big Data, Data Analytics, Cloud Accounting or RPA, which take over the redundant tasks within the audit activity and contribute to the increase of the yield, labor productivity and quality of the services offered" (Farcane & Deliu, 2020; Tiron-Tudor et al., 2021).

Figure no. 6. The impact of auditors' rotation on the audit opinion, depending on the audit firm



Source: Authors' calculations and projections

At the same time, the specialization of big audit firms, in the context of the COVID 19 pandemic, has provided a significant advantage in understanding economic operations and assessing the quality of audited financial statements, even by carrying out remote audit missions. These findings are also supported by Porumbăcean & Tiron (2022) who states that the audit procedures carried out by big audit companies are of a higher quality due to their investment in financial and human resources, access to state-of-the-art technology that gives auditors the opportunity to invest in the audit procedures performed.

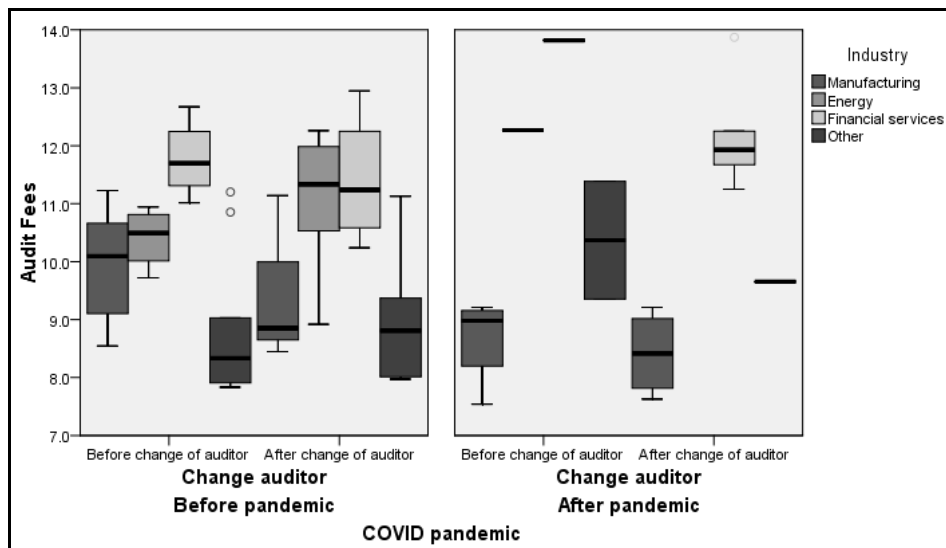
However, it should be noted that the results suggest a preference of economic entities to change auditors, moving from audit services provided by big audit firms to audit services provided by other audit firms.

Implications of auditors' rotation on the audit fee

By Figure no. 7 we want to outline the differences in audit costs, both in terms of the implications generated by the change of auditor and the superimposed effect of the

current COVID 19 pandemic. From the graph we note that only in the case of the analyzed companies, operating in the manufacturing sector, there is a relative decrease in the audit cost during the COVID 19 pandemic, compared to the previous period. Thus, the impact of the pandemic on the audit market is observed, through a decrease in audit fees, "most likely due to the intensification of activities to capitalize on the competitive advantage" (Bunget et al., 2021). At the same time, we note that notable differences generated by the change of auditor are found only in the case of entities operating in the energy sector, given that the high level of complexity of the business model requires a good knowledge of the operations and processes of the audited entity, and the audit firm needs a high level of expertise in terms of sectoral configuration, the legal framework and implications for financial reporting. This is also supported by Bunget et al. (2021), which argue that the fees charged in this industry must justify the effort made by the auditor to ensure the quality of the information presented in the financial statements, being correlated with the audit risk associated with the audited entity (Robu, 2014).

Figure no. 7. Impact of auditors' rotation on the audit



Source: Authors' calculations and projections

Implications of auditors' rotation on audit reporting

In this section we have analyzed the average number of key audit matters presented in the audit report. *Figure no. 8* shows insignificant differences generated by the current context of the COVID 19 pandemic. However, we note that in the period not affected by the COVID 19 pandemic restrictions, the number of key audit matters is significantly influenced by the change of auditor. Thus, with the change of auditor, an average number of 2.22 key audit issues increases compared to the average of 1.86 audit issues reported in the audit report for the year audited by the old audit firm. This result may indicate, for example, that the rotation of the audit firm increases the audit risk that the auditor associates with the audited entity. The increase in the number of key audit matters also suggests that the new auditor is more skeptical, which may lead to more analytical reporting.

According to the structured analysis of the literature conducted by Porumbăcean & Tiron (2021), the number of key audit matters is influenced by a number of measurable factors (type of auditor / audit partner, cultural factors, accounting estimates and their level of uncertainty, existence an audit committee within the company, the structure of the audit market, the audit fee, the level of regulation and supervision of the entity, the risk of the

company, the client industry, the accuracy of a more standard based accounting standard, the type of audit company, the audit opinion , the client's level of risk) and immeasurable (the uncertainty and level of understanding of the ISA 701 standard, the complexity and subjectivity involved in the accounting treatment, the auditor's litigation risk).

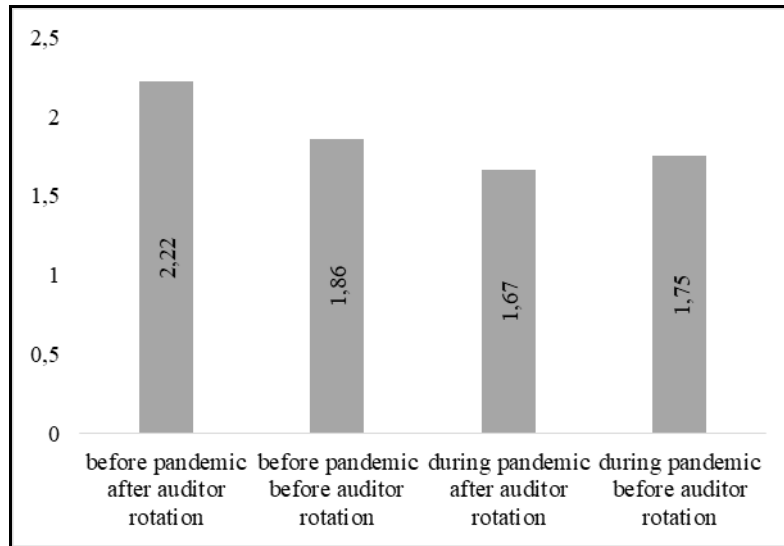
As can be seen from *Figure no. 1*, most of the auditor's changes were made for the financial years 2015-2018. This should be considered in the context of the adoption of the new standard on revenue recognition, IFRS 15, which as of January 1, 2018 has become mandatory for all reporting companies. based on international financial reporting standards. Thus, in the first years of application of the standard, a certain risk of uncertainty is expected in terms of its level of understanding at the level of accounting and auditing practitioners, an aspect also supported by Lau (2020), which admits that " measurement uncertainty is the major determinant of auditors reporting key audit issues related to accounting estimates and impairment of assets".

The above mentions are directly correlated with the complexity of the audited company, so that "more precise accounting standards lead to the communication of a larger number of KAMs" (Pinto and Morais, 2019).

On the other hand, the data analyzed show that the number of key audit matters reported in the audit report decreased in the pandemic compared to the period before

the pandemic. It can also be seen that with the change of auditor, they continued to decline during the COVID 19 crisis.

Figure no. 8. The impact of auditors' rotation on key audit matters



Source: Authors' calculations and projections

At the level of the analyzed sample, it should be noted that the audit report contains a relatively small number of key audit issues, given that only 8 audit reports record 3 or 4 key audit issues, out of a total of 23 such reports. included in the analysis of key audit aspects.

In **Table no. 2** presents the list of key audit matters communicated in the audit reports for which we have information on the auditor's opinion, audit cost and key audit matters. Overall, the data show a substantial change in the frequency of key audit matters in the audit reports as the auditor changes.

Table no. 2. TOP 10 key audit matters

Panel A- before auditor rotation			Panel B- after auditor rotation		
KAM topic	Occurrence	%	KAM topic	Occurrence	%
Revenue and other income	4	36.4	Allowance for credit losses	3	27.3
Property, plant, and equipment	3	27.3	Securities and financial instruments valuation	3	27.3
Policy changes	2	18.2	Revenue and other income	3	27.3
Allowance for credit losses	1	9.1	Business combinations	2	18.2
Business combinations	1	9.1	Contingent liabilities	2	18.2
Compliance with regulations	1	9.1	Depreciation and amortization	2	18.2
Consolidation	1	9.1	Property, plant, and equipment	2	18.2
Debt covenants	1	9.1	Asset retirement and environmental obligations	1	9.1
Deferred income taxes	1	9.1	Consolidation	1	9.1
Goodwill and intangible assets	1	9.1	Debt, quasi-debt, warrants & equity (BCF) security	1	9.1
Total reports		11	Total reports		12

Source: Authors' calculations and projections

On the one hand, audit reports for financial years prior to the change of auditor include the most common KAM (revenue recognition (36.4%), recognition and classification of fixed assets (27.3%) or changes in the level of accounting policies (18.2%). This result is also supported by De Vasconcellos et al. (2019), which considers that "the main key matters presented refer to the assessment of the recovery value of fixed assets, income, provisions and contingent liabilities, direct or indirect investments in related parties and the realization of deferred taxes, respectively tax recovery". Additionally, "the key audit matters presented are related to the impairment of goodwill and intangible assets, as well as the valuation of assets" (Kend and Nguyen, 2020). The opinion expressed by the two authors is directly correlated with the company's activity and the risk of significant misstatement, depending on the most vulnerable and uncertain areas audited, so that "it was assumed that the risks related to revenue recognition will generally be considered significant and, through therefore, they will be identified and communicated by the auditors as KAM" (Warzocha, 2018).

On the other hand, the audit reports for the financial years following the change in the auditor record substantial changes in the key audit matters reported by the auditors. Thus, the key audit matters address rather the issue of accounting estimates (27.3%), such as the assessment of receivables adjustments (27.3%), the valuation of financial instruments (27.3%), revenue recognition (27.3%) or the presentation of contingent liabilities (18.2%). This change in the ranking of key audit matters should also be considered in the context of the adoption of the new financial reporting standard IFRS 15. Given that most of the issues reported after the change of auditor are at the level of two credit institutions (Banca Transilvania SA and Patria Bank SA), respectively at the level of the main companies operating in the field of oil & gas extraction and electricity, the top of the most common key audit matters is not at all surprising.

It should be noted that the presentation of the issues considered relevant by the auditor regarding the top 3 KAM in the case of the two analysis panels is not significantly influenced by the restrictions introduced against the background of the current COVID 19 pandemic.

Table no. 3. Key audit matters presented in the audit report for the financial year audited by the new auditor

KAM Topic	before audit rotation	after audit rotation
Allowance for credit losses	1	2
Asset retirement and environmental obligations	1	
Business combinations	2	
Consolidation	1	
Contingent liabilities (Including litigation & restructuring)	2	
Debt, quasi-debt, warrants & equity (BCF) security	1	
Deferred income taxes		1
Depreciation and amortization	2	
Error corrections	1	
Going concern		1
Investment valuation - Securities and financial instruments	2	1
Long-lived assets	1	
Property, plant, and equipment	2	
Revenue and other income	3	
Uncertain tax positions	1	

Source: Authors' calculations and projections

However, we note from the information presented in **Table no. 3** the fact that the change of auditors during the pandemic outlined a limitation on the number of KAM that relate mainly to elements of accounting estimates used in the financial statements.

Statistical testing of differences

The final step in the analysis is to statistically test for significant differences in auditor turnover in terms of auditor

opinion and audit costs. In **Table no. 4** we present the results of the MANOVA test¹ performed for this purpose.

¹ Multivariate analysis of variance (MANOVA) is an extension of the univariate analysis of variance (ANOVA) which examines the statistical differences on one continuous dependent variable by an independent grouping variable.

Table no. 4. MANOVA testing on the implications of auditor rotation

Factor	Dependent variable	df	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power
Change auditor	Auditor opinion	1	0.609	0.440	0.016	0.609	0.119
	Audit Fees	1	0.227	0.637	0.006	0.227	0.075
Change auditor x COVID pandemic	Auditor opinion	1	0.000	1.000	0.000	0.000	0.050
	Audit Fees	1	0.011	0.917	0.000	0.011	0.051
Change auditor x Industry	Auditor opinion	3	1.580	0.210	0.111	4.741	0.382
	Audit Fees	3	0.601	0.618	0.045	1.804	0.163
Change auditor x Big4	Auditor opinion	1	0.865	0.358	0.022	0.865	0.148
	Audit Fees	1	0.010	0.922	0.000	0.010	0.051

Source: Authors' calculations and projections

The results of the MANOVA analysis show that the change of auditor does not significantly influence these elements that directly (auditor's opinion) or indirectly (audit cost) characterize the quality of the financial statements, given that the materiality threshold of 5 % is exceeded in the case of the probability of each calculated statistical F-test.

These results show that the voluntary adoption of the auditor's rotation is not homogeneous, economic entities approach this mechanism without outlining a pattern of decision-making behavior in this direction. It remains to be seen how this corporate governance mechanism will be understood by economic entities with the introduction of the obligation imposed by the new European Directive.

At the same time, we must note that the change of auditors at the level of the Romanian entities listed on the Bucharest Stock Exchange is not provided by internal policies, reason for which there is no defined regularity of the application of this mechanism.

Finally, we note that based on the sample analyzed, the change of auditor does not lead to substantial changes in the cost of audit, which is why such a decision is not determined by reasons to reduce audit costs, but rather for other reasons.

Conclusions

The study uses a more recent approach to the literature on the implications of auditor rotation for audit reporting, both in terms of changes in auditor opinion, audit costs,

and key audit matters. Thus, the data of the companies listed on the Bucharest Stock Exchange from 2011 to 2021 regarding the financial years whose financial statements were audited by a new auditor were retained. In order to ensure a comparative analysis designed to provide indications of the implications of the auditor's rotation on audit reporting, data relating to the preceding financial year of each financial year whose financial statements were audited by a new auditor were also retained.

The results show that the auditor's rotation has several effects on audit reporting. First, there is a reduction in the number of modified opinions, an effect generated by a better communication between the client and the new auditor. Second, the data show that in a normal economic context, the number of key audit matters tends to increase with the change of auditor, while the occurrence of events such as the pandemic crisis leads to a decrease in the number of KAM due to the increasing of uncertainty. Finally, we note that based on the sample analyzed, the change of auditor does not lead to substantial changes in the cost of audit, which is why such a decision is not determined by reasons to reduce audit costs, but rather for other reasons.

As future research directions, we will consider the effect of limiting the mandates of financial auditors in each country of the European Union, as well as the evolution of the audit market because of measures aimed at reducing the concentration of big audit firms. We will also consider the evolution of aspects of rotation in an environment free of pandemic restrictions.

The change of the recent legislation provided by the Order of the President of ASPAAS no. 123 of April 28, 2022, by which a financial auditor should be included in the

composition of the Audit Committees of public interest entities, is expected to influence the rotation of auditors, but also on the quality of the audit process.

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The Influence of Accounting and Auditing Regulations on Decisions Regarding External Growth Strategies in Romanian Industry

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Abstract

Purpose – The purpose of this paper is to identify the chances that a certain type of investor will purchase a stake in an industry target company, considering the accounting practices and / or the audit opinion, to which certain financial information is added, related to size and profitability. The influence of these factors on the acquisition decision, reflected in the deal value, is also analyzed.

Methodology – For testing and validation of working hypotheses, multinomial logistic regression, generalized linear models and multiple correspondences analysis are used, considering a sample of 631 acquisitions from the Bucharest Stock Exchange (BSE).

Results – The undisclosed investors (in most cases, individuals) are interested in the size of the company, while companies consider the quality of the information provided by the target company, which applies IFRS and has the financial statements accompanied by the opinion of an auditor. Profitability is a significant factor for unlisted investors. As for the price that these investors decide to pay in the transaction, it is positively influenced by all the factors mentioned above.

Originality – The study provides an overview of the types of investors who acquire stakes on the BSE and of the factors that influence the chances that they will pay a certain price for equity stakes.

Key words: acquisitions; Pavitt's taxonomy; Bucharest Stock Exchange; investors; unqualified opinion;

JEL Classification: E22, G32, M42, M48, O16

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Introduction

The globalization of trade has created a huge market potential for business acquisitions so that companies can strengthen their competitive position, increase business growth and shareholder wealth. Thus, their use by economic entities is justified, as they have a massive potential to stabilize / increase their activity. In economic literature and practice, this potential is called synergy, despite the high number of failures in the field (Junni *et al.*, 2015; Thanos and Papadiakis, 2012).

The motivations behind mergers and acquisitions (M&As), as external growth strategies, are multiple and are based on internal factors of the companies involved, but also on factors related to the economies in which they operate. Among the most obvious, there are: survival – a strategy suitable for low-capitalization companies, which are in a defensive position or which have a declining market share (Capron, 2016), economies of scope or diversification – especially suitable for conglomerate operations and vertical M&As, which aim to expand upstream or downstream or even in a completely different field (Chen, 2020), protection – seeking a partner to counteract negative situations, such as new competitors in the market, loss of patents (Dell'Acqua *et al.*, 2018), growth – involving companies in an offensive position, which intend to increase market share or profitability (Dong and Doukas, 2021) or innovation – access to know-how that would be much more difficult to create than to acquire (Kanungo, 2021; Zhang and Yang, 2021). Acquirers can also buy equity stakes in target companies that do not allow them the control, but are based on simpler motivations, such as access to resources, technological progress (common goal with acquisitions of a controlling stake) or obtaining dividends (Osiichuk and Wnuczak, 2021; Aevoae *et al.*, 2021).

Romania is an atypical market in terms of external growth operations, characterized by mergers between small, limited liability companies, often belonging to members of the same family. Acquisitions, on the other hand, take place mostly with the involvement of companies listed on the BSE, either in the position of acquirer or acquired company.

Reopened on April 21, 1995, the Bucharest Stock Exchange recorded its first trading session on November 20 of the same year and has grown continuously since then, despite the fact that, over the years, growth did not live up to analysts' or investors' expectations. The reasons

are many, from macroeconomic instability to the lack of market transparency on capital gains and, last but not least, the treatment of minority investors (Botika, 2012). However, Romania is currently an emerging economy, as evidenced by international institutes and organizations (FTSE Russell, 2020; IMF, 2021). From the perspective of the private business system, the companies are suffocated by excessive taxation and an oversized state apparatus. Also, the banking offer is limited, the Romanian companies being determined to resort to strategies such as M&As in order to cover their financing needs or to fulfill their external growth objectives. As for the Romanian acquisitions, they are mostly minority transactions (Dicu *et al.*, 2020; Botika, 2012). In this context, the idea of this study is based, on one hand, on the types of acquirers participating in the acquisitions, considering, as influencing factors, the financial characteristics of the target company (Campagnolo and Vincenti, 2022; Rozen-Bakher, 2018), whether or not it is an audited company (which gives investors more confidence) (Jiang *et al.*, 2019; Sterin, 2020), as well as the accounting regulations (national regulations or International Financial Reporting Standards) (Akgün, 2021; Mironiuc *et al.*, 2015), information available for the year before the transaction. We consider that, both in the case of the financial market and of M&As, the quality of financial information reported by companies is determined by a set of factors, designed to help ensure its increased utility for investors (Carp *et al.*, 2022; Carp and Toma, 2018). The second part of the study is dedicated to identifying the factors that affect the acquisition decision, characterized by the deal value (Luo, 2005; Alahakoon, 2021).

Considering the recent literature on M&As, we consider the following research questions:

RQ1: *Can the existence of an audit report determine the anticipation of a certain type of investor (listed company, unlisted company, undisclosed investor)?*

RQ2: *Is the application of national accounting regulations / International Financial Reporting Standards a factor in determining the type of investor for a particular target company?*

RQ3: *Does the performance of the listed company allow you to anticipate a certain type of investor?*

RQ4: *Are the accounting and auditing regulations, but also the performance of the target companies in the industry, listed on the Bucharest Stock Exchange, factors that can significantly influence the price paid in a purchase?*

Thus, the objectives of the paper are twofold. On the one hand, the chances of a certain type of investor participating in industry acquisitions are considered, starting from the characteristics of the target companies, financial (profitability and size), but also related to audit and accounting regulations. Taking into account the main activity of the target companies, Pavitt's taxonomy categories are used to classify acquisitions, given that innovation is one of the most important motives for M&As (Kanungo, 2021; Zhang and Yang, 2021; Ma and Liu, 2017).

For our study, we have taken into account that sections A-G of NACE Rev. 2 are associated with the industry, while the H-U sections make up the services, according to data provided by the European Union. Subsequently, the same characteristics of the target companies are considered as influencing factors for the acquisition decision, more precisely for the value of the transaction, respectively the price paid by the acquiring company (the aforementioned investors).

In the study, we use a database composed of 631 industry acquisitions, where the target companies are listed on the Bucharest Stock Exchange, on the regulated market or on the AeRO market, and then they are sorted into four categories, considering Pavitt's taxonomy. The first part of the study is dedicated to the literature review and the development of working hypotheses. The second part includes the presentation of the research methodology, the population and the sample proposed for analysis, as well as the models for data analysis. The third part includes the results and discussions of the study, which is completed with a set of conclusions and observed limitations.

1. The literature review and the development of the working hypotheses

Mergers and acquisitions are based on multiple causes, but also objectives of the companies involved. Among these, there is the improvement in the wealth / capital of each investor (Beitel and Schiereck, 2001; Onalapo and Ajala, 2012; Jallow *et al.*, 2017). This goal can be achieved, on the one hand, by acquiring a share of capital to control the target company, and the increase in wealth takes place, in this case, by obtaining a

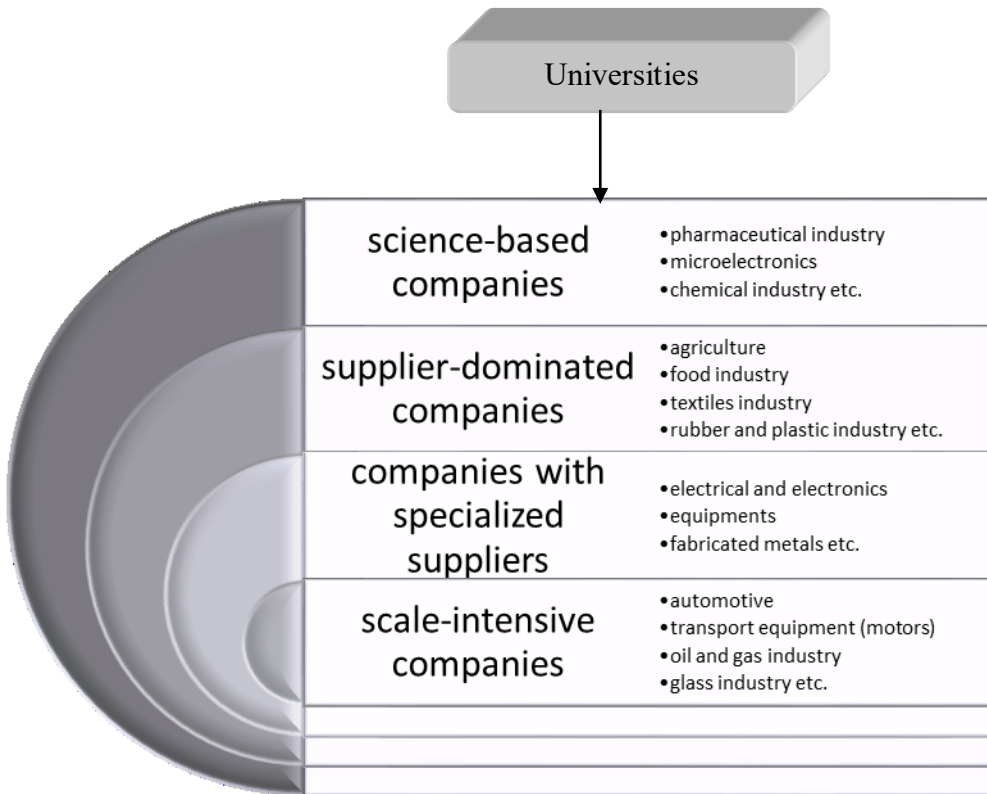
synergistic effect and, last but not least, synergy. The latter, according to the authors Seth *et al.* (2002), is one of the three fundamental motives for M&As, along with improving the management system and the hubris hypothesis. On the other hand, the acquirers can buy minority stakes, from which they expect to obtain dividends, technological progress and access to certain resources of the target company (Balitzki and Pugh, 2016; Botika, 2012).

Accounting data is, in many cases, the source of information to confirm the synergy and value creation potential. On the other hand, financial markets can transmit the same information through abnormal returns. There is an extensive literature discussing the expected return of either acquirers or target companies as a result of them participating in M&As, including its determinants (Eckbo, 2009; Kinateder *et al.*, 2017; Fich *et al.*, 2018). Yields appear to be a consequence of the efficient market hypothesis, which states that the stock price reaction to the acquisition should reflect its current value, because investors are rational and know the same information at the same time (Danbolt *et al.*, 2015).

Therefore, there is a market-based approach and a performance-based approach of the acquisitions, resulting from the analysis of the financial information (Dargenidou *et al.*, 2016). Starting from the high failure rate of the M&As, Rozen-Bakher (2017) analyzes the link between the type of M&A (horizontal, vertical and conglomerate) and their success rate, for the industrial and service sectors. The same classification of acquisitions was discussed by the authors Aevoae *et al.* (2019), which, in a study on Romanian acquisitions, discusses the factors influencing the acquired equity stakes, taking into account financial information from the pre-concentration period, both for the acquiring companies and for the target ones.

Pavitt (1984) anticipated, 18 years ago, the innovative potential of the industry, by describing the similarities and differences between sectors, in terms of sources, nature and impact of innovation. Subsequently, the taxonomy was revised (Archibugi, 2001; Bogliacino and Pianta, 2016), but, fundamentally, the four components are still valid today. These are graphically shown in *Figure no. 1*.

Figure no. 1. Pavitt's taxonomy (1984)



Source: Adapted by the author after Pavitt (1984)

From Pavitt's (1984) perspective, firms and, implicitly, industries vary from innovative to non-innovative, although there are authors who later discussed the difference between firms and industries and concluded that the taxonomy refers mainly to companies in the field, being grounded on the number of patents and research & development expenses (Castellacci, 2008; Archibugi, 2001). In addition, the fact that a company is innovative is not necessarily expanded to the whole industry, opinion also taken into account in the present study.

In science-based firms, technological accumulation comes primarily from corporate research and development laboratories, and it is dependent on technical knowledge and skills, derived from academic research (Miozzo *et al.*, 2016; Meoli *et al.*, 2013). The typical core sectors are chemistry and electronics, which open up major new product markets for a wide range of potential applications. Consequently, the main tasks of the innovation strategy

are to monitor and exploit the progress of basic research to develop technological products and to acquire complementary assets, to exploit them and to reconfigure operational divisions and business units in the light of the technological market in change. According to Chondrakis (2016), acquisitions are tools with an impact on innovation, seen as in-house technology or outsourced function. The author analyzes the way in which the technology acquirers benefit from value growth by generating unique synergies, particular to the field, especially in the situation where the two companies have similar systems. Technological innovations generate synergies that vary in speed and magnitude of impact, being considered, as appropriate, additive synergies (if built on existing technologies) or multiplicative synergies (resulting from the combination of existing resources, so as to register new brands and patents) (Harrigan *et al.*, 2016; Aevoae *et al.*, 2019).

The supplier-dominated companies are essentially traditional, based entirely on external innovation. For example, from the perspective of M&As, the imitation in agriculture can be easy because, in general, access to genetic material provides the necessary materials for the reproduction of products. Simply put, once a producer accesses a seed, it is very likely that he will be able to reproduce it without the need for technological effort (Campi *et al.*, 2019).

Firms based on specialized suppliers work in symbiosis with them, and in the world of M&As, we are dealing in this case with vertical external growth operations (upstream or downstream). Vertical M&As involve the combination of two companies with successive processes in the operating cycle, belonging to the same branch of activity. In essence, it is about acquiring / merging with a supplier (upstream) to simplify the supply process or with a downstream customer to provide the basis for easier communication and better distribution (Lasserre, 2012).

Economies of scale are important in industry, based on a simple fact: a certain amount of resources can lead to a higher quantity of finished product or a lower unit cost. Innovation comes from the internal research and development department and from engineers, but it can also come from specialized suppliers. In the case of M&As, these savings are specific and mostly associated with horizontal transactions (Ma *et al.*, 2010; Georgescu *et al.*, 2020).

Once the company that will be the subject of the acquisition is chosen, as well as the stake to be purchased, depending on the intentions of the acquiring company, the transaction price is of real interest. Some authors refer to this price as a business acquisition decision (Luo, 2005; Alahakoon, 2021). The decision representing the deal value is influenced by the characteristics of the target company (profitability and size of the company, on the one hand, but also the accounting and auditing regulations, all for the year prior the acquisition).

Based on the above considerations, we propose the following working hypotheses:

H₁ *The chances for a certain type of investor to participate in the acquisition of an equity stake in*

industry companies listed on the BSE are significantly influenced by the audit status of the latter, but also by its financial data.

H₂ *The chances for a certain type of investor to participate in the acquisition of an equity stake in industry companies listed on the BSE are significantly influenced by the accounting regulations they apply.*

H₃ *The decision to acquire an industry company listed on the BSE, or an equity stake in it, is significantly influenced by its audit status and its financial data.*

H₄ *The acquisition decision for an industry company listed on the BSE is significantly influenced by the applied accounting regulations, but also by its financial data.*

The hypotheses will be tested and validated using SPSS 26.0.

2. Research methodology

Study population and analyzed sample. The target population analyzed in this article is represented by the acquisitions that take place on the BSE and involve an acquirer (listed, unlisted or undisclosed) and an industry target company. To test and validate the proposed research hypotheses, the study analyzes the empirical data regarding 631 acquisitions, for the period 2010-2019, in which industry companies, resident in Romania and listed on the BSE were involved, as target companies.

Models proposed for analysis. The methods used are multiple correspondences analysis, logistic multinomial regression and generalized linear models (Jaba, 2002; Robu and Robu, 2016; Grosu *et al.*, 2022).

Thus, we use multinomial logistic regression (MLR) to test the chances that the predictors which characterize the target company determine the choice for a certain type of investor (hypotheses H₁ and H₂). For H₃ and H₄, we use the generalized linear models (GLM) to estimate the influence of predictors on the deal value, seen as the acquisition decision.

The variables proposed for the study are presented in **Table no. 1**.

Table no. 1. Variables proposed for the study

Symbol	Name	Representation
AQ	Acquirer	Categorical variable: 4. Listed (AQ_L) 5. Unlisted (AQ_NL) 6. Undisclosed (AQ_NI)
AS	Audit status	Categorical variable: 3. Unqualified opinion (AS_FR) 4. Unaudited company (AS_NA)
AP	Accounting practices	Categorical variable: 2. Local GAAP (AP_N) 3. IFRS (AP_IFRS)
ROE	Return on Equity	Numeric variable: $\frac{\text{Net profit}}{\text{Shareholders' equity}}$
SIZE	Size of the company	Numeric variable: $\ln(\text{Total Assets})$
DV	Deal Value	Numeric variable: $\frac{\text{Deal value}}{\text{Shareholder's equity}}$
PT	Pavitt's Taxonomy	Categorical variable: 5. Science based) (20, 21, 26, 35 – CAEN) (SB) 6. Specialized suppliers (27, 28, 30, 33 – CAEN) (SS) 7. Scale intensive (06, 17, 18, 19, 22, 23, 24, 29 – CAEN) (SI) 8. Suppliers dominated (01, 09, 10-16, 25, 31, 32, 41, 42, 43, 45, 46, 47 – CAEN) (SD)

Source: Author's projection

The distribution of the 631 acquisitions is presented in **Table no. 2**, considering the

type of industry and the categorical characteristics.

Table no. 2. Descriptive analysis of the sample of 631 acquisitions

Categories of target companies	Audit status	Number	%
Science-based companies	Audited - Unqualified opinion	132	20,92%
	Unaudited	16	2,54%
Suppliers dominated companies	Audited - Unqualified opinion	23	3,65%
	Unaudited	8	1,26%
Companies with specialized suppliers	Audited - Unqualified opinion	356	56,42%
	Unaudited	18	2,85%
Scale-intensive companies	Audited - Unqualified opinion	48	7,61%
	Unaudited	30	4,75%
Total		631	100%

Source: Author's own projection

According to the data in **Table no. 2**, most of the target companies belong to the group of companies with specialized suppliers, for which technology is important and can be sold or bought from other companies,

according to Pavitt (1984) - 56.42%. The second major category is that of science / innovation-based companies, which is true, given that the regulated market includes a large number of companies in the pharmaceutical,

chemical and other sub-domains of industry for which innovation is essential (20.92 %). The lowest percentage is found in the case of unaudited companies dominated by suppliers, in this case traditional, which are listed on the AeRO market and are looking for financing (1.26%).

To identify the chances that a certain category of investor (listed company, unlisted company, undisclosed investor) will participate in a full or partial acquisition of an industry company, the study uses logistic multinomial regression, described by Kleinbaum and Klein (2010: 18).

Considering

$$\frac{P(X)}{1 - P(X)} \quad (1)$$

– odds for individual X,

then:

$$\ln \left[\frac{P(X_j)}{1 - P(X_j)} \right] = \alpha + \sum_{i=1}^n \beta_i X_i \quad (2)$$

In the present study, we consider the influence of the characteristics of the target company on the participation of a certain type of investor, in the acquisition:

$$\ln \left[\frac{P(AQ_j)}{1 - P(AQ_j)} \right] = f(AS, AP, ROE, PT) \quad (3)$$

The proposed model 1 is found in eq. (4) and considers the influence of the audit status and of the financial information, for the year prior the acquisition, on the probability of investing of a certain type of acquirer (listed, unlisted, undisclosed):

$$\ln \left[\frac{P(AQ_j)}{1 - P(AQ_j)} \right] = \alpha + \beta_1 \cdot AS + \beta_2 \cdot ROE + \beta_3 \cdot Size \quad (4)$$

The proposed model 2 is found in eq. (5) and aims to identify the influence of the accounting regulations applied by the target company (IFRS or local accounting

regulations - OMPF no. 1802/2014 at present) and of the financial information on the probability of investing of a certain type of acquirer (listed, unlisted, undisclosed):

$$\ln \left[\frac{P(AQ_j)}{1 - P(AQ_j)} \right] = \alpha + \beta_1 \cdot AP + \beta_2 \cdot ROE + \beta_3 \cdot Size \quad (5)$$

Model 3 starts from model 1, to which the typology of the industry is added, considering Pavitt's taxonomy. In this way, we intend to identify an association of the type of investor with a certain category of companies, but also the

influence of innovation or lack thereof on the chances of a certain type of investor to participate in acquisitions at the BSE:

$$\ln \left[\frac{P(AQ_j)}{1 - P(AQ_j)} \right] = \alpha + \beta_1 \cdot AS + \beta_2 \cdot ROE + \beta_3 \cdot Size + \beta_3 \cdot PT \quad (6)$$

Business acquisitions have become an important investment decision as part of the company's growth strategy. Considering the deal value as the variable that characterizes the acquisition decision, the study

investigates the factors that influence this decision of the acquirers to fully or partially purchase the target companies listed on the BSE, considering the characteristics of the latter.

$$DV = \alpha + \beta_1 \cdot ROE + \beta_2 \cdot Size + \beta_3 \cdot AS_{FR} + \beta_3 \cdot AS_{NA} + \varepsilon \quad (7)$$

$$DV = \alpha + \beta_1 \cdot ROE + \beta_2 \cdot Size + \beta_3 \cdot AP_{IFRS} + \beta_3 \cdot AP_N + \varepsilon \quad (8)$$

$$DV = \alpha + \beta_1 \cdot ROE + \beta_2 \cdot Size + \beta_3 \cdot AS_{FR} + \beta_3 \cdot AS_{NA} + \beta_3 \cdot ROE \cdot AS_{FR} + \beta_3 \cdot ROE \cdot AS_{NA} + \varepsilon \quad (9)$$

$$DV = \alpha + \beta_1 \cdot ROE + \beta_2 \cdot Size + \beta_3 \cdot AP_{IFRS} + \beta_3 \cdot AP_N + \beta_3 \cdot ROE \cdot AP_{IFRS} + \beta_3 \cdot ROE \cdot AP_N + \varepsilon \quad (10)$$

3. Results and discussions

Table no. 3 summarizes the results regarding the influence of the determinants on the type of investor who

acquires a share of capital in the industry target companies, listed on the BSE.

Table no. 3. Likelihood ratio

Efect	-2 Log Likelihood of Reduced Model	Chi-Square	Sig.	-2 Log Likelihood of Reduced Model	Chi-Square	Sig.	-2 Log Likelihood of Reduced Model	Chi-Square	Sig.
Intercept	367.839a	.000		366.407a	.000		351.704a	.000	
ROE	381.400	13.561	.001	379.093	12.686	.002	365.345	13.641	.001
SIZE	489.724	121.885	.000	451.666	85.259	.000	440.419	88.715	.000
AS	372.902	5.063	.080				357.563	5.859	.053
AP				372.902	6.495	.039			
PT							367.839	16.135	.013
Overall explanatory power	$\chi^2 = 158.140$ sig. = .000			$\chi^2 = 159.572$ sig. = .000			$\chi^2 = 172.984$ sig. = .000		

Source: Own processing using SPSS 26.0

The overall effectiveness of the models was evaluated using Chi-square (χ^2). According to the information presented in Table no. 3, the three regression models proposed to be tested and validated are significant (for

models 1, 2 and 3, $p < 0.01$), and the Chi-square value (χ^2) increases from one model to the following, both indicating a significant relationship between the type of investor and the selected independent variables.

Table no. 4. Estimation of parameters for the hierarchical multinomial regression model

Acquirer		B			Std. Error			Exp(B)		
		M1	M2	M3	M1	M2	M3	M1	M2	M3
AQ_L	Intercept	3.751***	4.364***	4.362***	.755	1.318	.887			
	ROE	.001	.001	.001	.004	.004	.004	1.001	1.001	1.001
	SIZE	-.598***	-.586***	-.689***	.081	.105	.110	.550	.557	.502
	AS_FR	.761		.882*	.465		.478	2.139		2.416
	AP_N		-.396			.560			.673	
	SB			1.134*			.610			3.107
	SS			-.367			.655			.693
	SI			.095			.581			1.099
AQ_NL	Intercept	3.164***	5.409***	3.416***	.681	1.129	.757			
	ROE	-.008***	-.008***	-.009***	.003	.003	.003	.992	.992	.992
	SIZE	-.525***	-.626***	-.627***	.070	.092	.088	.591	.534	.534
	AS_FR	.848*		.892*	.449		.463	2.335		2.439
	AP_N		-1.253**			.494			.286	
	SB			.493			.715			1.636
	SS			.788			.574			2.198
	SI			1.428***			.509			4.172
Pseudo R ² (Cox and Snel & Nagelkerke)				Model 1: 22,3 – 35,9% Model 2: 22,5 – 36,2% Model 3: 24,3 – 39,0%						
a. Reference category: undisclosed investor.										

Source: Own processing using SPSS 26.0

Given that the analysis is built around the target company, we test the influence on the type of investor of the variables related to the audit status, the applied accounting regulations, to which we add financial information related to profitability and company size. We consider that our choice for variables is adequate and significant, given that, in **Table no. 4** we observe an increase in pseudo-R², which makes the third model best explaining the variance of the dependent variable, using the selected independent variables (pseudo-R² = 24.3% - 39.0%). According to the data in **Table no. 4**, we can draw conclusions about how changes in predicting values are associated with changes in response value, in our case the type of investor (listed company, unlisted company, undisclosed investor).

Regardless of pseudo-R², the significant coefficients represent the average variation of the response variable (type of investor) to a unit of a specific independent variable, while the other predictors of the model are considered constant. Based on the analysis of the information in **Table no. 4**, we will consider the choice for the listed acquirer, respectively the unlisted one, with reference to category 3 (undisclosed investor).

For all three models considered, the coefficients related to company size are negative and have a significant influence ($p < 0.01$), which means that, if the size increases by one unit, the chances of the investor being a listed or unlisted company are reduced by 45% and 44.7%, respectively. Therefore, undisclosed/unidentified investors are those who invest in large companies, which is true, given that most of them are individuals who purchase securities from large companies for the purpose of obtaining dividends or for speculative purposes. The return on equity has the same negative influence, but it only decreases the chances of an unlisted company participating in the acquisition, compared to an undisclosed investor, not being significant in the case of listed company buyers. Considering the categorical variables,

they have similar influences. In the case of listed acquirers, they are not significant in identifying the chances for this type of investors. On the other hand, in the case of the chances of an unlisted investor participating in the acquisitions, they are 2.335 times higher if the acquired company is audited, compared to undisclosed investors (level of significance at 10%) and 3.502 higher if the target company applies IFRS (level of significance at 5%). If we add the industry categories to the third model, considering Pavitt's taxonomy, in this case the innovative capacity of the target company, we notice that, for the *science-based* target companies, the chances for a listed acquirer increase 3.107 times, compared to undisclosed investors. In the case of unlisted acquiring companies, the chances for this category of investors increase by 4.172 times in the case of *scale-intensive* target companies.

Thus, the size of the target company is a factor with significant influence in the case of individual investors, while in the case of companies (listed and unlisted acquirers), the existence of an audit report with unqualified opinion (in the analyzed sample, there are not companies with qualified audit opinion, adverse opinion or when there is an impossibility of issuing an audit opinion), but also the application of IFRS are factors that increase the chances for such investors. In addition, the chances of a listed company being involved in the acquisition are increased by a technology-intensive target company, while the chances of the unlisted acquirer are enhanced by the existence of a scale-intensive target company, oriented towards cost reductions and increase in productivity.

To continue the study of causality between the variables proposed for analysis, **Table no. 5** presents the parameter estimates for the four hierarchical regression models, considering the acquisition decision, reflected in the deal value, as a dependent variable.

Table no. 5. The estimation of the parameters for the hierarchical regression models

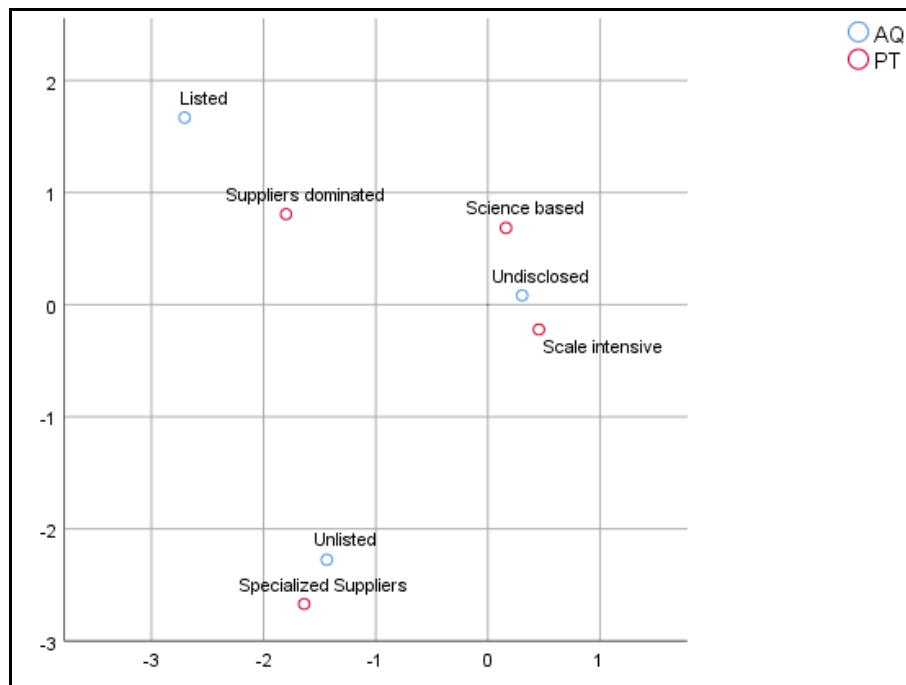
Parameters	Model 1		Model 2		Model 3		Model 4	
	B	t	B	t	B	t	B	t
Intercept	1.676	7.627***	3.473	10.868***	1.661	7.614***	3.519	11.086***
ROE	.000236	.328	.000485	.400	.026	3.178***	.024	3.280***
SIZE	.342	18.040***	.284	12.887***	.342	18.160***	.281	12.830***
AS_FR	.900	5.417***			.918	5.562***		
AP_N			-1.140	-7.335***			-1.167	-7.557***
ROE*AS_FR					-.026	-3.161***		
ROE*AP_N							-.024	-3.257***
Observations	631 acquisitions							
R-square	.507		.525		.515		.533	
F-value	214.890		230.685		165.977		178.316	
p-value	.000		.000		.000		.000	

Source: Own processing using SPSS 26.0

The four regression models, in which we used the same predictors as in the case of logistic multinomial regression, are significant ($p < 0.05$, sig. = 0.000). From the results, we notice that the size of the company is a significant and positive factor for the acquisition decision, for all models. Also, a positive and significant factor is the existence of an audit report, which allows us to state that the auditor's opinion on the information presented in the financial statements leads to a higher deal value for the industry target companies. This is

due to the trust that the auditor's opinion offers on the information presented publicly by the listed companies on the BSE, either on the regulated market or on the AeRO market. The same positive and significant influence has the application of IFRS. In other words, the companies listed on the regulated market, which apply IFRS in the preparation of the financial statements, allow a higher deal value, compared to those that apply the national accounting regulations, currently OMPF no. 1802/2014.

Figure no. 2. Correspondence between the type of industry and the type of acquirer



Source: Own processing using SPSS 26.0

Analyzing the information in **Figure no. 2**, we notice interesting associations between the type of investor and the type of industry in which the target company operates, considering Pavitt's taxonomy. The listed acquirers are interested in acquisitions of *suppliers dominated* target companies. The unlisted acquirers purchase equity stakes in target companies with *specialized suppliers*, while undisclosed investors buy shares in innovative companies (*science-based*) and those interested in *economies of scale*.

Conclusions

The Romanian capital market, since its reopening in 1995, has been an engine of economic development, although some voices believe that it has not lived up to expectations. Currently dominated by the blue-chip companies that make up the BET index, it comprises a number of 83 companies listed on the regulated market and 281 on the AeRO market, to which 15 international companies are added. Analyzing the acquisitions of listed companies, it is obvious that they mostly refer to minority stakes, often purchased by undisclosed investors (mostly

individuals). Considering the acquisitions of equity stakes in the listed industry companies, their size is a significant factor that increases the chances of undisclosed investors to participate in such transactions, to the detriment of listed or unlisted acquirers. The return on equity is also a factor in identifying a potential investor, except for listed companies that are not necessarily interested in this financial aspect. Being an audited company that applies IFRS increases the chances that the acquirer will be a company, either listed or unlisted, to the detriment of undisclosed investors. Analyzing further the spectrum of the target industry companies using Pavitt's taxonomy, we observe a tendency of the listed acquirers towards innovation, and of the unlisted ones towards obtaining economies of scale.

Regarding the determinants of the acquisition decision reflected in the deal value, we notice a positive and significant influence of the return on equity and of the size of the target company, but also of the quality of their financial reports, reflected in the unqualified audit opinion and in the application of IFRS.

In conclusion, corporate investors are oriented towards the innovation they find in listed companies and whose financial reports are accompanied by a report which includes a professional auditor's opinion, on the one hand, and on the other hand in expanding the activity that allows access to economies of scale. Individuals are interested in acquiring minority stakes, their motivation being oriented towards accessing material or financial resources.

Awareness of the factors that influence the investors' decision to acquire, considering the listed industry target companies will be useful for decision makers to develop a more competitive capital market.

The limitations of the study are related to the impossibility of identifying the type of auditor (Big Four or local company) that would allow an in-depth analysis of the impact that audit opinion has on investment decisions and the type of investor operating at the BSE. Future research directions aim to extend the analysis considering the quality of information published by the target companies and how it influences the acquisition decision. We also consider a comparison with the services sector, in the case of listed target companies on the BSE.

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Evolution of Audit Fees - Perspective on Auditors' Risks

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Abstract

Audit fees are among the essential concerns of audit firms and regulators. The paper's objective is to analyze the evolution of audit fees collected by auditors. Based on the data included in the Audit Analytics database, a sample of 1927 distinct companies was selected. 24921 observations were reported, representing audit fees from 2009 to 2020. The research showed that the audit market was concentrated around Big4 auditors, whose number increased directly to the number of issued reports. Most of the audited companies were in the field of Finance, insurance, and real estate (28%) and in the field of Production (32%), the majority being headquartered in the United Kingdom and France. The evolution of audit fees fluctuated during the analyzed period, but the trend of the average fee was decreasing. The share of fees was 58.6% for performing audit missions and 40.4% for non-audit services. The evolution of the average fee was inversely proportional to the value of the declared income and assets and the audit fees collected by the auditors. Therefore, the level of fees should be correlated with the volume of auditors' activity, the industries' complexity and the financial performance of the companies.

Key Words: audit fees; risks; assets; revenue; quality; transparency; Audit Analytics;

JEL Classification: M40, M41

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Introduction

Audit fees are among the essential concerns of audit firms and regulators because lower audit fees can result in reduced audit effort, poor audit quality, and poor financial reporting.

An audit measurement indicator, quite controversial both nationally and internationally, is the fee charged by the auditor for the services provided. DeAngelo (1981) specified that the expected effects of the allocation of audit activity on audit quality are ambiguous. On the one hand, a allocation balanced of work should lead to greater auditors' independence so that each of them has a lower share of audit fees.

The declining trend in audit fees charged by auditors (*Audit Analytics*, 2022) can also lead to an increase in audit risks, as the level of fees is often associated with the audit process's credibility and transparency, which can have a lower confidence effect from financial reporting users.

The paper's objective is to analyze the evolution of the audit fees collected by the auditors of the companies, based on the current information in the *Audit Analytics* database in the period 2009-to 2020. The sample included several 1927 separate companies, for which were reported a total of 24921 observations, representing audit fees. The analysis contains the annual evolution of the number of the reports issued by auditors, the grouping of auditors by size, and the distribution of companies by industries and geographical location. Also, the evolution of audit fees was analyzed in the two categories, audit fees and non-audit fees. The evolution of the companies' revenues and assets was presented in order to correlate the size of the fees with the financial indicators.

The research provides an analysis of the available data on the reporting of audit fees charged by auditors for performing the audit engagement from a perspective focused on the need to declare and assess the risks arising from these fees and contributes to the development of existing literature on this topic.

The paper is structured as follows: a section summarizing the relevant literature on the importance of audit fees and their influence on audit risks and quality, followed by a second section describing the research methodology. The third section presents the study results, and the paper is completed with a section reserved for the conclusions, the limits of the study and the future directions of research.

1. Literature review

In the literature was find different indicators used to measure the audit quality, such as audit fees, auditor's rotation or the auditor's size.

Fees are essential in assessing the audit quality; in some cases, the existence of higher amounts may indicate more significant efforts to improve quality, or the opposite, when high audit fees indicate a reliance on specific clients.

Audit quality assessment is a complex process because there is no direct measurement of audit quality, so audit users must use a variety of indicators, such as audit fees, to assess audit quality and confidence in financial reporting (Diem, 2016).

The theory of audit effort shows that a high level of audit fees is given by the auditor's effort to improve the quality of services provided (Xiao et al., 2020). Also, the audit risk assessed by the auditors may lead to an increase in audit fees.

Crucean and Hațegan (2019) conducted a qualitative study on the factors that influence the quality of audit services. The results of the study showed that a quality audit is influenced by several factors, starting from the professional training of the auditor, his experience and skills, the allocation of tasks equitably for the entire audit team, the time spent on the audit engagement (audit hours), but also the audit fees charged.

Eshleman and Guo (2013) considered that high fees indicate that the auditor worked harder, but at the same time, we can consider it a signal of independence. The authors studied the two indicators empirically, obtaining a positive relationship between the level of fees and the effort made by the auditor to provide quality services.

Hackenbrack et al. (2014) suggested that negotiated audit fees contain essential information for investors. If disclosed immediately after signing the letter of commitment in the following year, the information asymmetry between managers and investors would be reduced.

Cahyani and Zulvia (2019) conducted an empirical research to analyze how much the ethics and audit fees influence the quality of audit services at a public accounting office in Padang, Indonesia. The research results revealed that the auditors' ethics and the establishment of audit fees have a significant influence on the audit quality.

Garcia et al. (2020) analyzed the relationship between corporate social responsibility (CSR) and audit quality, but also the impact on audit fees of US-listed companies from 2000 to 2016. The results revealed that a higher CSR score is associated with higher audit fees, and firms involved in specific CSR initiatives pay higher audit fees due to the increased complexity of the audit.

Miah et al. (2020) investigated the association between the effort to apply IFRS due to higher levels of material adjustments and audit fees for Australian companies. The authors also examined if these associations differ between familiar auditors in the company's industries and unfamiliar auditors, based on differences in account balances prepared following IFRS instead of standards previously used by the Australian Accounting Standards Board. (AASB). The authors consider that significant adjustments require higher audit efforts. Audit fees were higher when accounting standards were more significant and complex. In addition, the results showed that the positive association between the IFRS effort and the audit fees was more pronounced when auditors with experience audited the firms compared to auditors with no experience in the audited company's business.

Haak et al. (2018) specified that a more balanced allocation of audit work between team members in audit firms reduces audit quality and increases audit fees compared to an unbalanced level of work allocation.

Barua et al. (2019) considered that a decrease in audit fees in the last year of the auditor's term could affect the audit quality. In this regard, the authors conducted a case study in which they looked at whether the reduction of audit fees is associated with a low-quality audit. The main conclusion is that a lower fee at the beginning of the term does not affect the quality of the audit as much as the reduction of fees in the last audit year.

Griffin and Lont (2008) analyzed the relationship between audit fees and auditors' resignations and found that auditors receive higher fees at least one year before the auditor change. In the case

of resignations, higher fees suggest higher levels of risk or greater auditor liability.

Geiger and Blay (2012) examined the association between audit and non-audit fees, as well as the final decision of the auditor on the type of opinion that should issue to a client in financial difficulty. The authors found a negative relationship between uncertainty about going concern and auditors' fees. However, the authors said that the level of audit fees could affect the auditor's independence.

Krishnan and Zhang (2013) examined the relationship between reduced audit fees and banks' financial report quality. The results show that banks audited by Big4 auditors have seen rising revenues and reduced audit costs. Banks audited by non-Big4 auditors already benefit from a 25% discount over other banks audited by Big4.

Rusmin et al. (2014) investigated the effect of audit quality on revenue growth and cash flow surplus for listed companies in Indonesia, Malaysia and Singapore from 2005-to 2010. Statistical analyses indicate a negative relationship between audit quality and revenue growth or management and cash flow surplus.

Fan et al. (2015) examined how lawsuits against auditors affect audit fees and customer acceptance strategies of both audit firms responsible for failed audits and other audit firms. Non-litigation audit firms increase their audit fees following the filing of an audit failure lawsuit. Audit firms involved in litigation are less likely to have new commitments after the litigation has begun.

Bronson, Ghosh, and Hogan (2017) investigated if the higher audit fees required in the US are relevant to the auditor's audit effort. The authors concluded that foreign firms pay higher fees than domestic firms in the United States, and the audit effort is directly proportional to the fees charged.

Hay (2017) qualitatively researched the scientific articles published in 2006-2016 regarding the fees, their levels, and the dependence of auditors on these fees, but also the fees charged for non-audit services. Audit fees for new assignments are lower, and non-audit services affect the

auditor's independence. In contrast, non-audit services provided by an auditor are associated with a loss of independence and lower audit quality.

Otete (2018) studied the audit market on the stock exchanges of Tanzania, Kenya and Uganda, using as primary data the audit fees from 2013 to 2017. The results show that Big4 companies have positively influenced audit fees, and audit fees have risen at an annual growth rate of 8%. At the same time, non-Big4 companies remain marginalized and forced to reduce fees to maintain a few customers.

Chen and Hasan (2018) examined how auditors view their clients' corporate culture and their impact on audit fees. Companies with a high corporate culture pay lower audit fees. These companies focus on communication and produce high-quality information, which reduces auditors' risk.

Krishnan et al. (2019) investigated the relationship between reduced audit fees and audit quality. A positive link is identified between audit quality and significant client dependency. Ganesan et al. (2019) examined the influence of audit fees and non-audit fees on the quality of audits in the case of listed companies in Malaysia. Non-audit and audit fees influence the audit quality.

Qawqzeh et al. (2021) investigated the effect of audit fees as an indicator of the quality of audit and financial reporting on a sample of 180 companies listed on the Jordanian Stock Exchange from 2009 to 2017. Board of Directors, size, independence of board and remuneration administrators have a positive and significant effect on audit fees as an indicator of audit quality.

2. Research methodology

The research is represented by a qualitative analysis, a synthesis and a descriptive analysis of the data declared by the companies included in the sample. The data were collected from the *Audit Analytics* database on April 4, 2022, the selection criterion being the search by "Audit Fees" category from the database. Have been selected all auditor types from all countries for the period 2009-2020. The result was related 1927 companies, which reported a total of 24921 observations, representing audit fees.

The *Audit Analytics* database provides detailed information on the European audit market, contains public companies listed on European stock exchanges (EEA, UK and Switzerland) and includes information about auditors, audit rotation, audit fees, and KAMs disclosed by auditors in their audit reports.

The obtained data were grouped into five distinct categories. The first category is the distribution of the audit reports during the analysis period. The second category summarizes the data on the industries of the audited companies, followed by the third category, which includes data on the geographical distribution of companies and auditors. The last two categories group the value data regarding the evolution of audit fees and financial information of audited companies.

3. Results and discussions

3.1. Distribution of auditors' reports for the analyzed period

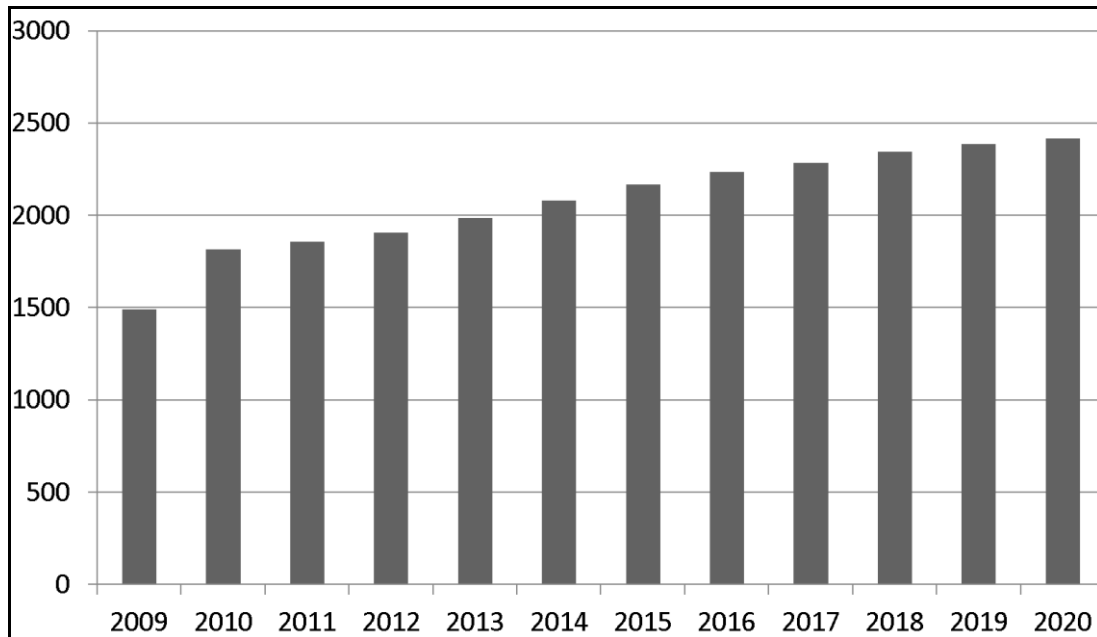
In order to represent the existing data in the *Audit Analytics* database, the reports for each year were selected for the period 2009-2020. The results are detailed in **Table no. 1**.

Year	Audit reports no.	Evolution of the audit report
2009	1487	1427
2010	1811	324
2011	1853	42
2012	1903	50
2013	1982	79
2014	2075	93
2015	2162	87
2016	2232	70
2017	2280	48
2018	2341	61
2019	2381	40
2020	2414	33
Total	24921	-

Source: Own projection, based on data analyzed

The database resulted that in the analyzed period, most of the auditors' reports were issued in 2020 (2414 reports). In the opposite part, we find the year 2009 with the fewest reports issued by the auditors (1487 reports).

Figure no. 1. Evolution of the number of auditors' reports



Source: Own projection, based on data analyzed

Figure no. 1 shows that auditors' number of audit reports had an upward trend throughout the analyzed period. The growth was relatively smooth, but there was a positive evolution of over 50% at the end of the period compared to the beginning.

Another followed indicator was the auditors' size who issued the reports, the auditors being classified into two categories known in the literature (Crucean & Hațegan, 2021): Big4 (PwC, EY, KPMG and Deloitte) and non-Big4 (auditors who are not part of the four audit firms mentioned in the first category). The results are shown in **Table no. 2**.

Table no. 2. Distribution of audit reports by auditor's size

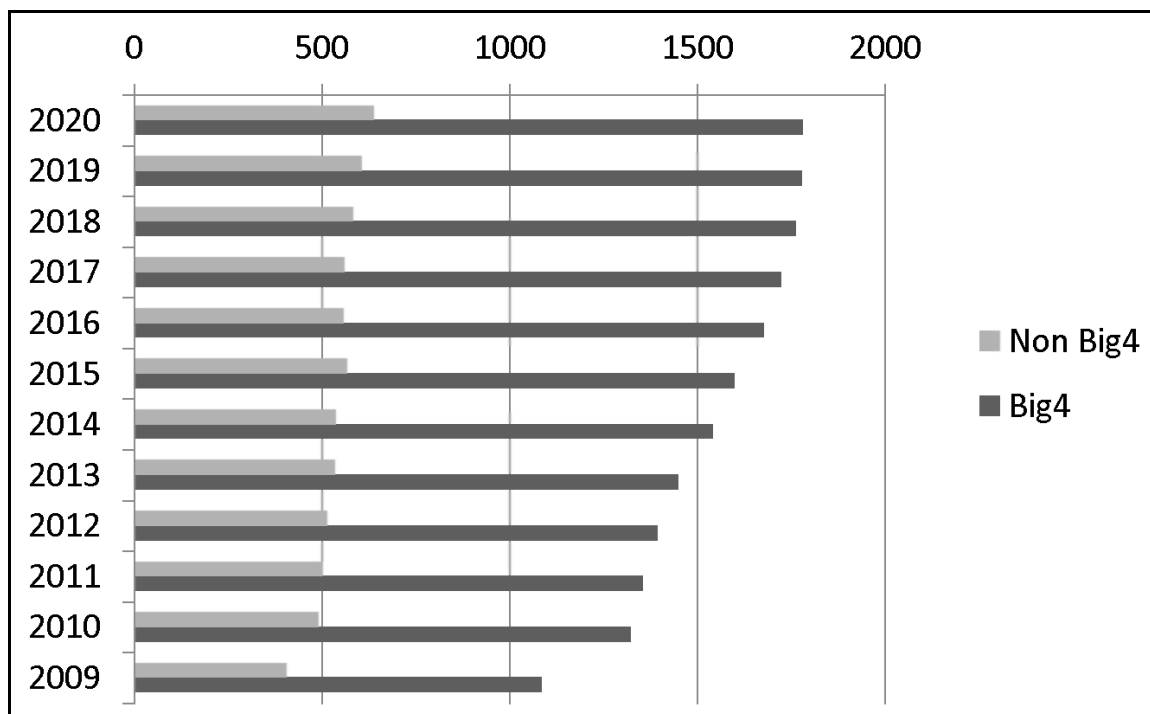
Year	Auditors	Big4 auditors	Big4 evolution	Non-Big4 auditors	Non-Big4 evolution
2009	1487	1084	1042	403	385
2010	1811	1321	237	490	87
2011	1853	1353	32	500	10
2012	1903	1392	39	511	11
2013	1982	1448	56	534	23
2014	2075	1540	92	535	1
2015	2162	1598	58	564	29
2016	2232	1675	77	557	-7
2017	2280	1721	46	559	2
2018	2341	1760	39	581	22
2019	2381	1777	17	604	23
2020	2414	1778	1	636	32
Total	24921	18447	-	6474	-

Source: Own projection, based on data analyzed

In the first year of the analysis, fewer reports were recorded in the database, but we find later an increasing evolution of the auditor's number, both within Big4 and non-Big4. Most auditors

were identified in 2020, and the fewest in 2009. The graphical representation of the auditor's size evolution in the two categories is presented in **Figure no. 2**.

Figure no. 2. Evolution of the number of auditors by size



Source: Own projection, based on data analyzed

The number of Big4 auditors increased directly to the number of audit reports issued, fluctuating between 2009 and 2020. The number of Big4 auditors increased, with lower fluctuations from one year to the next, but the evolution was positive.

An almost similar situation was found in the case of non-Big4 auditors; the number of auditors increased significantly in the second year of analysis, subsequently recording positive results in 2010-2015, a negative result of 7 non-Big4 auditors in 2016 (compared to the previous year). The evolution was again positive in the period 2017-2020, and the trend was completed with an increase in the auditor's number in 2020.

A similar result can be found in the study of the *Audit Analytics* specialists (2020), who showed that audit fees

are highly concentrated around the Big4 auditors; respectively, 94% of audit fees in the European Union are collected by Big4 auditors.

3.2. Industries

The industries were grouped according to the SIC code classification (*Standard Industrial Classification*). The SIC code is a uniform system of industrial classification intended to represent the primary industries or subclasses.

The structure of the sample by industries correlated with the number of audit reports issued is presented in **Table no. 3**.

Table no. 3. Industries

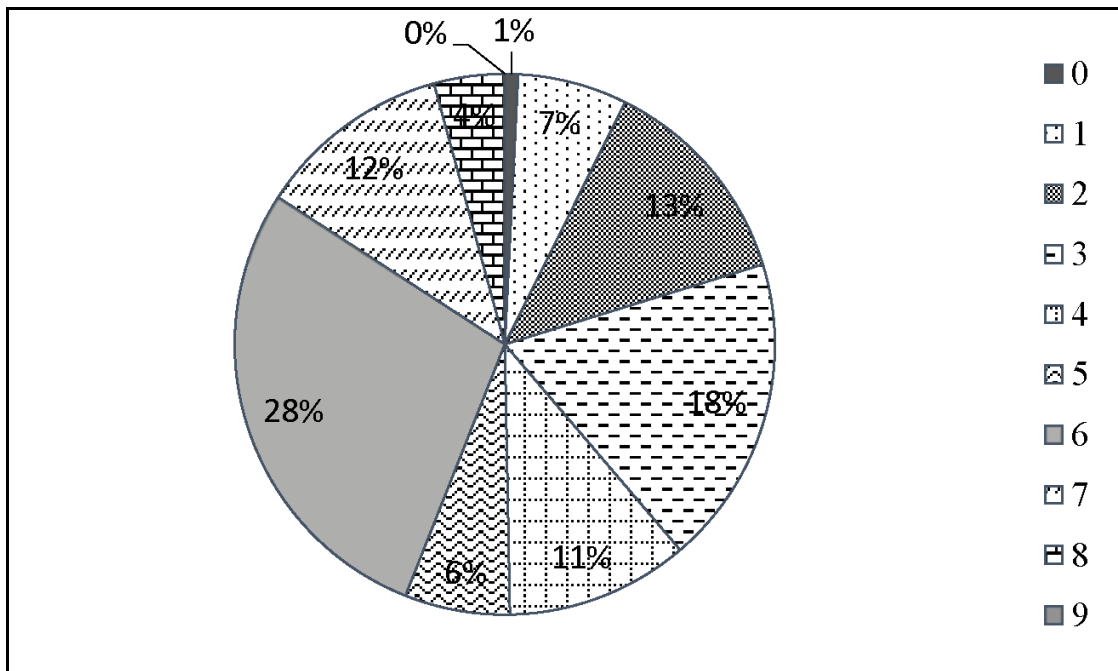
SIC code	Industry	Audit reports no.	SIC percentage
0	Agriculture, Forestry, Fishing	198	0.79
1	Mining, Construction	1635	6.56
2	Manufacturing - Groups 20-29	3207	12.87
3	Manufacturing - Groups 30-39	4619	18.53
4	Transportation, Communications, Electric, Gas, And Sanitary Services	2726	10.94
5	Wholesale Trade and Retail Trade	1570	6.30
6	Finance, Insurance, and Real Estate	7016	28.15
7	Services - Groups 70-79	2897	11.62
8	Services - Groups 80-89	1041	4.18
9	Public Administration	12	0.05
	Total	24921	100

Source: Own projection, based on data analyzed

During the analyzed period, most of the reports were issued by the auditors for companies in the field of Finance, insurance and real estate (28%), but also in the Production (32%). Also, the companies in Services industry had high percentages (transport, communications,

electricity, gas and sanitation services - 11%, and the other types of services - 16%). Wholesale and retail trade, mining, and construction accounted for over 6%, representing over 1000 audit reports. The graphical representation of the industries is presented in *Figure no. 3*.

Figure no. 3. Industries



Source: Own projection, based on data analyzed

The fewest reports were issued by the auditors for companies in Agriculture, Forestry and Fisheries, which accounted for less than 1% of the total audit reports issued.

1.3. Geographical distribution of the companies

Another significant indicator in the data analysis was the geographical distribution of the companies in the countries where they declared their headquarters, this being detailed in **Table no. 4.**

Table no. 4. Geographical distribution of the companies

No.	Country	Companies	Percentage
1	UK	6438	25.83
2	France	5888	23.63
3	Germany	1648	6.61
4	Spain	1390	5.58
5	Sweden	1182	4.74
6	Italy	921	3.70
7	Netherlands	734	2.95
8	Switzerland	724	2.91
9	Belgium	684	2.74
10	Austria	668	2.68
11	Poland	640	2.57
12	Denmark	354	1.42
13	Guernsey	351	1.41
14	Norway	335	1.34
15	Ireland	301	1.21
16	Finland	291	1.17
17	Luxembourg	279	1.12
18	Cyprus	262	1.05
19	Portugal	159	0.64
20	Jersey	154	0.62
21	Greece	146	0.59
22	Hungary	138	0.55
23	Bulgaria	115	0.46
24	Czech Republic	102	0.41
25	Slovenia	104	0.42
26	United States	96	0.39
27	Iceland	91	0.37
28	Romania	98	0.39
29	Bermuda	78	0.31
30	Croatia	70	0.28
31	Slovakia	59	0.24
32	South Africa	36	0.14
33	Lithuania	31	0.12
34	Morocco	32	0.13
35	Reunion	32	0.13
36	Estonia	29	0.12
37	Isle of Man	30	0.12
38	Japan	22	0.09
39	Israel	22	0.09
40	Mauritius	20	0.08

No.	Country	Companies	Percentage
41	Singapore	18	0.07
42	Cayman Islands	18	0.07
43	Russia	18	0.07
44	United Arab Emirates	14	0.06
45	Malta	12	0.05
46	Ukraine	12	0.05
47	Australia	12	0.05
48	Canada	12	0.05
49	Faroe Islands	12	0.05
50	Gibraltar	12	0.05
51	Hong Kong	10	0.04
52	Brazil	7	0.03
53	Latvia	7	0.03
54	China	3	0.01
	Total	24921	100

Source: Own projection, based on data analyzed

The analyzed companies had their registered offices in 54 countries in the selected sample. Table 4 shows the distribution by countries in descending order, according to the share of audited companies. In the case of 18 countries, the analyzed entities represent more than 1% of the total companies included in the sample. Most companies were based in the United Kingdom (26%), listed on the London Stock Exchange, and entities based in France (24%). On the next place, with a considerably lower percentage, are companies based in countries such as Germany (6.61%), Spain (5.58%) and Sweden (4.74%).

With a percentage of over 2% are the countries: Italy (3.70%), Netherlands (2.95%), Switzerland (2.91%), Belgium (2.74%), Austria (2.68%) and Poland (2.57%).

With a percentage of over 1% are the countries: Norway (1.34%), Ireland (1.21%), Finland (1.17%), Luxembourg (1.12%) and Cyprus (1.05%). All other countries scored below 1%.

3.4. Audit fees evolution

The evolution of total audit fees is presented in **Table no. 5**; the values are expressed in euros and calculated based on the average exchange rate from the previous year ended in the fiscal year of the declaration of fees.

The total fees declared by auditors consisted in two categories of fees, namely audit fees and non-audit fees. Audit fees are the fees charged for performing the audit engagement. Non-audit fees are fees for other insurance assignments, tax fees and other audit service fees.

Table no. 5. Total audit fees evolution (in million euros)

Year	Total audit fees	Evolution	Companies	Average audit fees
2009	68478	1112	1487	46.05
2010	69321	843	1811	38.27
2011	69654	332	1853	37.58
2012	70916	1262	1903	37.26
2013	69984	-932	1982	35.30
2014	70235	251	2075	33.84
2015	70168	-67	2162	32.46
2016	71180	1012	2232	31.89
2017	71704	523	2280	31.45
2018	71801	97	2341	30.67
2019	72029	228	2381	30.25
2020	71920	-109	2414	29.79
Total	847393	-	24921	34.01

Source: Own projection, based on data analyzed

The evolution of the total fees amounted to 847393 million euros, starting from a favorable evolution in 2009-2012, and followed a decrease of 932 million euros in 2013, which was subsequently remedied by an increase of 251 million euros in 2014. The year 2015 registered another

negative value, followed by a period of four years in which the evolution of total fees was positive. The last year of analysis saw another decline and a decrease in the total value of fees.

The structure of total fees is shown in **Table no. 6**.

Year	Audit fees	Non audit fees	Total audit fees
2009	58.38%	41.62%	100%
2010	58.48%	41.52%	100%
2011	58.52%	41.48%	100%
2012	58.62%	41.38%	100%
2013	58.57%	41.43%	100%
2014	58.55%	41.45%	100%
2015	58.53%	41.47%	100%
2016	58.65%	41.35%	100%
2017	58.66%	41.34%	100%
2018	58.70%	41.30%	100%
2019	58.76%	41.24%	100%
2020	58.71%	41.29%	100%
TOTAL	58.60%	41.40%	100%

Source: Own projection, based on data analyzed

The most significant share of the total audit fees was held by the fees charged for financial audit services (58.60%), followed by non-audit fees (41.40%).

For a detailed analysis of the evolution of audit fees in the analyzed period, the

situation in each fee category will be presented below.

The values obtained for the fees charged by the auditors only for the services required to perform the audit process are presented in **Table no. 7**.

Year	Audit fees	Evolution	Companies	Average audit related fees
2009	50484	692	1487	33.95
2010	51158	673	1811	28.24
2011	51427	269	1853	27.75
2012	52416	989	1903	27.54
2013	51701	-715	1982	26.08
2014	51870	169	2075	24.99
2015	51812	-57	2162	23.96
2016	52627	814	2232	23.57
2017	53020	393	2280	23.25
2018	53114	93	2341	22.68
2019	53316	201	2381	22.39
2020	53213	-102	2414	22.04
Total	626164	-	24921	25.13

Source: Own projection, based on data analyzed

During the analyzed period, the auditors declared 626164 million euros. There is a fluctuating evolution of the number of fees required to perform audits, which recorded three negative values in 2013, 2015 and 2020, even if the number of companies increase. The analysis shows a positive evolution of the annual amount in the other years. There is a continuous decrease in the average fee from

the beginning of the interval until it, the decrease being one third. Therefore, it can be stated that after the economic crisis of 2008-2010, auditors' fees decreased, a situation that continues from one year to the next.

The fee structure for non-audit services is presented in **Table no. 8.**

Table no. 8. Non-audit fess structure (in million euros)

Year	Audit related fees	Tax fees	Other fees	Total non- audit fees
2009	6775	3164	8053	17993
2010	6900	3188	8074	18163
2011	6936	3199	8091	18226
2012	7113	3239	8147	18500
2013	6990	3218	8073	18282
2014	7023	3225	8116	18364
2015	7016	3224	8114	18355
2016	7132	3243	8178	18553
2017	7188	3246	8248	18683
2018	7194	3245	8246	18686
2019	7208	3248	8255	18713
2020	7201	3249	8254	18706
TOTAL	84676	38688	97849	221224

Source: Own projection, based on data analyzed

Table no. 8 shows that the highest share in non-audit fees was for fees for other services (44.2%), followed by fees for

other insurance missions (38.3%) and tax fees (17%).

The evolution of non-audit fees is presented in **Table no. 9.**

Table no. 9. Non-audit fees evolution (in million euros)

Year	Non audit fees	Evolution	Companies	Average non audit fees
2009	17993	420	1487	12.10
2010	18163	169	1811	10.02
2011	18226	63	1853	9.83
2012	18500	273	1903	9.72
2013	18282	-217	1982	9.22
2014	18364	82	2075	8.85
2015	18355	-9	2162	8.48
2016	18553	197	2232	8.31
2017	18683	130	2280	8.19
2018	18686	31	2341	7.98
2019	18713	26	2381	7.86
2020	18706	-6	2414	7.75
Total	221224	-	24921	8.88

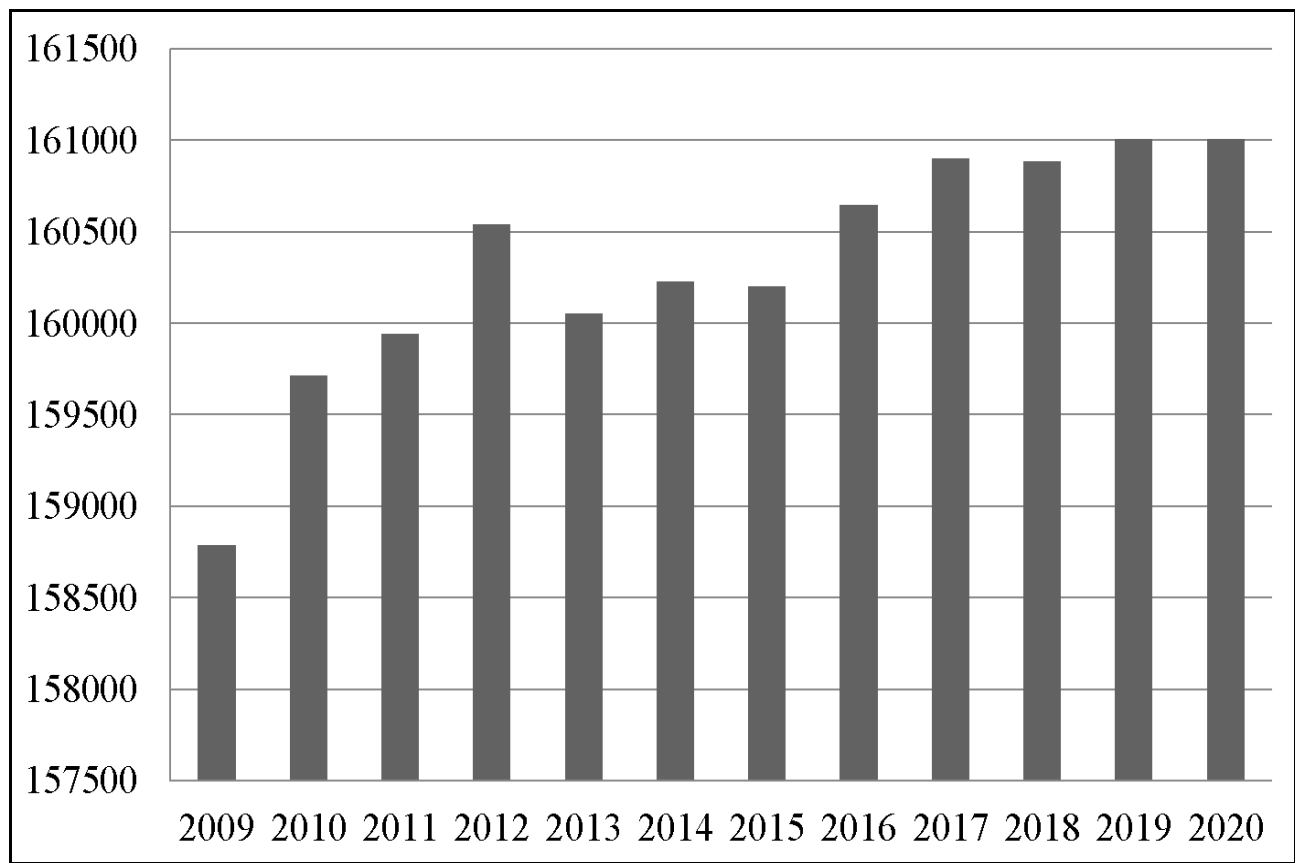
Source: Own projection, based on data analyzed

The auditors stated 221224 million euros for the non-audit services provided. The total amount of these fees increased in the first years of analysis, respectively, in the period 2009-2012 and 2016-2019. There were also three periods in which the total value of non-audit fees decreased (2013, 2015 and 2020), and at the end of the period, there was a decrease of 6 million euros.

3.5. Financial indicators

In order to analyze the financial situation of the companies, were taken into account the annual revenues and assets. Values are expressed in euro calculated based on the average exchange rate of the previous year ended in the fiscal year of the declaration of fees. The amounts of declared annual revenues and the number of companies that reported these amounts are shown in **Figure no. 4**. Companies that did not report revenue data were excluded from the sample.

Figure no. 4. Revenues evolution in million euros



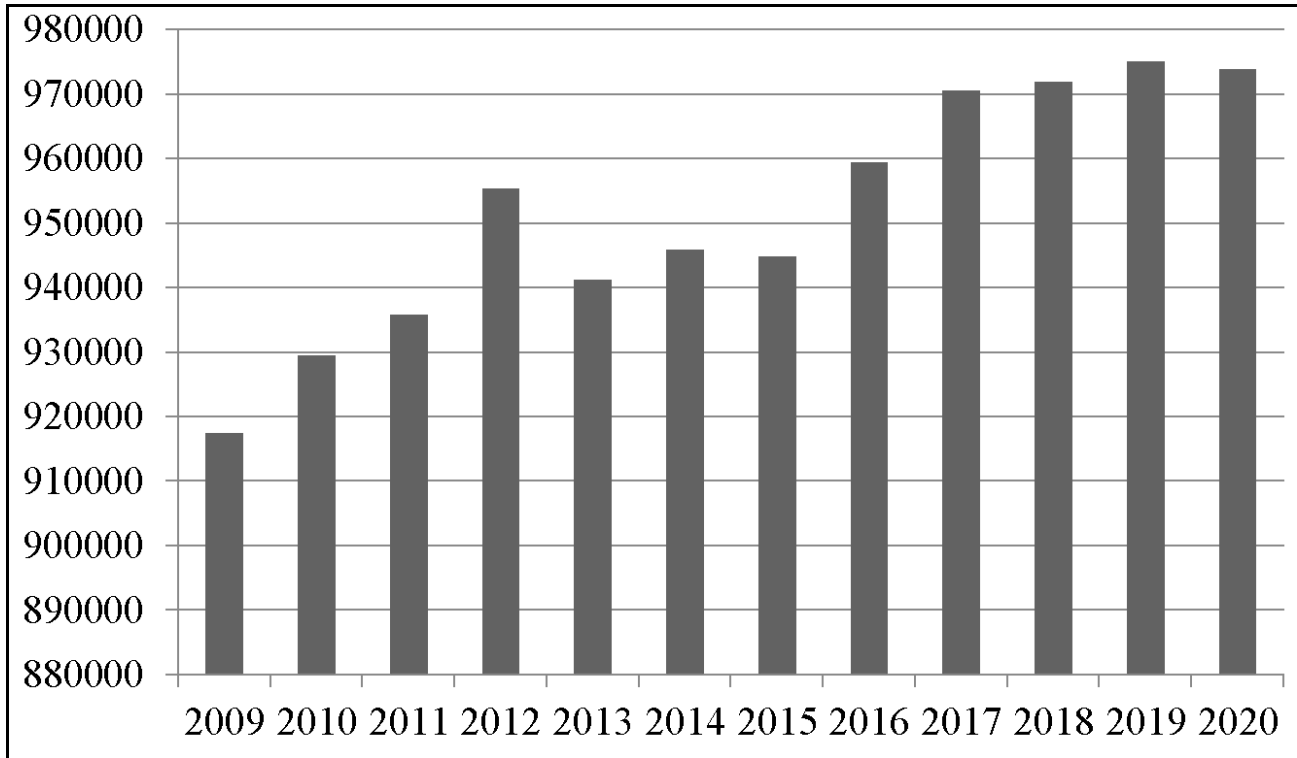
Source: Own projection, based on data analyzed

The analyzed companies declared total revenues that showed a favorable evolution in the first analysis period (2009-2012), in the period 2016-2017, and the last analysis year. The decreasing periods

were also registered in these years: 2013, 2015, 2018 and 2020.

The total assets held by the companies are detailed in **Figure no. 5**. Companies that did not report amounts were excluded from the sample.

Figure 5. Assets evolution in million euros



Source: Own projection, based on data analyzed

The total assets of the analyzed companies totaled 11419 million euros, primarily favorable developments, with only three exceptions to the decrease in the value of total assets in 2013, 2015 and 2020.

The results obtained of the companies in Europe do not confirm the study carried out by *Audit Analytics (2022)* which analyzed the evolution of the audit fees paid to auditors by companies listed on the market in the United States of America. Thus, there was a declining trend in audit fees and non-audit fees in 2020 and an upward trend until 2019. The decline was due to the global focus on restricting certain non-audit services to protect auditor independence. Also, another study by *Audit Analytics (2019)* showed that European companies pay considerably lower audit fees than American companies.

There was a general increase in total revenues and assets during the analyzed period, even if the evolution of audit fees was fluctuating. Is also a decrease in total fees due to the economic crisis and an increase after the crisis period, respectively; when companies reported increased

performance, the total value of audit fees increased. Based on this reasoning, we can conclude that the trend of audit fees was inversely proportional to total assets or revenues.

4. Conclusions

The paper presented the theoretical and practical aspects regarding the fees charged by auditors for the audit services and their evolution and perspective on auditors' risks.

Audit fees are currently a significant concern for audit firms and authority bodies. A lower amount of audit fees charged by auditors may indicate a lower audit effort, a poor audit quality, and a low financial reporting, and all of these issues can influence the investor decisions.

Audit fees are also an indicator of audit measurement because a balanced allocation of audit work can result in greater audit independence. Audit fees are also necessary in assessing the quality of the audit; in some cases, the

existence of higher amounts may indicate more significant efforts to improve quality, or the opposite, when high audit fees indicate a reliance on specific clients.

The analysis showed that the audit market was concentrated around Big4 auditors, whose number increased directly to the number of reports issued. Most of the audited companies were in Finance, insurance and real estate (28%), but also in Production (32%), most of which were based in the United Kingdom and France.

The evolution of audit fees fluctuated during the analyzed period. Out of the total audit fees, the fees charged for audit missions had a share of 58.6%, and those for non-audit services had a share of 40.4%. An inversely proportional evolution was found between the value of the

declared income and assets and the audit fees collected by the auditors.

The paper can be a bibliographic source for researchers in financial audit and for the representatives of audit firms to understand the need and importance of reporting audit fees.

Research limitations consisted in the fact that was used a single database. The data were collected manually from the information published by the companies, their trust degree being ensured by the reports declared by the financial auditors and by the management of the audited companies.

Future research directions can be translated into expanding the number of companies by using several data and developing a quantitative analysis based on an econometric model.

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The Impact of an Expanded Auditor's Report on the Stakeholders

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Abstract

Considering the stakeholders' increasing demand for more information, the International Auditing and Assurance Standard Board, in its quest to bridge the expectation gap, introduced a new expanded audit report format. However, whether this new audit report format is effective in meeting stakeholders' needs is a significant question that regulators, standard setters and academics are interested in evaluating. This paper aims to examine the impact of the expanded auditor's reports on stakeholders. The study adopts a qualitative approach and is based on an assessment of previous research conducted on the new audit report standards and the audit report's implications for stakeholders. The research findings suggest that the inclusion of enhanced information on auditor's responsibility, understandability of audit report information and the addition of critical information and post-implementation experience are important aspects influencing the effectiveness of the auditor's report. This study contributes with some key elements that can be helpful to standard setters, regulators, and academics who intend to develop recommendations to make auditor's reports more robust and effective for end-users.

Key Words: *audit; audit report; audit expectation gap; expanded audit report; ISA 701; stakeholders;*

JEL Classification: *M420*

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Introduction

Auditors play an essential role in trust-building and are a significant component of the organisation's corporate governance structure. As independent experts representing shareholders and providing assurance on financial statements prepared by the management, auditors have a crucial function and a major responsibility on their shoulders (Rodgers et al., 2019). An audit report is a key deliverable which, most of the time, consists of the only communication channel between the auditors and the shareholders, therefore being a highly important document.

Auditor's Report

Audit is an essential element of corporate governance that aims to close the information gap resulting from the separation of ownership and management, also referred to as the agency problem. The agency problem arises specifically in the case of publicly listed companies as most investors (shareholders) are generally not involved in the day-to-day management of the corporates. The agency problem requires a robust mechanism to ensure that the shareholders' interests are well-protected. The auditor's report enhances stakeholders' trust in the financial information prepared and reported by the management; it is instrumental in ensuring that stakeholders feel comfortable using the financial information and proceed confidently with their decision-making (Velte & Issa, 2019). The former auditor's report format, which was used in most of the countries until 2016, was helpful to stakeholders. However, there were some major limitations in terms of information delivered to stakeholders. The structured format with limited scope for auditors to include additional information and the information conveyed in a restricted manner were hindrances and proved ineffective in bridging the knowledge gap. In the past couple of decades, stakeholders have increased their demand for more information to be included in the audit reports, as they are interested not only in the audit opinion but also in how the auditors reached the conclusion and formed the opinion, the limitations of the audit, and other critical aspects. Stakeholders felt that the simple and technical audit report was ineffective since it did not provide relevant information to them (Gutierrez et al., 2018).

In response to the stakeholders' increasing demand for audit reports to be more informative and to ensure audit

reports provide more relevant and comprehensive details in an understandable manner, the International Auditing and Assurance Standards Board introduced a new auditing standard and amended existing ones related to the audit reports. The public interest entities' audit reports have been significantly impacted by these changes.

The following are the key modifications brought about by the new standards:

- Inclusion of a key audit matters section in the audit report in which auditors must provide additional information to stakeholders about critical audit issues and how the auditors responded to these concerns. This is only mandatory for public interest entities' audit reports;
- Modification of the audit report's structure for enhanced understandability;
- Improved going concern reporting and introduction of additional paragraph highlighting related material uncertainty, if any exists;
- More robust reporting of information on auditor's independence, ethical duties and auditor responsibilities (International Auditing and Assurance Standards Board [IAASB], 2015).

Stakeholders and their expectations

Even though the auditor's report is prepared for and addressed to the shareholders, to whom the auditors owe their primary responsibility, its use is not restricted to them. A larger stakeholder group relies on the auditor's reports and uses the conveyed information to make financial or non-financial decisions. Audit reports enhance confidence in the financial statements. If required by the jurisdiction regulators, they may also include additional details on the compliance aspects. Accordingly, all stakeholders who are interested in the company's financial information are by default interested in the audit report as well. Thus, an auditor's report is equally important to lenders, employees, the government, tax authorities, suppliers, pressure groups and society at large (Velte & Issa, 2019). The wider readership of the auditor's report leads to a unique problem, because each stakeholder is interested in different pieces of information and has varied expectations of the auditors. Though the opinion expressed in the auditor's report on the company's financial statements is equally relevant to all stakeholders, their need for supplementary data and structure differs

(Suttipun, 2020). Stakeholder expectations are impacted by their knowledge of auditors' responsibilities, audit methodology, audit scope and intended use of the information (Tiron-Tudor et al., 2018). As no solution by itself can meet the needs of all stakeholders, standard setters must perform the difficult task of managing varied expectations in the process of developing standards on the audit report.

The expanded audit report and stakeholders

Given the wider audience of audit reports, regulators and standard setters around the globe have been critical yet cautious about making changes to the audit report format (Kitiwong & Sarapaivanich, 2020). The knowledge gap caused by the disparity between users' expectations from auditors, the actual assurance provided, and the audit objective have always been some of the major causes of the audit expectation gap (Sirois et al., 2018). The new auditing standards for auditor reports intend to overcome not only the knowledge gap but also the larger audit expectation gap (Cordoş & Fülöp, 2020). The new standards attempt to attain this by requiring auditors to supply enhanced information on the auditor's responsibilities, the independence and scope of an audit, as well as and more details about the limitations and challenges faced by auditors, by using the key audit matters section. The enhanced going concern data and the audit report structural changes were introduced to ensure that stakeholders have access to more and quality information (International Auditing and Assurance Standards Board [IAASB], 2015; Public Company Accounting Oversight Board [PCAOB], 2017). However, whether the standard has been effective in providing stakeholders with the necessary details and bridging the information gap is a critical subject that regulators, standard setters and scholars are interested in analysing.

1. Literature review

The peered-reviewed research papers and articles from renowned journals were used (a) to examine the existing research on the expanded audit report and its impact on stakeholders and (b) to further understand the research methodology, outcomes and research gaps in the existing literature. The studies have been broadly categorised under four headings, with the purpose of aiding in obtaining a better evaluation of current literature. The existing literature has been critically synthesised, analysed

and interpreted to identify the gaps and assess the potential and need for further research.

1.1 Auditor's responsibility

Among the major changes introduced by the revisions and new auditing standards on audit reports are more information on the auditor's responsibility, ethical requirements and audit scope (Abdullah & Mustafa, 2020). There have been few attempts to investigate the implications of these disclosures on stakeholders. The studies suggest that stakeholders with better information about the scope of an audit and the auditor's responsibilities are able to better understand the assurance level and the auditor's independence-related information (Tiron-Tudor et al., 2018). The revised model of the auditor's report provides more data on management and auditor responsibilities, which seems to be effective in bridging the expectation gap (Manoel & Quel, 2017). This information, corroborated with other changes, is expected to enhance the user's perceptions of audit quality. However, there is a lack of consensus on whether the new audit report format has improved transparency and audit quality (Masdor & Shamsuddin, 2018).

1.2 Understanding

Understanding is of paramount importance. If the audit report information is not understandable, it will hardly generate any value for the end-users. Although the new audit report expects to bridge the gap and thus expect to make the report more understandable, studies suggest the contrary (Segal, 2019). The lengthy audit report has resulted in tremendous changes to the auditor report's content and terminology (Tušek & Ježovita, 2020). Albeit the new auditor's report format delivers more information to users, the sentence structure, length and number of words are well beyond the expected linguistic limits, affecting the ease of understanding. Considering parameters such as the Flesch reading ease formula, the auditor's report seems to be highly complex to pass the readability test (Fakhfakh, 2016). Also, the non-core areas of the audit report are significantly lengthier and difficult to comprehend. The use of overly technical language and jargon has increased with the inclusion of the key audit matters section; this can further impact the understandability of the auditor's report, specifically when

the users are not experts in reporting and auditing (Tiron-Tudor et al., 2018).

1.3 Information

With the addition of the key audit matters section, the data on critical audit issues were expected to be instrumental in bridging the expectation gap; however, the results of related studies have been contradictory. According to a study based on auditors' perception of the new audit report format in South Africa, the disclosure of key audit matters (KAM) has been ineffective in bridging the expectation gap (Segal, 2019). Other studies find KAM are critical information for stakeholders (Zhou, 2019). Conversely, the study focusing on audit report users (Lenders in Macedonia) suggests the contrary and concludes that stakeholders benefitted from the inclusion of key audit matters information, with many lenders rating it as the most critical information for decision-making (Trpeska et al., 2017).

Another important change in the audit reports has been the inclusion of more detailed going concern information. A study of audit reports of Croatian listed companies indicates that this modification has been effective in providing relevant information to stakeholders (Tušek & Ježovita, 2020). In terms of materiality disclosure, lenders appear to be less interested in this information (Trpeska et al., 2017).

1.4 Post-implementation experience

Even though many studies have been conducted on the topic of expanded audit reports, most of them were performed during the initial stage of implementation. Hence, they have highlighted the need for post-implementation research. The actual effectiveness of the new auditor's report can be investigated following implementation (Faccia et al., 2020; Manoel & Quel, 2017; Tiron-Tudor et al., 2018). The post-implementation experience is essential for research, since it is only then that the impact of the new standard on audit quality and effectiveness can be truly understood (Masdor & Shamsuddin, 2018). The COVID-19 pandemic has led to an environment characterised by uncertainty, that raises questions on the going concern assumptions, this being an important test for the new audit report requirements (Đorđević & Đukić, 2021).

According to the literature review, most of the research papers evaluated the impact and effectiveness of new audit report requirements during the initial phase of implementation, and the findings were inconsistent. As at the moment the standard has now been implemented for a few years, there is ample potential for future research. Moreover, it can be expected that shareholders who have been acquainted with the new format will be in a better position to remark on the audit report's efficacy. The proposed study could be of immense value to the standard setters and regulators in understanding the effectiveness of audit reports.

2. Research problem and questions

2.1. Research questions

This study intends to evaluate the impact of information contained in audit reports on stakeholders using this information. Based on the literature review and critical evaluation of existing studies, substantial research gaps were identified. Consequently, relevant questions were framed and will be analysed in this study.

- a) What effect does the inclusion of expanded information on auditor responsibilities have on audit report users?
- b) Which aspects impact the understandability of the audit report's information and its implications for stakeholders?
- c) Which elements of the audit report are critical for stakeholders and have the most informative value?
- d) What was the impact of the new audit report standards and format on users after implementation?

2.2 Research objectives

The study was conducted with the following target objectives:

- a) To determine the impact of the audit report's enhanced information related to the auditor's responsibility and independence on stakeholders.
- b) To identify the factors that improve the auditor's report understandability and its effect on stakeholders.
- c) To ascertain the key elements of the expanded audit report that stakeholders perceive as critical for their decision-making.

- d) To detect the primary elements that influenced audit report users based on stakeholder post-implementation experiences.

3. METHODOLOGY

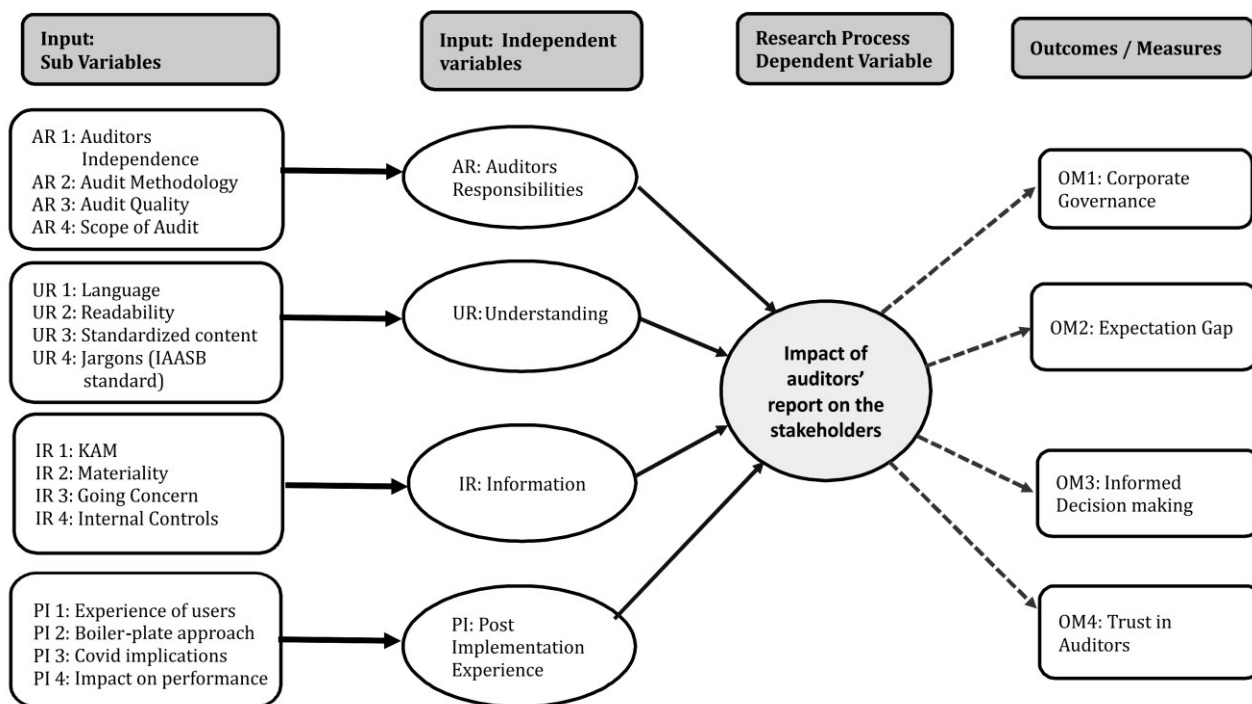
3.1 Methodology & scope

The study adopted a qualitative research approach and was based on a critical evaluation of available literature on the revised audit report and its implications on

stakeholders. The important variables that contribute to the audit report's effectiveness were analysed and identified. The study used as references peer-reviewed articles published after 2018, with few critical pieces before 2018. The current literature was examined to synthesise the essential variables. Through this analysis, the objectives, outcomes and conclusions were critically analysed, and the research gaps were identified.

3.2 Research framework

Figure no. 1. Research Framework



Source: Authors' projection

3.3 Variables

The independent variables and sub-variables highlighted in the framework above are described below.

3.3.1 Information on auditor's responsibility

The information on the auditor's responsibility (AR) is meant to improve transparency and set clear expectations.

AR 1: Auditor's independence

The reliability of the auditor's report depends on the auditor's independence; hence, information on their independence and ethical framework is critical for stakeholders.

AR 2: Audit methodology

The information on the methodology applied by the auditor can be effective in bridging the expectation gap and

providing more material to stakeholders about the conduct of an audit.

AR 3: Audit quality

As the audit report is the only deliverable from the auditors, and, in some cases, the only communication channel from the auditors, it is instrumental in providing information about the audit quality. With data on independence, ethics and audit methodology, the audit report can effectively offer insights on audit quality and lead to audit quality enhancement.

AR 4: Scope of audit

Stakeholders would be in a better position to evaluate the audit report if they understand the scope of an audit and the level of assurance that auditors provide. Understanding the auditor's responsibilities in terms of fraud and compliance with the law is crucial for stakeholders to make the greatest use of the audit report's information.

3.3.2 Understandability of information

Even though the auditor's report contained comprehensive information, it is of little value if it is not understandable. Understandability of information (UR) is a primary aspect that impacts the audit report users.

UR 1: Language. The language used in the audit report must not be overly complex, as this might impair understandability and reduce the value derived from the auditor's report.

UR 2: Readability. The length of sentences and the number of words included in each sentence can have a critical impact on readability. Lengthy paragraphs and sentences might make the audit report content difficult to grasp.

UR 3: Standardised content. Standardising the content and structure of audit reports can help users in easily navigating and identifying critical information from the audit reports, enabling understandability. However, this can be a limitation in terms of providing further information at times.

UR 4: Jargons (IAASB standard). The use of jargon can affect the understandability of audit report information, particularly for users with limited knowledge of auditing and reporting standards.

3.3.3 Information

Information (IR) is another aspect that impact the stakeholders.

IR 1: Key Audit Matters (KAM). The key audit matters section is an important addition to the audit reports that allows auditors to provide more information on critical audit aspects. The section is highly beneficial for users in terms of their understanding of the areas involving judgement and limitations faced by auditors and their response to the critical matters.

IR 2: Materiality. Materiality is a critical aspect that influences not only the audit plan and execution but also the overall results of the audit exercise. Hence, it is a significant piece of information that would interest stakeholders.

IR 3: Going Concern. An entity's ability to remain in business is critical information that impacts all stakeholders. Thus, it is an essential component on which the stakeholders expect an opinion from auditors.

IR 4: Internal Controls. The outcome of an auditor's internal control testing has a significant impact on audit. It is key information that can aid users in decision-making.

3.3.4 Post-implementation experience

As the new audit report standard has now been in place for six years, it is pertinent to evaluate the post-implementation experience (PI).

PI 1: User experience. As stakeholders have been using the new audit report format, their experience with it and comfort in adapting to the latest information have been a critical factor.

PI 2: Boilerplate approach. Though the new standards gave auditors an opportunity and obliged them to provide more information with respect to the key audit matters, there is a risk that they may take an easy and safe route of following a boilerplate approach and highlight the same items under this section on an ongoing basis, hence influencing the effectiveness of the auditor report.

PI 3: COVID-19 implications. The COVID-19 pandemic provided a good context for testing of the new audit report's strength. It is worth considering whether the auditors addressed the impact of uncertainties stemming from the pandemic and whether the new auditor report format truly helped stakeholders get access to the required information.

PI 4: Impact on performance. A critical test of the audit report's effectiveness and impact on stakeholders includes whether the offered information influenced their decision-making process.

4. Discussion, analysis and outcomes

4.1 Auditor's responsibilities

A lack of understanding of an auditor's responsibilities is a major factor impacting stakeholder's perceptions of audit and audit quality. The difference between stakeholders' expectations and auditors' responsibilities as prescribed by the statute and governing standards has widened the audit expectation gap. Since not all stakeholders come from a financial background, many may be unfamiliar with auditing knowledge and assurance (Rodgers et al., 2019).

Many stakeholders assume that auditors provide absolute assurance, i.e., a form of guarantee on financial statements and that an unqualified 'true and fair' opinion is proof that there are no frauds and errors. This misconception of the auditor's responsibility is a fundamental impediment to closing the expectation gap (Manoel & Quel, 2017).

The stakeholders lack visibility into the auditor's audit methodology, which might be a chief constraint from the stakeholders' perspective. The lack of information on audit methodology might undermine the trust in the audit or result in unrealistic stakeholder expectations of auditors. Auditors face various limitations and judgemental issues while performing the audit. Giving stakeholders more information about the auditor's responsibilities and the scope of the audit might be an effective strategy to bridge the audit expectation gap. The standard setters have taken steps in this direction with the inclusion of enhanced information on auditors' responsibility, ethical requirements and scope of an audit (Manoel & Quel, 2017).

The study of existing literature highlights that the factors listed below are among the key aspects of auditors' responsibilities that help bridge the expectation gap and that stakeholders find impactful and informative.

- Information on auditor's independence
- Information on audit methodology
- Information on the scope of an audit
- Information about audit quality

Outcomes

Including information on auditors' responsibilities in the audit report aids in enhancing stakeholders' understanding

and bridging the expectation gap. This eventually contributes to better corporate governance as stakeholders have more clarity on how to interpret the auditor's report.

Independence is key when it comes to any assurance engagement, and an audit of financial statements is no exception. Stakeholders value the information on auditor's independence since it brings them security when deciding on the usefulness of the auditor's report. The clear identification of the code of ethics and emphasis on the independence of the audit firm fosters more trust, thus turning these aspects into important audit report elements.

Stakeholders may not thoroughly understand the audit methodology; therefore, a detailed discussion about it can be detrimental and lead to information overload. Still, information on audit methodology is instrumental in ensuring that stakeholders understand how the audit was conducted, as well as its limitations. This is effective as stakeholders can have realistic expectations of auditors and audit reports (Tiron-Tudor et al., 2018).

The audit scope establishes a clear demarcation between what was audited and which was the subject matter, a favourable aspect as stakeholders gain clarity from it.

Audit quality has always been a concern. If stakeholders doubt the audit quality, they will never be able to trust the audit reports. One of the most critical pieces of information in the audit report that impacts the stakeholders are details that enhance the perception of audit quality (Li et al., 2019).

Thus, all the elements identified above are instrumental in increasing shareholder trust in audit reports. They create an environment in which stakeholders can be confident and rely on the audit as a mechanism of corporate governance.

Proposition 1: Inclusion of more information in the auditor's report on auditor's independence, audit methodology, audit quality and audit scope increase trust in the audit report and contributes to better corporate governance.

4.2 Understanding

For the auditor's report to be effective and attain its objective, the information must be understood in its actual spirit and sense. Though the new audit report intends to bridge the gap and so should be easy to understand, studies suggest otherwise (Segal, 2019).

The standardised format, though expected to make the reports understandable, can, on the contrary, lead to the use of overly complex language, affecting understandability. Albeit this characteristic is important, it should not be used as an excuse for not providing required information to stakeholders. Therefore, a fine balance must be maintained as standard setters develop the standard formats and contents and as auditors draft the audit report (Tiron-Tudor et al., 2018).

The use of simple language has been regarded as a key aspect that increases the audit report's understandability. Simple terminologies and fewer complex structures can assist stakeholders in better understanding the audit report's contents. The auditors have always relied heavily on jargon. While this can be effective for users who are experts in the field of reporting and auditing, it can be difficult for other stakeholders to decipher the meaning. This affects their overall understanding of the audit report, thus restricting the use of the information it provides (Fakhfakh, 2016).

Based on the analysis of the existing literature, the following factors were identified as the most important in influencing and enhancing the understandability of the audit report information:

- Language used
- Readability
- Standardised content
- Use of jargons

Outcomes

The value of an auditor's report to stakeholders is determined by the clarity of its information. Studies suggest that the use of technical language and complex sentences can create a barrier to stakeholders' understanding of the audit reports' contents. Even though the inclusion of additional information in the audit report can be helpful to stakeholders, if the language used is overly technical and there is extensive use of accounting and audit jargon, the usefulness of the additional information may be limited (Bédard et al., 2014).

If the audit report is understandable, stakeholders will be able to grasp the material with ease. Moreover, better understanding the information is an essential element in bridging the expectation gap. Thus, if the language used in the audit report is not unduly complex, the content is not difficult to read and comprehend. Furthermore, if there is

no over-reliance on jargon, the audit report can be an effective tool in bridging the expectation gap (Segal, 2019).

Proposition 2: Simple language, standardised content, improved readability and reduced jargon in an audit report enhance its understandability and contribute to bridging the expectation gap.

4.3 Information

The data in the audit report is useful to stakeholders, but there are certain critical areas in which they are more interested. The new audit report format provides stakeholders access to more information, which can help them in the decision-making process. Many aspects of the standard format tend to focus on information that is general and not specifically related to the audit of the entity's financial statements. Thus, not all sections of the audit report have the same value.

The areas of the audit that provide more information, specifically those linked to the audit opinion and audit outcomes and findings, are relevant to stakeholders for decision-making, hence those have higher information value. The details contained in the key audit matters section provide information on critical audit issues, which are essential for stakeholders (Zhou, 2019).

Similarly, information on the going concern assumption would be of great interest to all stakeholders (Brunelli et al., 2020). Materiality-related information and details on critical aspects, such as the effectiveness of internal controls implemented by the entity, can provide significant value to stakeholders and help them in making better and more informed decisions (Tušek & Ježovita, 2020).

Based on the evaluation, the following audit report contents were determined to be relevant and of high information value:

- Key Audit Matters (KAM)
- Materiality
- Going Concern
- Internal Controls

Outcomes

Stakeholders rely on financial information to learn about the entity's financial performance and position, this data being essential for their decision-making process. As

auditor reports enhance their trust in the financial information and provide them complementary material that aids in decision-making, stakeholders are highly interested in the audit report (Goh et al., 2019).

Although certain elements in existing audit reports remain critical, additional information on key audit matters, going concern-related risks, the outcome of the entity's internal control systems testing and the materiality threshold used can be of significant value to stakeholders in their decision-making process (Alves & Galdi, 2019).

Proposition 3: The information about going concern assumption and risks, internal controls, audit technology used by the auditors and the key audit matters section has a high informational value and enables stakeholders to make high-quality decisions.

4.4 Post-implementation experience

The new audit reporting standard has been in place for six years now in most countries. Stakeholders, though initially sceptical and not accustomed to the information contained in the audit report, are now expected to be comfortable with the revised requirements. The post-implementation phase is critical since it is the experience gained during the initial years that defines the success of any auditing standards. The early years are not the best benchmark for evaluating the effectiveness of the standards (Suttipun, 2020).

The stakeholders' post-implementation experience with the extended audit report format is essential to be assessed, since the perception developed during this phase impacts their appraisal and understanding of the information contained in the audit report. The post-review experience is an important barometer for discerning efficacy and hence a critical aspect to be studied.

The following key factors were identified as relevant for stakeholders based on post-implementation experience:

- Users' experiences with the new expanded audit reports
- Boilerplate approach
- COVID-19 implications
- Impact on the company's performance

Outcomes

The post-experience period has been an essential learning stage for users of the auditor's report and at the same time significant in ensuring the auditor's report's success. However, the post-audit experience is greatly influenced not just by the standard itself, but also by the approach taken by the auditors in drafting and delivering information in the audit report. The boilerplate approach adopted for KAM is the main factor influencing the value of this section and information therein.

The COVID-19 pandemic has been a major test of the new audit report standard, as stakeholder expectations for information during the period have risen. They have also become increasingly reliant on auditors to acquire critical information on an entity's survival as a going concern and its performance during this testing period (Đorđević & Đukić, 2021). The lack of information on these aspects can have a substantial impact on stakeholders' trust in auditors (Crucean & Hategan, 2021).

Proposition 4: The boilerplate approach, user experience, COVID-19 implications and the impact of audit information on a company's performance are critical components that impact the stakeholders' post-implementation experience. Moreover, these factors are instrumental in strengthening trust in auditors.

5. Critical relationship among the four independent variables

The four variables analysed in this study are interdependent and influence one another. The content on an auditor's responsibilities is significant and stands among the aspects that have a high informative value for stakeholders. This information can also influence the understandability of the audit report's data.

The comprehensibility of the audit report's contents and the information itself are the dominant factors affected by the stakeholders' post-implementation experience. On the other hand, the post-implementation experience is instrumental in enhancing the understandability and informative value of audit report information.

The audit report's understandability influences its informative value to a considerable extent. Thus, the independent variables are interrelated.

6. Contribution to theory, literature and practice

The new audit report format, which was issued and adopted a few years back, has been developed with the intention of narrowing the audit expectation gap and providing better information to the users, but whether the revised guidelines helped in narrowing the audit expectation gap is an important question that regulators and academics are interested in evaluating.

The study highlights some important aspects of the auditor's report and their impact on stakeholders, which has always been a topic of interest for academia and institutions, hence being a significant addition to the existing literature on the auditors' reports.

Regulators, standard setters, and audit firms around the globe are keen in understanding whether the updated audit reporting standards and the expanded audit reports have been effective in attaining their desired objective. The outcome of this study provides some important perspectives which would help the regulators and standard setters while deciding on the future changes / amendments to the format and contents of the audit report. The findings of this study provide some important insights to the auditors, assisting them in drafting effective audit reports, considering the impact that the contents have on the users of audit reports.

7. Conclusion, implications and future scope

The information contained in the audit reports is critical for stakeholders and seems to have a significant impact on them. The inclusion of relevant and understandable information in the audit report can be useful in bridging the expectation gap and can lead to improved corporate governance. Given the current financial scandals and the questions being raised about the efficacy of audit as a reliable mechanism to enhance trust, effective audit reports can play an essential role in building trust in auditors. This study contributes with some key elements that can

be helpful to standard setters, regulators and academics who intend to develop recommendations to make audit reports more relevant and effective for end-users.

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Since there have been very few studies on the new audit reporting format after the post-implementation period that have evaluated the impact on stakeholders, the availability of relevant literature has been limited. The influence of the revised audit report will differ from stakeholder to stakeholder; thus, it is worth examining the effect for each stakeholder group separately rather than following a generic approach. Future research should centre on conducting a quantitative study based on primary data on stakeholder experience and perception. It will also be worth evaluating the post-COVID-19 implications and the effectiveness of audit reports in providing predictive value regarding an entity's going concern and performance to stakeholders.

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A Bibliometric Study upon Auditor-Client Negotiation Aspects

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Abstract

Financial reporting literature indicates a research gap regarding the topic of auditor-client negotiation (ACN). Thus, the current paper seeks to present the concept of ACN from a literature review perspective. Further, the research is organized in two main sections, namely: (1) the qualitative analysis, based on previous studies in the field of ACN and (2) the quantitative analysis, which involves the use of specific indicators, such as: level of citations per year, region/ country, journal type etc. Then, the study evolves into new insights and discussions upon the impact of literature review on auditor-client negotiations. Overall, the authors used an extensive analysis of 37 publications collected from Web of Science, selecting the most relevant literature in the fields of business, finance, management, social sciences, and ethics, during the period 1975- 2022. Results show that the concept of ACN is being debated in top journals, totalizing no less than 602 citations, and recording an H-Index of 16. Further on, 8 top journals were identified with more than one publication in the sphere of auditor-client negotiation (ACN), 10 authors that have written at least two papers related to ACN, and not least 7 articles with top citation levels. All the 37 literature sources bring an extensive contribution to the development of ACN concept and represent the background for building new insights and prospective research. The present study has practical implications, as defining the background of ACN helps practitioners to find efficient solutions to their everyday challenges.

Key words: *auditor-client negotiation (ACN); qualitative analysis; quantitative analysis; citations; journals;*

JEL Classification: *M42*

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Introduction

Nowadays, the topic of auditor-client negotiation (ACN) is a very debated one, through both relevance and importance. The common interest for an efficient negotiation process between the parts leads to discussions on accounting treatments that can be accepted or adjusted. However, one should distinguish between the auditor responsibility for issuing an audit report, versus client accountability on its own financial reports.

Auditor-client interactions depend on auditor knowledge, expertise, and competences, as well as the risk of client pressure to agree on certain reporting aspects. Nevertheless, the ideal ACN context assumes the perfect harmonization on audit versus client perception, information collection and data gathering, as well as auditor judgement, and not least, final decisions.

ACN impacts investors behaviour, as they accept only credible, verified financial reports. Therefore, when ACN meets failure, there are two major risks that might occur, in practice. First, the auditor can lose customers if refusing making compromises regarding adjustments in accounting treatments. Second, as client demands are accepted, auditor reputation and credibility are strongly affected.

Methodology

This research focuses on explaining the notion of auditor-client negotiation (ACN) from the literature review perspective. Therefore, we start by extracting from Web of Science all the publications that describe or are related to the specific topic of "auditor-client negotiation", resulting no less than 37 studies. The scope is to perform both a quantitative and a qualitative analysis on these specific ACN literature sources.

The quantitative study involves organizing and interpreting the data obtained through Web of Science extraction. Thus, we synthesize the information under the form of specific indicators: citation level, number of top journals or top authors, top papers etc., using charts, tables, or figures. Then, we explain the quantitative data by analysing the mentioned indicators on time scale intervals (or their evolution in time), as well as journal/article ranking scores. Nevertheless, the results are expressed in percentages as a relative measure- the best approach for

this type of research. The qualitative analysis outlines the content of the 37 publications from the sample, summarizing aspects such as *specific topics* related to ACN (or the *ACN subtopics*), *methodology* involved in each of the studies, *results* and finally, *research impact*. All these represent in fact the criteria for our content analysis.

The research design is based on a specific methodology that involves at a first stage extracting all the publications from Web of Science database, the search or filter being made using specific keywords "auditor-client negotiation". The period of the analysis outlines between 1991 and 2022. Thus, the Web of Science report shows a total of 37 publications, that represents our sample for the quantitative and qualitative studies. The second stage of the conducted research implies grouping the data in synthetic tables, charts, and figures, to show the evolution of papers published in the area of ACN within top rated journals, as well as ranking the best papers in the field, the most cited, or providing other quantitative indicators, such as authors with more than one publication, citations per journal/article/region etc. An intermediate step was to interpret and explain all the data obtained and analyse the literature review contribution to the development of ACN concept in time. The third stage of our methodology involves a content analysis over the 37 papers from the sample, where we focus on specific criteria. Therefore, for each one of the 37 publications, we are going to present the ACN subtopics, research methodology, results, and impact.

Results and discussions

Quantitative analysis

This section outlines the relevance of ACN concept according to relevant literature review sources. Therefore, **Table no. 1** shows the quotation levels per journal, according to Web of Science database. Data reveals four types of indexes, namely: Social Sciences Citation Index (SSCI), Emerging Sources Citation Index (ESCI), Book Citation Index- Social Sciences and Humanities (BKCI-SSH), Conference Proceeding Citation Index- Social Sciences and Humanities (CPCI-SSH). Out of these, the highest proportion of quotation levels is registered for SSCI Indexed journals, no less than 31 quotations or 84% from the total number of quotations.

Table no. 1. Journal quotation according to Web of Science

Field: Web of Science Index	Record count	% of 37
Social Sciences Citation Index (SSCI)	31	83.78%
Emerging Sources Citation Index (ESCI)	4	10.81%
Book Citation Index – Social Sciences and Humanities (BKCI-SSH)	1	2.70%
Conference Proceedings Citation Index - Social Sciences and Humanities (CPCI-SSH)	1	2.70%

Source: Authors projection, based on data extracted from www.webofscience.com

When grouping journals by their area of discipline (Table no. 2), we notice that most of the 37 publications are in business finance (almost 90%),

while 13% represent management journals, 5% business and social sciences, and only 2% of papers are in the ethics field of research.

Table no. 2. Journals by area of discipline

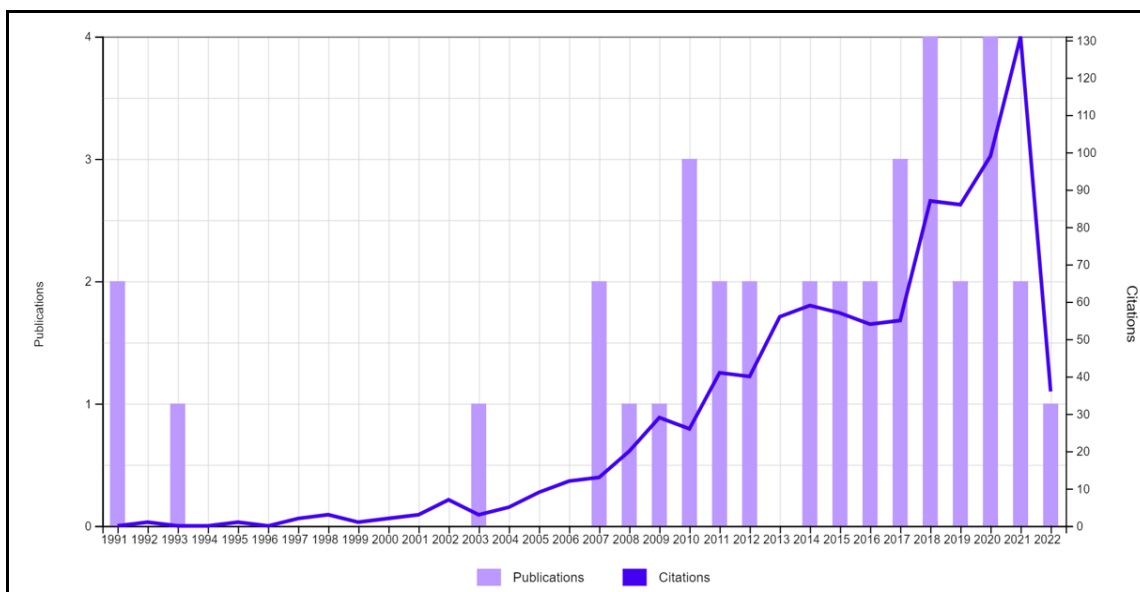
Field: Web of Science Categories	Record count	% of 37
Business Finance	33	89.19%
Management	5	13.51%
Business	2	5.41%
Social Sciences Interdisciplinary	2	5.41%
Ethics	1	2,70%

Source: Authors' projection, based on data extracted from www.webofscience.com

Chart no. 1 describes the evolution of publications presenting the topic of ACN that have been issued during the period 1991- 2022 as well as their citation levels. The figures from the chart show the increasing

interest for ACN research in recent years, as well as importance attributed by high profile scholars and academics, as citations also expanded between 2018 and 2022.

Chart no. 1. Evolution of publications presenting the topic of ACN that have been issued during the period 1991- 2022 and citation levels



Source: Extracted from www.webofscience.com

Table no. 3 outlines the journals and papers distribution according to geographic region. Thus, most publications come from USA (more than half of the sample), while the rest of the countries register low numbers or percentages

(between 1 and 4 issues per region). The other countries besides USA are Canada, China, Singapore, Australia, Malaysia, Norway, Austria, Denmark, Finland, Indonesia, Qatar, Sweden.

Table no. 3. Sample distribution according to geographic region		
Field: Countries/ Regions	Record count	% of 37
USA	20	54.05%
Canada	4	10.81%
China	4	10.81%
Singapore	4	10.81%
Australia	3	8.11%
Malaysia	3	8.11%
Norway	2	5.41%
Austria	1	2.71%
Denmark	1	2.71%
Finland	1	2.71%
Indonesia	1	2.71%
Qatar	1	2.71%
Sweden	1	2.71%

Source: Authors' projection, based on data extracted from www.webofscience.com

Regarding the type of publication, most of them represent articles (30 out of 37), while the others have non-significant levels in the sample (editorial materials, review

articles, book chapters, discussions, early access, notes, proceedings papers). In **Table no. 4** you may find other details.

Table no. 4. Sample description according to the type of publication		
Field: Document Types	Record count	% of 37
Articles	30	81.08%
Editorial Materials	2	5.41%
Review Articles	2	5.41%
Book Chapters	1	2.71%
Discussions	1	2.71%
Early Access	1	2.71%
Notes	1	2.71%
Proceedings Papers	1	2.71%

Source: Authors' projection, based on data extracted from www.webofscience.com

Table no. 5 presents the top 7 articles with the highest level of citation. The papers discuss various topics, from ACN conservatism to guidance and audit committee

influence upon ACN, perspectives of CFO (chief financial officer), the reciprocity-based strategy, history of ACN, negotiation or auditor rotation aspects.

Table no. 5. Top 7 articles with highest level of citation

Publications	Citations						
	2018	2019	2020	2021	2022	Average per year	Total
Total	87	86	99	131	36	30.26	938
1. Conservatism and auditor-client negotiations. Antle, R., & Nalebuff, B. (1991). <i>Journal of Accounting research</i> , 29, 31-54	12	11	14	13	5	5.81	186
2. Effects of authoritative guidance availability and audit committee effectiveness on auditors' judgments in an auditor-client negotiation context. Ng, T. B. P., & Tan, H. T. (2003). <i>The Accounting Review</i> , 78(3), 801-818	8	12	7	6	1	6.95	139
3. The chief financial officer's perspective on auditor-client negotiations. Gibbins, M., McCracken, S. A., & Salterio, S. E. (2007). <i>Contemporary Accounting Research</i> , 24(2), 387-422.	4	7	6	4	3	5	80
4. The effect of auditors' use of a reciprocity-based strategy on auditor-client negotiations. Sanchez, M. H., Agoglia, C. P., & Hatfield, R. C. (2007). <i>The Accounting Review</i> , 82(1), 241-263.	5	5	7	8	1	4.38	70
5. Fifteen years in the trenches: Auditor-client negotiations exposed and explored. Salterio, S. E. (2012). <i>Accounting & Finance</i> , 52, 233-286.	10	7	10	8	3	5.45	60
6. Negotiation research in auditing. Brown, H. L., & Wright, A. M. (2008). <i>Accounting Horizons</i> , 22(1), 91-109.	3	6	6	6	2	3.47	52
7. The impact of auditor rotation on auditor-client negotiation. Wang, K. J., & Tuttle, B. M. (2009). <i>Accounting, Organizations and Society</i> , 34(2), 222-243.	7	4	3	6	0	3.21	45

Source: Authors' projection, based on data extracted from www.webofscience.com

According to **Table no. 6**, the top 10 authors who published more than one paper in the field of ACN are: Tan H.T., Aghazadeh S., Bennet G.B., Hatfield R.C., Kida

T., Mactavish C., Perreault S., Salterio S.E., Trotman K.T., Zhang J.X.

Table no. 6. Top 10 authors who published more than one paper in the field of ACN

Field: Authors	Record count	% of 37
Tan H.T.	4	10.81%
Aghazadeh S.	2	5.41%
Bennet G.B.	2	5.41%
Hatfield R.C.	2	5.41%
Kida T.	2	5.41%
Mactavish C.	2	5.41%
Perreault S.	2	5.41%
Salterio S.E.	2	5.41%
Trotman K.T.	2	5.41%
Zhang J.X.	2	5.41%

Source: Authors' projection, based on data extracted from www.webofscience.com

Table no. 7 outlines the list of top journals that contain more than one publication on ACN, namely: Auditing: A Journal of Practice & Theory, Contemporary Accounting Research (5 papers), Accounting Organizations and

Society (4 papers), Accounting, Auditing & Accountability Journal, Accounting Review, Group Decision and Negotiation, Journal of Accounting Research, Managerial Auditing Journal (2 papers).

Table no. 7. Top journals that contain more than one publication on ACN

Field: Publication Titles	Record count	% of 37
Auditing: A Journal of Practice & Theory	5	13.51%
Contemporary Accounting Research	5	13.51%
Accounting Organizations and Society	4	10.81%
Accounting, Auditing & Accountability Journal	2	5.41%
Accounting Review	2	5.41%
Group Decision and Negotiation	2	5.41%
Journal of Accounting Research	2	5.41%
Managerial Auditing Journal	2	5.41%

Source: Authors' projection, based on data extracted from www.webofscience.com

Qualitative analysis

Table no. 8 shows the synthesis of the qualitative analysis. We use four main criteria for describing previous

studies on ACN, namely: ACN subtopics, methodology, results, and impact.

Table no. 8. Synthesis of most representative studies on ACN

No.	Paper citation	ACN subtopics	Methodology	Results	Impact
1	Antle & Nalebuff (1991).	auditor incentives, auditor views, revised statements	literature review analysis	auditors are not conservative	testing theories on auditor conservatism
2	Ng & Tan (2003)	audit negotiation, negotiation relationship, national office consultation, auditor approach, CFO satisfaction	experimental design	auditor negotiation impacted by guiding authorities and audit committee	presenting the steps of ACN

No.	Paper citation	ACN subtopics	Methodology	Results	Impact
3	Gibbins et al. (2007)	negotiation, chief financial officer and auditor negotiation, accounting treatments,	experiential questionnaire	ACN and accounting changes, negotiation stages from CFO so CEO	practical insights-useful for practitioners
4	Sanchez et al. (2007)	audit adjustment, negotiation, client satisfaction, client retention, audit differences	experimental design	clients asking for income adjustments in ACN; disclosing more information reduces auditor rotation	understanding the importance of ACN
5	Salterio (2012)	audit delay; negotiation theories	literature review analysis	qualified audit opinion, going concern, and material weakness can cause a delay in the issuance of audit report	contribution to future research
6	Brown & Wright (2008)	audit process, disclosure, ACN stages	literature review analysis	ACN pre-negotiation, ACN negotiation, ACN negotiation outcomes depend on auditor and characteristics and business environment	contribution to future research
7	Wang & Tuttle (2009)	audit rotation, negotiation theories, ACN outcomes	experimental study	mandatory rotation of audit brings more customers for another auditor	new research insights for audit rotation determinants
8	Perreault & Kida (2011)	auditor's persuasion power in ACN, effectiveness of auditor arguments, communication in audit	literature review analysis	the tactic of persuasion determines the client reaction of accepting or not the adjustments indicated by the auditor	benefits of persuasion tactics in audit
9	Pomeroy (2010)	audit investigation, accounting decision	literature review analysis	ACN does not influence audit investigation	practical approach and relevant contribution to future studies on ACN
10	Kinney & McDaniel (1993)	earning correction, audit delay, internal control, misstatements	regression analysis and modelling	earning correction and misstatements influence audit delay	practical implications
11	Salleh & Stewart (2012)	audit committee, audit mediation techniques	case study and semi-structured interviews	audit committee acting as a mediator	mediation techniques in audit
12	Trotman & Trotman (2010)	auditor judgments, audit demand, quality of audit process, internal audit	literature review analysis	factors affecting audit judgements	contribution to future research
13	Chan et al. (2016)	audit reporting lag, non-standard audit opinions, restatements	literature review analysis	audit reporting lags depend on the expertise level of the auditor, on complexity of the audit process, and risks involved	contribution to future research
14	Bennett et al. (2015)	pre-negotiation judgments in audit	literature review analysis	audit deadline pressures changes auditor behaviour	ACN environment characteristics

No.	Paper citation	ACN subtopics	Methodology	Results	Impact
15	Fu et al. (2011)	experienced versus inexperienced auditors	experimental research	experienced auditors have relevant negotiation skills	practical implications
16	Church et al. (2020)	audit delay, discretionary accruals	mixture of archival, experimental and qualitative studies	narcissism as auditor characteristic cancels any attempts from client to negotiate accounting treatments	practical implications
17	Perreault et al. (2017)	audit engagements, negotiation strategies, concessions	literature review analysis	strategy used by the auditor in the negotiation process affects the attitude of clients, who can accept easier the accounting treatments suggested by the auditor	contribution to future research and practical implications
18	Sun et al. (2015)	negotiation strategies, concessions, effective strategies	experimental research	having concessions at the end of audit process instead of allowing them from the start builds effectiveness	contribution to future research and practical implications
19	Cipriano et al. (2017)	qualified audit opinion, Generally Accepted Accounting Principles, Securities and Exchange Commission (SEC), compliance	literature review analysis	compliance with GAAP cannot be negotiated by auditors as it interferes with the qualified audit opinion and decrease in the quality of financial reports	contribution to future research and practical implications
20	Cheng et al. (2017)	concessions, audit judgment	literature review analysis	strategies used previously by auditors in the negotiation process influence current audit strategies	contribution to future research and practical implications
21	Kachelmeier (2018)	auditor-client interactions, face to face communication versus electronic communication between client and auditor, auditor intimidation, professional skepticism	experimental design, role playing	face to face communication induces the fact that clients intimidate their auditors, and there are more questions from auditor side (increase in auditor skepticism), in comparison to e-mails or electronic communication	contribution to future research and practical implications
22	MacTavish (2018)	audit negotiation, negotiation relationship, national office consultation, auditor approach, CFO satisfaction	experimental design	when auditors insist on complying with national office consultation client is going to accept easily to make accounting adjustments	contribution to future research and practical implications
23	Bhattacharjee et al. (2020)	audit committee, accounting dispute, perspective taking in ACN	experimental design	solutions found by auditors are flexible in relation to client preferred accounting treatments	contribution to future research and practical implications

No.	Paper citation	ACN subtopics	Methodology	Results	Impact
24	Kleinman et al. (2014)	ACN cognitive factors, ACN risk preference factors	simulated ACN and questionnaire; structural equation modeling	ACN cognitive factors correlated with objectives for income; ACN risk preference factors do not influence outcomes	contribution to future research
25	Jones (2010)	interaction between auditors and management,	regression analysis and modelling	audit processes in which auditors invest allot of time and effort versus the level of income registered by their clients	contribution to future research and practical implications
26	Maresch et al. (2019)	trust between auditor and client, negotiation, disagreement	experimental design	competency is the key for reducing disagreements and increasing the degree of trust in ACN	contribution to future research and practical implications
27	Jones et al. (2019)	firm identification, social identity theory, role representation	quantitative study analysis of specific indicators: gender demographics, roles in the company, years experience for auditors etc. use of Likert scale and statistical tests	in most of cases, adjustments are requested by female auditors and less are done at the initiative of by male auditors	contribution to future research
28	Kulset & Stuart (2018)	audit negotiation, external audit	questionnaire and data collection	audit standards precision is strongly correlated with ACN strategies	practical implications
29	Azmi & Hoong (2014)	aggressiveness in ACN; concessions timing; tax audit	literature review analysis	using the right negotiation strategies leads to tax compliance on a voluntary basis; the level of tax complexity interferes with how aggressive is the tax practitioner in ACN concerning tax aspects	practical implications for tax authority
30	Dodgson et al. (2021)	relationship partners, ripeness theory of third-party intervention	experimental design	ripeness theory affects audit concessions in both ripe negotiation stages and less ripe ones	contribution to future research in ripeness theory implication for ACN
31	Awadallah (2018)	audit disputes; auditor-client interactions; negotiations strategies; dual concerns model; non-audit services; audit tenure; audit firm size	experimental study on 152 professional auditors	when it comes to audit conflicts, no ACN strategy is better than the others	contribution to future research in audit - client negotiation strategies
32	Baiman (1991)	audited financial statements, final financial report after ACN	modeling, setting assumptions and alternatives	penalties in audit affected by ACN	early research stages on audit conservatism

No.	Paper citation	ACN subtopics	Methodology	Results	Impact
33	Carrington & Alander (2022)	reported profit, ACN tensions	case study	profit reporting is a result of the combined work of accountants and managers, verified by auditors in order to respect three main principles: compliance, control, and caution	practical implications
34	Mustikarini & Adhariani (2022)	auditor-client relationship (ACR); interaction between auditor and client	literature review and content analysis	research gap in ACN field; various studies on ACR perspectives; evidence on regions and countries that apply regulation on ACR	practical implications
35	Aghazadeh et al. (2020a)	client retention risk, integrated audit, internal control deficiency assessment	experimental design	concessions and timing in audit influence ACN and auditor severity	practical implications
36	Aghazadeh et al. (2020b)	accounting estimates, audit adjustments, financial reporting positions	experimental design	ACN derives from the status of audit client	contribution to future research and practical implications
37	Azmi & Voon (2016)	auditing experience, concession timing	experimental design: statistics and modelling	the experience in audit and negotiation strategies related to time concessions impact the adjustments made in audit	practical implications: insights upon ACN

Source: Authors' projection, based on data extracted from www.webofscience.com

Early studies in the field of ACN (Antle & Nalebuff, 1991; Baiman, 1991; Kinney & McDaniel, 1993) investigate audited financial statements and final financial report after ACN, observing that penalties in audit affect ACN and present auditor incentives, auditor views, and revised statements, demonstrating that auditors are not conservative. Kinney & McDaniel (1993) study earning correction, audit delay, internal control, misstatements, using regression analysis and modelling, and find that earning correction and misstatements influence audit delay, incurring many practical implications.

Most of the scholars and academics use experimental design (MacTavish, 2018; Bhattacharjee et al., 2020; Maresch et al., 2019; Dodgson et al., 2021; Aghazadeh et al., 2020a; Aghazadeh et al., 2020b) to conduct research on specific ACN subtopics, such as: audit negotiation, negotiation relationship, national office consultation, auditor approach, CFO satisfaction (MacTavish, 2018), audit committee, accounting dispute, perspective taking in

ACN (Bhattacharjee et al., 2020), trust between auditor and client, negotiation, disagreement (Maresch et al., 2019), relationship partners, ripeness theory of third-party intervention (Dodgson et al., 2021), client retention risk, integrated audit, internal control deficiency assessment (Aghazadeh et al., 2020a), accounting estimates, audit adjustments, financial reporting positions (Aghazadeh et al., 2020b). Results indicate that when auditors insist on complying with national office consultation, the client is going to accept easily to make accounting adjustments (MacTavish, 2018). Further, Bhattacharjee et al. (2020) identifies that an auditor can find flexible solutions in relation to client preferred accounting treatments. As for competency, Maresch et al. (2019) considers this represents the key for reducing disagreements and increasing the degree of trust in ACN. However, according to Dodgson et al. (2021), ripeness theory affects audit concessions in both ripe negotiation stages and less ripe ones. Other results in the sphere of ACN research indicate

that concessions and timing in audit influence ACN and auditor severity (Aghazadeh et al., 2020a) while ACN derives from the status of audit client (Aghazadeh et al., 2020b). Each of the mentioned papers brings a consistent contribution to future research and has practical implications for ACN sphere of interest.

Another study that develops upon the methodology of experimental design, and that in addition uses statistics and modelling, proves that the experience in audit and negotiation strategies related to time concessions influence audit adjustments (Salleh & Stewart, 2012). This research also has practical implications, bringing up new insights upon ACN.

Kleinman et al. (2014) discusses ACN cognitive factors, ACN risk preference factors, simulating ACN through a questionnaire and implementing the structural equation modelling method. Their results demonstrate that ACN cognitive factors are correlated with objectives for income, while ACN risk preference factors do not influence outcomes. In addition, we underline that this study contributes to future research on ACN.

Salleh & Stewart (2012) and Carrington & Alander (2022) prefer the case study method for analysing correlations between audit committee, audit mediation techniques, as well as reported profit versus ACN tensions. In case of the research conducted by Salleh & Stewart (2012), semi-structured interviews are also used. Findings show that audit committee acts as a mediator, while profit reporting is a result of the combined work of accountants and managers, verified by auditors to respect three main principles: compliance, control, and caution.

Gibbins et al. (2007) studies negotiation processes between chief financial officer and auditor, as well as accounting treatments, applying an experiential questionnaire. Here we note the practical insights that can be useful for practitioners.

Most of the papers from our sample represent literature review analysis. The impact of this study consists of testing theories on auditor conservatism. Salterio (2012) focuses on audit delay and negotiation theories concluding that qualified audit opinion, going concern, and material weakness can cause a delay in the issuance of audit report. Brown & Wright (2008) describe audit process, disclosure, ACN stages, showing that ACN pre-negotiation, ACN negotiation, ACN negotiation outcomes depend on auditor characteristics and business environment.

Perreault & Kida (2011) outline auditor's persuasion power in ACN, effectiveness of auditor arguments, communication in audit, proving at the end that the tactic of persuasion determines the client reaction of accepting or not the adjustments indicated by the auditor. Pomeroy (2010) mentions audit investigation and accounting decision finding that ACN does not influence audit investigation.

Further, according to Trotman & Trotman (2010), audit judgements are affected by various factors, namely: auditor judgments, audit demand, quality of audit process, internal audit. Chan et al. (2016) state that audit reporting lags depend on the expertise level of the auditor, on complexity of the audit process, and risks involved, while Bennett et al. (2015) find that audit deadline pressures changes auditor behaviour.

Other research findings suggest that the strategy used by the auditor in the negotiation process affects the attitude of clients, who can accept easier the accounting treatments suggested by the auditor (Perreault et al., 2017). However, Cipriano et al. (2017) comes with a regulation and standardization perspective, as the scholar concludes that compliance with GAAP cannot be negotiated by auditors as it interferes with the qualified audit opinion and decrease in the quality of financial reports. Cheng et al. (2017) find that strategies used previously by auditors in the negotiation process influence current audit strategies. Azmi & Hoong (2014) admit that using the right negotiation strategies leads to tax compliance on a voluntary basis; the level of tax complexity interferes with how aggressive is the tax practitioner in ACN concerning tax aspects. Mustikarini & Adhariani (2022) identifies a research gap in ACN field, although we can find various studies on ACR perspectives, and aims to bring evidence on regions and countries that apply regulation on ACR. All the mentioned research papers contribute to future research, some of them encompassing practical implications, or testing relevant ACN theories.

Ng & Tan (2003), Sanchez et al. (2007), and Wang & Tuttle (2009) prepare their studies based on experimental design. They demonstrate that auditor negotiation impacted by guiding authorities and audit committee (Ng & Tan, 2003), while clients asking for income adjustments in ACN; disclosing more information reduces auditor rotation (Sanchez et al., 2007), and mandatory rotation of audit brings more customers for another auditor (Wang & Tuttle, 2009). Research impacts consists of presenting the steps

of ACN (Ng & Tan, 2003), to understanding the importance of ACN (Sanchez et al., 2007), and finally new research insights for audit rotation determinants (Wang & Tuttle, 2009).

Fu et al. (2011) focuses on experienced versus inexperienced auditors and incurs experimental research to prove that experienced auditors have relevant negotiation skills. Church et al. (2020) describes audit delay, discretionary accruals through a mixture of archival, experimental, and qualitative studies, resulting in the conclusion that narcissism as auditor characteristic cancels any attempts from client to negotiate accounting treatments.

Sun et al. (2015) investigates negotiation strategies, concessions, effective strategies using experimental research, and showing that having concessions at the end of audit process instead of allowing them from the start builds effectiveness, at the same time contributing to future research and enhancing practical implications.

Kachelmeier (2018) demonstrates through experimental design and role playing that face-to-face communication induces the fact that clients intimidate their auditors, and there are more questions from auditor side (increase in auditor skepticism), in comparison to e-mails or electronic communication. Jones (2010) incurs into regression analysis and modelling the interaction between auditors and management, underlining the results of the study: audit processes in which auditors invest allot of time and effort versus the level of income registered by their clients. On the other hand, Jones et al. (2019) find that in most of cases, adjustments are requested by female auditors and less are done at the initiative of by male auditors, while Kulset & Stuart (2018) manage to prove that audit standards precision is strongly correlated with ACN strategies. Awadallah (2018) conducts an experimental study on 152 professional auditors finding that when it

comes to audit conflicts, no ACN strategy is better than the others.

Conclusions

The current research represents a trespassing through ACN literature review from a both qualitative a quantitative study approach. Therefore, we analyzed no less than 37 papers selected from Web of Science.

The qualitative analysis is based on several criteria, namely: ACN subtopics, methodology, results, impact. We presented each one of the 37 papers taking into account the mentioned criteria. First, we started a synthesis research, defining the main ideas from all the publications of our sample. Then, we conducted an in-depth study on each paper, outlining the most relevant ACN aspects. The quantitative analysis comprises top 7 articles with highest level of citation, top 10 authors who published more than one paper in the field of ACN, and top journals that contain more than one publication on ACN. Not least, we presented the distribution of sample papers per region and type of publication.

To sum up, this study outlines literature review elements regarding ACN sphere of research. We use both qualitative and quantitative indicators in order to highlight the relevance of ACN topic since its early research stages. The sample of papers have been selected from Web of Science, and contain relevant citation levels and quotation indices.

Finally, we note the contribution that the current literature review analysis has for future research in the field of ACN topics and those related to it.

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Influence of some Characteristics of Listed Companies on Fiscal Pressure

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Abstract

Numerous studies in the national and international literature highlight the link between fiscal pressure and various characteristics of companies, such as: company size, level of indebtedness, field of activity in which the company operates, level of investments in fixed or current assets, corporate governance and corporate social responsibility index.

In what concerns the link between fiscal pressure and company size, there are two different points of view: one that claims that large companies are subject to greater public scrutiny and therefore bear a "political cost" in the form of higher effective tax rates, and the other which considers that large companies pay less taxes because they allot more resources to tax planning.

This study aims to analyse the extent to which the level of fiscal pressure is influenced by the size of companies in our country, particularly those listed on the BVB (Bucharest Stock Exchange), a characteristic defined by three indicators: turnover, average number of employees and total assets held by companies. Regarding the level of fiscal pressure, the variables used in the analysis include the effective tax rate, calculated using calculation formulas that include both current corporate income tax expense and deferred tax expense. Since corporate income tax is only a part of the total taxes and duties that the company has to bear, the research was extended to an indicator that includes in addition to corporate income tax, other expenses incurred by companies as well, respectively those related to contributions for their employees, but also expenses with other taxes and duties due to the state budget.

Key Words: *effective tax rate; fiscal pressure; company size; turnover;*

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Introduction

For the company, the tax represents a cost with a significant impact on its value, the issue and the importance of corporate income taxation being debated in many economic researches. The interest in determining an effective tax rate results from the fact that corporate income taxation influences a company's profitability by the fact that the corporate income tax decreases the gross profit, but also the cash flows because the corporate income tax is a monetary expense that affects a company's treasury through a cash outflow (Bauman, 2011).

The effective tax rate is considered one of the first measures to avoid corporate income tax (Callihan, 1994). According to this author, the effective tax rate (ETR) has two forms: the average tax rate (average ETR) and the marginal tax rate (marginal ETR). The marginal tax rate is the tax rate paid for an additional unit of profit from a given investment project. This rate (marginal ETR) should be used to investigate the effect of taxation on investment decisions. The average tax rate (average ETR) is more appropriate for expressing the general tax burden of the company because it expresses the tax rate paid on the company's profit.

The effective tax rate quantifies the actual level of tax burden borne by a company, the most widely used calculation formula in many studies (Chen, 2010; Armstrong, 2012; Kraft, 2014) being determined as the ratio between total expenses with taxes and duties and total expenses before payment of taxes and duties.

Nicodeme (2001) calculates the effective corporate income tax rate as the ratio between corporate income tax and turnover, while Gupta & Newberry (1997) calculates this indicator as the ratio between corporate income tax and profit before interests and taxes, respectively as ratio between corporate income tax and operating cash flow.

Chek Derashid & Hao Zhang (2003) calculate the effective tax rate using five calculation formulas, eliminating from the sample the companies with negative effective tax rates.

In his paper on tax evasion, measures and perspectives, Aronmwan (2019) proposes five categories of effective tax rates (ETR) that differ in the calculation method, namely: accounting ETR, current ETR, cash ETR, cash flow ETR and differential ETR.

1. Review of specialty literature

The link between the effective tax rate and the company size has been studied by several authors (Stickney & McGee, 1982; Zimmerman, 1983; Porcano, 1986; Kern & Morris, 1992; Gupta & Newberry, 1997; Kim & Limpaphayom, 1998; Richardson & Lanis, 2007 etc.). In his study, Zimmerman (1993) concluded that large and successful companies are more visible in the market, which is why they are the victims of greater regulatory action. According to this theory, larger companies face higher effective tax rates. However, this theory is contrary to Siegfried's theory (1972), according to which companies with higher resources influence fiscal policies in their favour, engage in tax planning, and organize their activities to achieve savings through tax optimization. Based on this theory, there is a decrease in the effective tax rate in the case of large companies, as a result of political influence. The statement is based on a study on 250 corporations included in the Fortune 500 ranking (the largest US public companies by turnover). The results of the study showed that more than half of the companies, respectively 130 entities did not pay any sum as federal corporate income tax or have received definitive tax relief for at least one of the five years from 1981 to 1985.

In their study on the relationship between the effective tax rate and the company size, Gupta & Newberry (1997) used the following indicators: dependent variable – the effective tax rate calculated as the ratio between the corporate income tax (excluding deferred taxes) and gross profit, and as independent variables: company size (SIZE indicator – established by taking into account total assets at book value) and financial leverage (LEV – measured by reporting long-run debt to total assets). To these variables were added those related to the investment decisions of companies, using the following indicators: the rate of investment in fixed assets (CAPINT – calculated as the ratio between net tangible assets and total assets) and the rate of investment in stocks (INVINT – calculated as the ratio between stocks and total assets). Another category of variables used in the analysis was related to the company's involvement in the research and development activity (RDINT – calculated as the ratio between

research-development expenses and net sales) and the return on assets indicator (ROA – calculated as the ratio between profit before tax and total assets). The results of the study showed that when the analysis is performed over a longer period of time, the indicator of the effective tax rate is no longer correlated with the company size, but with the size of assets and capital.

To Md. Noor (2010), the effective corporate income tax rate is an indicator for calculating the company's fiscal pressure because it summarizes all the tax facilities granted by the authorities, facilities that lead to lower effective tax rates than legal quotas. The research conducted by this author shows that larger enterprises bear higher effective tax rates, and at the level of fields of activity in the trade, services and construction sectors we encounter higher effective tax rates compared to the manufacturing industry and tourism, where the effective tax rate is lower.

However, there are also opposing views, such as that of Derashid & Zhang (2003), who argue that there is a negative correlation between the effective tax rate and the enterprise size while the results of the study by Gupta & Newberry (1997) show that the effective tax rate is not correlated with the enterprise size but with the structure of capital and assets.

Based on the study conducted on a group of 487 German companies over the time horizon 2005-2011, Anastasia Kraf (2014) observes a positive relationship between return on assets, company size and the effective tax rate, highlighting the fact that large enterprises register higher effective tax rates.

2. Research methodology

2.1. Delimitation of the sample and research objectives

The selection of the companies included in the study was made exclusively from the main segment, and from a total of 86 companies listed on Bucharest Stock Exchange (BVB). We eliminated the financial-banking institutions, the financial investment companies as well as the

delisted or suspended companies. Following the selection made, we obtained a database consisting of 62 companies that formed the statistical units. The methods used are exploratory methods of analysis of numerical variables, which allow the synthesis of information contained in a set of data, descriptive and correlation analyses of dependent and independent variables included in the study. Data were collected from the Financial Statements of the sampled companies for a time horizon of 10 years (2011-2020).

In order to fulfil the purpose of the research, the following objectives have been established:

1. Descriptive analysis of the effective tax rate using calculation formulas identified in the national and international literature
2. Descriptive analysis of fiscal pressure
3. Analysis of the characteristics that define the size of the companies listed on the Bucharest Stock Exchange with the help of indicators: average number of employees, total size of assets and level of turnover
4. Establishing correlations between the effective tax rate, respectively the fiscal pressure, and the size of the companies.

2.2. Description of the variables used

In order to analyse the level of taxation of a company, the dependent variables used are: the effective tax rate and the fiscal pressure. The classification of enterprises according to size was made on the basis of Law no. 346 of July 14th, 2004 on stimulating the establishment and development of small and medium enterprises, published in the Official Gazette no. 681 of July 29th, 2004.

According to this law, three criteria are taken into account: the average number of employees, the annual turnover and the value of the total assets.

2.2.1. Effective tax rate

For a more accurate and realistic analysis, the effective tax rate was calculated using four calculation formulas identified in the international literature and detailed in

Table no. 1.

Table no. 1. Formulas for calculating the effective tax rate	
Variable effective tax rate	Calculation formula applied
ETR1	$\frac{\text{Total Tax Expenses (accounts 691+695+698)}}{\text{Earnings Before Taxes}}$ Where: <ul style="list-style-type: none"> • 691= current corporate income tax expenses • 695= activity-specific tax expenses • 698= other taxes not presented in the above elements, respectively micro-enterprise corporate income tax
ETR2	$\frac{\text{Current corporate income tax expenses + deferred taxes + taxes related to uncertainty}}{\text{Gross profit}}$ $\frac{\text{accounts: 691+692+693+695+698}}{\text{Gross profit}}$ Where: <ul style="list-style-type: none"> • 692= Deferred tax expenses • 693 = Corporate income tax expenses, determined by the uncertainties surrounding tax treatment
ETR3	$\frac{\text{Current corporate tax expenses (accounts 691+695+698)}}{\text{Turnover}}$
ETR4 (long run)	$\frac{\sum_{t=1}^n \text{Current corporate tax expenses}}{\sum_{t=1}^n \text{Gross profit}}$

Source: Own processing starting from the calculation formulas identified in the specialized literature

Even if the effective tax rate calculated by any calculation formula is negative due to the fact that the companies record accounting losses (negative gross profit), the statistical units still remained included in the sample with an effective tax rate set at 0%.

Also, the situation of the companies that record both accounting losses (negative denominator) and tax refunds (negative numerator) was analysed, by reporting the two variables (corporate income tax and gross profit) obtaining a positive value. In this case, the amount of the effective tax rate was set at 0% too, because the company did not pay any corporate income tax to the state budget. The companies with tax losses and corporate income tax refunds whose effective tax rate have been set at 0% are: Retrasib S.A. for 2016 and 2020, Bittnet Systems S.A. for 2019, Alro S.A. for 2014 and Impact Developer & Contractor S.A. for the years 2012 and 2013.

There is also the situation in which the financial statements for the entire reference period (years 2011-2020) are not published on the official website of the Bucharest Stock Exchange, which is why the effective

long-run tax rate was related to the number of years for which financial data was collected.

2.2.2 Fiscal pressure

As the contribution of the corporate income tax to the budget revenue is reduced, the calculations that take into account only this indicator for the analysis of the fiscal pressure are not relevant. Specialized literature completes both the numerator and the denominator with variables meant to measure as well as possible the level of fiscal pressure registered by the enterprises.

In order to determine the tax costs, using the data provided in the profit and loss account published by the companies listed on the Bucharest Stock Exchange, main sector, the following were taken into account: corporate income tax expense, corporate or special tax paid by companies in the HORECA sector, other expenses with taxes and duties and expenses related to insurance and social protection to which the reconstituted value of the social and fiscal contributions of the employees was added.

The formula used to calculate the fiscal pressure is as follows (Istrate, 2021):

$$\text{Fiscal pressure} = \frac{\text{Corporate tax expenses (special income)} + \text{Other taxes and fees expenses} + (\text{Employer's contribution} + \text{Employee's contribution})}{\text{Turnover}}$$

Expense on corporate, earnings or special tax is the one that appears explicitly in the profit and loss account prepared by the companies included in the sample and published according to the format imposed by the Ministry of Public Finance. With the exception of HORECA companies, which also record specific tax in addition to corporate income tax, most companies register corporate income tax.

Expenses on taxes, fees and similar expenses include local taxes, contributions to special funds, expenses with other taxes and duties recorded by companies as well as the share of non-deductible VAT spent on expenses. This expense account 635 is included in the profit and loss account in the corresponding line.

Employer's contributions are explicitly included in the profit and loss account, in the corresponding line, accounts 645 and 646 Expenses on insurance and social

protection, and include the contributions borne by the employer, calculated according to the rules in force based on the paid salaries.

Employee's contributions include individual social and tax contributions, recalculated on the basis of gross salaries found in the profit and loss account (account 641 Salaries and allowances). In order to calculate this contribution, we used an indicator, namely the annual percentage share published by INSSE in the table FOM120A Structural indicators in earnings and labour cost statistics, available at <http://statistici.insse.ro/shop/index.jsp?page=tempo3&lang=ro&ind=FOM120A>. For 2019 and 2020, the labour cost is not yet known, but as there have been no changes in the level of salary contributions, we considered this indicator to have the same value as in 2018. The annual percentage share of labour costs published by INSSE for the analysed period (2011-2020) is detailed in **Table no. 2**.

Table no. 2. Labour cost according to FOM120A

2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
43.3%	43.5%	43.4%	43.7%	41.8%	41.4%	41.8%	41.9%	41.9%	41.9%

Source: Own processing, according to <http://statistici.insse.ro/shop/index.jsp?page=tempo3&lang=ro&ind=FOM120A>

2.2.3 Characteristics of the company size

The **SIZE variable** is determined by summing the total assets from the financial statements of the companies

according to the formed by the Ministry of Public Finance published on the official website of the Bucharest Stock Exchange by each company at the end of the financial year.

$$\text{SIZE} = \text{Total Fixed Assets} + \text{Total Current Assets} + \text{Upfront expenditures}$$

The **average number of employees** is taken from the financial statements formed by the Ministry of public Finance, for the reference period 2011-2020. The descriptive analysis revealed that most companies fall into the category of large companies with a number of employees between 250 and 999.

Turnover: The analysis of the company size according to turnover was also carried out on the basis of Law no. 346/2004 with subsequent amendments and additions. In order to set the ceilings in terms of turnover, we used the EURO rate published by the national Bank of Romania on

the last day of each analysed year, the thresholds being set in annual average values.

3. Results obtained

3.1. Descriptive analysis of the effective tax rate

The descriptive analysis of the effective tax rate taking into account the expense with the current corporate income tax on the numerator and the gross profit on the denominator (ETR1) for the reference period 2011-2020 is detailed in **Table no. 3**.

Table no. 3. Descriptive analysis of the ETR1 effective tax rate

ETR1	Minimum values %	Maximum values %	Average %
ETR1_2020	0	41.56	10.39
ETR1_2019	0	153.06	14.01
ETR1_2018	0	85.24	12.14
ETR1_2017	0	50.68	9.41
ETR1_2016	0	53.95	12.9
ETR1_2015	0	86.15	13.35
ETR1_2014	0	74.92	14.17
ETR1_2013	0	150.57	16.13
ETR1_2012	0	66.24	13.80
ETR1_2011	0	71.14	14.50

Source: Own processing in Excel and SPSS

We can observe that on average, the effective tax rate ETR1 is close to the standard tax rate which is 16%, the highest average effective tax rate being in 2013 (16.1347%), the lowest average effective tax rate being in 2017 (9.4056%).

Analysing the effective tax rate according to the second calculation formula (ETR2), respectively taking into account both the current corporate income tax expense and the deferred corporate income tax expense to the numerator and the gross profit to the denominator, we obtained the data presented in **Table no. 4**.

Table no. 4. Descriptive analysis of the ETR2 effective tax rate

ETR2	Minimum values %	Maximum values %	Average %
ETR2_2020	0	41.56	12.60
ETR2_2019	0	170.17	16.66
ETR2_2018	0	85.24	14.08
ETR2_2017	0	54.43	11.00
ETR2_2016	0	53.95	14.42
ETR2_2015	0	86.15	14.87
ETR2_2014	0	15.12	15.12
ETR2_2013	0	170.7	18.76
ETR2_2012	0	66.24	14.31
ETR2_2011	0	71.14	15.14

Source: Own processing in Excel and SPSS

Taking into account both current and deferred tax expense, we can see that the variable ETR2 effective tax rate has increased on average for each reference year by 2 percentage points, very close to the legal tax rate of 16%, consequence of the application of the Financial Reporting Standards. Deferred tax is a consequence of recognizing a company's financial position, holding assets and liabilities as a source of profit or loss, as appropriate.

Therefore, any increase or decrease in the value of a company must be taxed or, on the contrary, taxation must be reduced.

The application of the third calculation formula, respectively, by reporting the current corporate income tax expense to the turnover, highlights a reduced taxation of the companies included in the sample, the results obtained being presented in **Table no. 5**.

Table no. 5. Descriptive analysis of the ETR3 effective tax rate

ETR3	Minimum values %	Maximum values %	Average %
ETR3_2020	0	8.80	1.42
ETR3_2019	0	6.31	1.33
ETR3_2018	0	11.76	1.50
ETR3_2017	0	8.03	1.19
ETR3_2016	0	12.14	1.48
ETR3_2015	0	8.47	1.32
ETR3_2014	0	8.76	1.36
ETR3_2013	0	10.69	1.27
ETR3_2012	0	8.54	1.27
ETR3_2011	0	8.54	1.27

Source: Own processing in Excel and SPSS

Analysing **Table no. 5**, we can see that the share of corporate income tax in the turnover is very small for all reference years (between 1.19% and 1.50%), which makes Romania an extremely attractive country for investments with foreign capital.

The analysis of the effective long-run tax rate (ETR_long_run) reveals an average tax rate of 13.4184%

with a minimum of 0% (companies that record accounting losses) and a maximum of 53.98%.

Analysing the 62 companies included in the sample, we can see that a very high number of companies record either accounting losses or do not have to pay corporate income tax. The analysis of the companies that registered effective tax rates equal to 0 for the analysed reference interval 2011-2020 is presented in **Table no. 6**.

Table no. 6. Descriptive analysis of the ETR4 effective tax rate

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
ETR1=0	22	23	24	18	22	18	24	17	21	22
ETR2=0	20	22	22	18	20	16	21	16	17	20
ETR3=0	22	22	23	18	20	17	18	16	19	18
ETR_long_run	7									

Source: Own processing in Excel and SPSS

From **Table no. 6** we can see that a number of 7 companies did not register positive effective tax rates in any of the years that formed the reference interval taken into account (ETR_long_run in the period 2011-2020).

3.2. Descriptive analysis of the fiscal pressure

As the contribution of corporate income tax to budget revenues is low, calculations that take only this indicator into account for the analysis of fiscal pressure are not relevant, so it is necessary to

include both numerator and denominator variables to better measure the level of fiscal pressure registered by companies.

An analysis of the share of expenses taken into account in determining the fiscal pressure highlights the fact that the share of corporate income tax is reduced compared to the share of expenditure related to salary contributions in turnover.

The descriptive analysis of the fiscal pressure is detailed in **Table no. 7**.

Table no. 7. Descriptive analysis of the fiscal pressure indicator

Fiscal pressure	Minimum values %	Maximum values %	Average %
Pr_fiscala_2020	1.47	368.83	30.61
Pr_fiscala_2019	0.83	206.56	18.03
Pr_fiscala_2018	4.04	109.68	18.77
Pr_fiscala_2017	0.41	99.37	15.34
Pr_fiscala_2016	0.66	61.34	12.81
Pr_fiscala_2015	0.58	32.72	11.01
Pr_fiscala_2014	0.47	31.39	11.21
Pr_fiscala_2013	0.29	27.88	11.16
Pr_fiscala_2012	0.34	27.91	10.70
Pr_fiscala_2011	0.42	51.68	11.16

Source: Own processing in Excel and SPSS

From the descriptive analysis obtained by processing data using the SPSS program we can notice a very high average level of fiscal pressure for 2020, where the level of average fiscal pressure was 30.61%, and a minimum level recorded in 2012 of 10.70%.

Regarding the evolution of the fiscal pressure in Romania in the period 2011-2020 we can observe that for a significance threshold level of 95%: the period 2011-2015 is characterized by a stability of the fiscal pressure level, followed by a progressive increase of this indicator from year to year, 2020 marking an exponential increase in fiscal pressure in most companies listed on the Bucharest Stock Exchange.

The continuous increase in the level of fiscal pressure is positively correlated with the increase in the share of salary contributions in turnover and the increase in expenses with taxes and fees in turnover. Regarding the share of the profit tax in the turnover we can observe that this tax does not significantly influence the level of the fiscal pressure, consequence of its reduced weight in the turnover.

3.3. Descriptive analysis of the indicators that characterize the company size

The classification of enterprises according to size is based on Law no. 346 of July 14th, 2004 on stimulating the establishment and development of small and medium enterprises, published in the Official Gazette no. 681 of July 29, 2004. According to this law, the classification of an enterprise is done taking into account three criteria:

- Average number of employees
- Annual turnover
- Total assets

According to this law, the category of micro-enterprises and small and medium-sized enterprises includes enterprises that have less than 250 employees and have an annual turnover that does not exceed 50 million euros, or that own total assets that do not exceed 43 million euro.

Small enterprises are defined as enterprises that have up to 49 employees and have a net annual turnover or total assets of up to 10 million euros.

Micro-enterprises are defined as enterprises that have up to 9 employees and have an annual turnover or total assets of up to 2 million euros.

Compliance with the thresholds regarding the number of employees is mandatory while a company can choose between respecting either the threshold regarding the turnover in a year or the one regarding the total assets. If the thresholds for the classification of a medium-sized enterprise as defined by Law no. 346 of 2004 with subsequent amendments and completions are exceeded for two consecutive financial years, then the enterprise is considered large.

3.3.1. Descriptive analysis of the turnover

The descriptive analysis of the turnover indicator and its evolution in the period 2011-2020 for the companies included in the analysis was performed using the SPSS program and is detailed in **Table no. 8**.

Table no. 8. Descriptive analysis of the turnover indicator

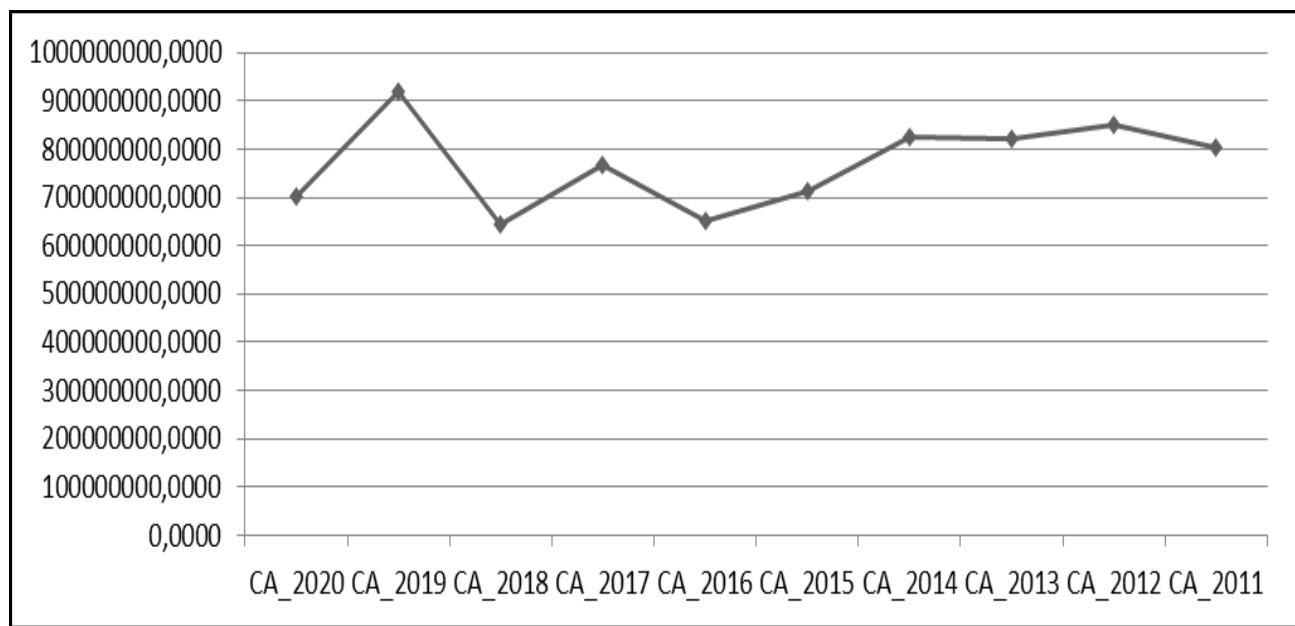
Turnover	Minimum values	Maximum values	Average
CA_2020	330,125	14,795,525,494	701,410,272
CA_2019	235,872	19,793,585,306	920,720,778
CA_2018	630,019	17,817,366,024	645,516,706
CA_2017	1,448,524	14,764,836,448	766,990,014
CA_2016	1,464,691	12,523,026,161	649,835,786
CA_2015	3,839,458	13,687,616,179	713,921,549
CA_2014	4,626,486	16,511,641,496	826,534,877
CA_2013	4,929,292	18,071,913,810	820,429,393
CA_2012	3,811,893	19,510,054,765	849,570,927
CA_2011	4,576,125	16,565,465,973	802,725,341

Source: Own processing in Excel and SPSS

The evolution of the turnover in annual average values for the analysed period (2011-2020) achieved by the

companies listed on the Bucharest Stock Exchange is highlighted in **Figure no. 1**.

Figure no. 1. Evolution of turnover in annual average values for companies listed on the Bucharest Stock Exchange during 2011-2020



Source: Own processing in Excel and SPSS

3.3.2. Descriptive analysis of the average number of employees

Regarding the average number of employees registered by the

companies in the sample, the descriptive analysis performed with the help of the SPSS program is detailed in **Table no. 9**.

Table no. 9. Descriptive analysis of the average number of employees indicator

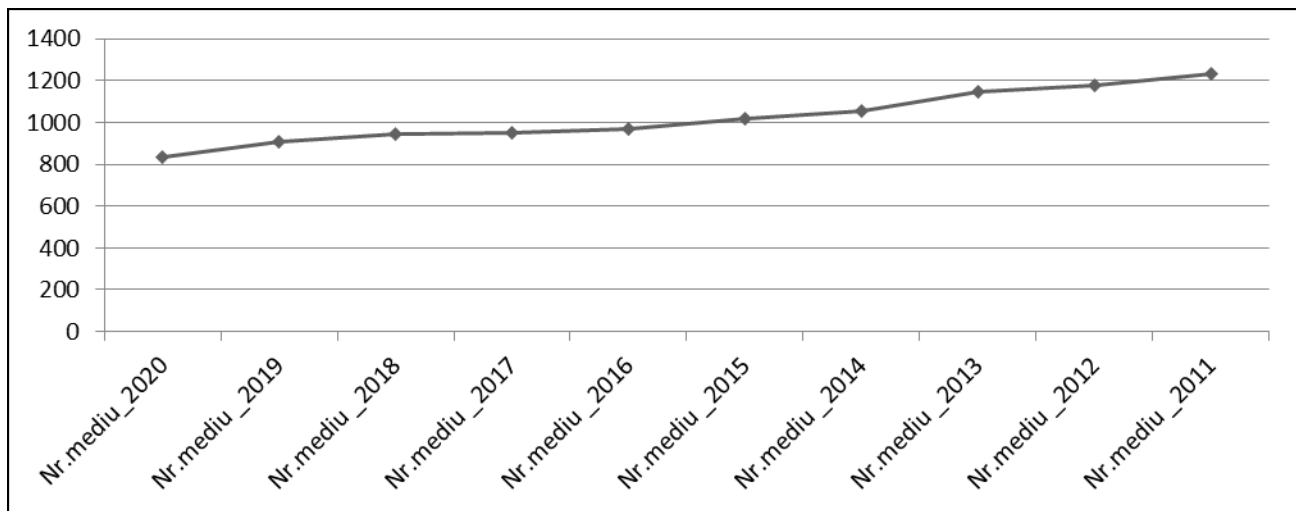
Average number of employees	Minimum values %	Maximum values %	Average %
Nr.mediu_2020	1	10,949	836
Nr.mediu_2019	1	11,814	907
Nr.mediu_2018	4	12,498	944
Nr.mediu_2017	15	13,322	952
Nr.mediu_2016	13	14,380	971
Nr.mediu_2015	9	15581	1,020
Nr.mediu_2014	9	17,866	1,054
Nr.mediu_2013	21	19,016	1,149
Nr.mediu_2012	13	20,508	1,176
Nr.mediu_2011	17	22,052	1,230

Source: Own processing in Excel and SPSS

The average annual number of employees obtained with the help of the SPSS program for a significance threshold of 95% is between 1,230 people in 2011 and 836 people for 2020.

The evolution of the average number of employees in annual average values for the analysed period (2011-2020) for the companies listed on the Bucharest Stock Exchange is highlighted in *Figure no. 2*.

Figure no. 2. Evolution of the average number of employees in average annual values for companies listed on the Bucharest Stock Exchange during 2011-2020



Source: Own processing in Excel and SPSS

From the evolution of the average annual number of employees for the period 2011-2020 we can observe a continuous decline, the average annual number of employees decreasing on average by 10 percent compared to the previous year.

3.3.3. Descriptive analysis of total assets

The size of the companies was also analysed using the SIZE indicator, which represents the total assets of the companies included in the sample. The descriptive analysis of this indicator is performed using the SPSS program and is detailed in *Table no. 10*.

Table no. 10. Descriptive analysis of the Total Assets indicator (SIZE)

Total Assets	Minimum values	Maximum values	Annual average values	Annual average values of Turnover	Share Total Assets in Turnover%
SIZE_2020	10,931,407	46,858,131,207	1,694,145,477	701,410,272	241.53
SIZE_2019	5,805,657	46,260,223,016	1,638,847,675	920,720,778	178.00
SIZE_2018	6,005,336	43,068,031,308	1,580,068,493	645,516,706	244.78
SIZE_2017	8,446,856	41,137,768,266	1,555,969,405	766,990,014	202.87
SIZE_2016	11,132,453	41,238,507,345	1,547,348,796	649,835,786	238.11
SIZE_2015	8,347,999	40,894,532,838	1,576,961,378	713,921,549	220.89
SIZE_2014	5,496,869	43,174,440,529	1,604,272,555	826,534,877	194.10
SIZE_2013	11,988,296	38,894,755,946	1,581,265,295	820,429,393	192.74
SIZE_2012	13,093,573	37,410,862,772	1,539,544,860	849,570,927	181.21
SIZE_2011	12,602,124	35,768,669,507	1,492,403,833	802,725,341	185.92

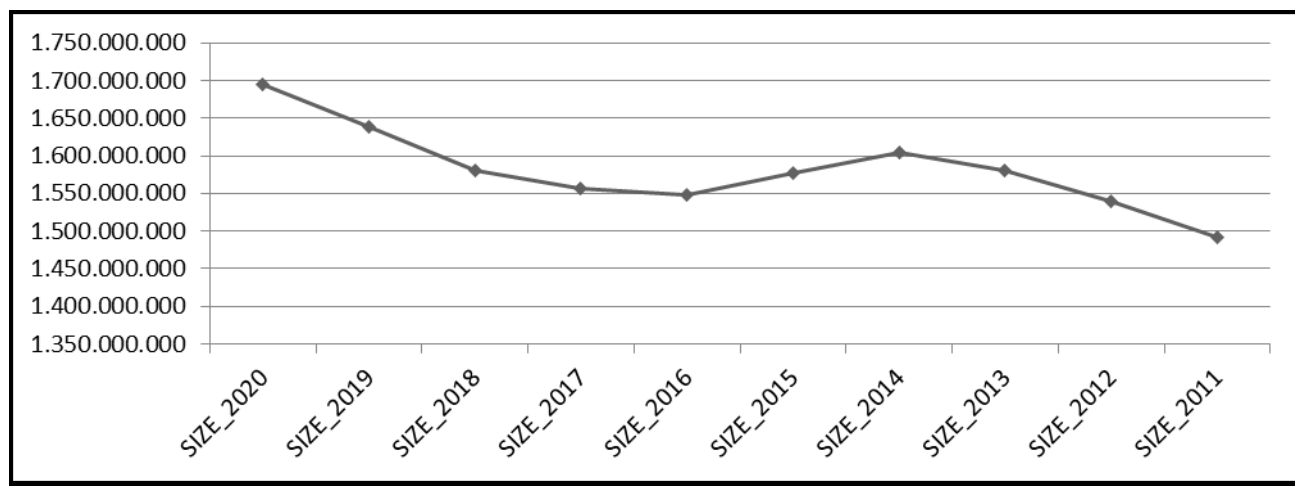
Source: Own processing in Excel and SPSS

Analysing the data from **Table no. 10** we can observe an increase in the share of total assets in the Turnover. The exception is the year 2019 when the share of total assets in the turnover was only 178%, as a result of the level of turnover registered

this year of 920,720,778 lei in annual average values, the highest in the entire analysed period.

The evolution of the SIZE indicator for the companies listed on the Bucharest Stock Exchange for the analysed period (2011-2020) is presented in **Figure no. 3**.

Figure no. 3. Evolution of Total Assets in annual average values for companies listed on the Bucharest Stock Exchange in the period 2011-2020



Source: Own processing in Excel and SPSS

Analysing the chart in **Figure no. 3** we can see a significant increase in total assets held by companies listed on the Bucharest Stock Exchange since 2016 due to investments made by companies in fixed assets.

3.4. Analysis of the correlations between the effective tax rate and company size

In order to analyse to what extent effective tax rate is influenced by the size of the companies, we used the SPSS program to transform the qualitative variables into

numerical variables as follows: 1 medium companies, 2 large companies, 3 very large companies, using the criteria provided in Law no. 346/2004.

The results of the correlations between the effective tax rate and the company size – established by taking into account the turnover – are presented in **Table no. 11**, the results of the correlations between the actual tax rate and the average number of employees are presented in **Table no. 12**, and the results of the correlations between the effective tax rate and the value of total assets are presented in **Table no. 13**.

3.4.1. Analysis of the correlation between the effective tax rate and the turnover

The first indicator taken into account to study the extent to which the company size can influence the level of taxation is turnover. The grouping of companies according to the level of turnover (3 groups: small, medium and large enterprises) allows us to identify the correlations between this indicator and the effective tax rate calculated according to the 4 formulas detailed above.

Table no. 11. Analysis of the correlations between the effective tax rate and the Turnover

Year	Pearson/Turnover correlation coefficient value				Conclusions
	ETR1	ETR2	ETR3	ETR_LUNG LUNG	
2020	0.397*	0.405*	0.114	0.245	Low intensity, positive correlation
2019	0.010	0.034	0.157	0.177	No correlation
2018	0.218	0.207	0.328*	0.182	No correlation
2017	0.292*	0.338*	0.344*	0.077	Low intensity, positive correlation
2016	-0.78	-0.84	0.092	0.073	No correlation
2015	-0.125	-0.180	0.286*	0.051	Low intensity, positive correlation
2014	0.125	0.123	0.242	0.069	No correlation
2013	0.006	-0.017	0.373*	0.127	Low intensity, positive correlation
2012	0.261	0.242	0.291*	0.128	Low intensity, positive correlation
2011	0.250	0.218	0.302*	0.136	Low intensity, positive correlation

Source: Own processing in Excel and SPSS

According to the analysis carried out in SPSS regarding the connection between company size and the effective tax rate (**Table no. 11**) we can conclude the following: the effective tax rate is influenced to a small extent by the company size, which confirms the hypothesis that large companies pay higher corporate taxes.

3.4.2. Analysis of the correlation between the effective tax rate and the average number of employees

From the analysis of correlations, the size of the company measured using the indicator Average number of employees and the effective tax rate (ETR) we can see that between the two variables there is a low intensity, positive correlation, which confirms the hypothesis that large companies pay higher corporate taxes.

According to **Table no. 12**, the company size, measured with the help of the Average number of employees indicator, influences the effective tax rate to a greater extent in 2011, 2012, 2017, as confirmed by the correlations established for 3 calculation formulas, which indicates that in times of economic and financial crisis larger companies pay a higher corporate tax than smaller companies that find faster solutions to reorganize, to restructure the business. The correlation has a medium intensity and is positive, which explains the hypothesis that the larger the enterprises, the higher the level of taxation, but this aspect is valid only in times of economic and financial crisis. In the long run, except for the years 2013 and 2020, there are no correlations between the company size and the effective tax rate, therefore the hypothesis that large companies pay higher corporate tax is not confirmed.

Table no. 12. Analysis of the correlations between the effective tax rate and the average number of employees

Year	Pearson coefficient correlation value				Conclusions
	ETR1	ETR2	ETR3	ETR_LUNG LUNG	
2020	0.374*	0.305*	0.123	0.328*	Low intensity, positive correlation
2019	0.056	0.060	0.135	0.241	No correlation
2018	0.149	0.151	0.202	0.198	No correlation
2017	0.266*	0.308*	0.277*	0.183	Low intensity, positive correlation
2016	0.020	0.038	0.162	0.159	No correlation
2015	0.093	0.060	0.375*	0.193	Low intensity, positive correlation
2014	0.241	0.233	0.328*	0.208	Low intensity, positive correlation
2013	0.124	0.117	0.386*	0.293*	Low intensity, positive correlation
2012	0.449*	0.441*	0.367*	0.231	Low intensity, positive correlation
2011	0.438*	0.414*	0.351*	0.182	Low intensity, positive correlation

Source: Own processing in Excel and SPSS

3.4.3. Analysis of the correlation between the effective tax rate and total assets

The third indicator taken into account to analyse the extent to which the effective tax rate is influenced by the size of the companies is the SIZE or Total Assets indicator coded in

SPSS with values between 1 and 3, corresponding to the 3 categories of companies: small, medium and large. The results of the correlations between the coded SIZE indicator for each analysed year and the effective tax rate (ETR1, ETR2, ETR3 and long-run ETR) are detailed in **Table no. 13.**

Table no. 13. Analysis of the correlations between the effective tax rate and Total Assets

Year	Pearson/SIZE coefficient correlation value				Conclusions
	ETR1	ETR2	ETR3	ETR_LUNG LUNG	
2020	0.479*	0.559*	0.244	0.201	Low and medium intensity, positive correlation
2019	0.104	0.122	0.212	0.201	No correlation
2018	0.172	0.188	0.285*	0.210	Low intensity, positive correlation
2017	0.170	0.248	0.245	0.217	No correlation
2016	-0.028	-0.017	0.168	0.217	No correlation
2015	0.064	0.053	0.345*	0.217	Low intensity, positive correlation
2014	0.141	0.149	0.284*	0.141	Low intensity, positive correlation
2013	0.128	0.185	0.295*	0.249	Low intensity, positive correlation
2012	0.324*	0.295*	0.280*	0.216	Low intensity, positive correlation
2011	0.219	0.209	0.253*	0.169	Low intensity, positive correlation

Source: Own processing in Excel and SPSS

The analysis of the correlations between the effective tax rate and the size of the companies measured using the SIZE indicator confirms the hypothesis that the effective tax rate is

influenced by the size of the companies, but to a small extent. Therefore, even in this case, large companies have higher effective tax rates.

3.5. Analysis of the correlations between the fiscal pressure and the size of the companies

For a more in-depth analysis of the impact of the company size on the level of taxation, the research was extended to a more complex variable, namely the level of fiscal pressure, which takes into account not only current and deferred corporate income tax expenses but also

expenses incurred by companies for their employees. and other expenses with taxes and duties due to the state budget: expenses with dividend tax, local taxes and fees, deductible/non-deductible VAT expenses, etc. The results of the correlations between the fiscal pressure and indicators of the size of the companies for each analysed year are presented in **Table no. 14**.

Table no. 14. Analysis of the correlations between the fiscal pressure and the company size

Year	Pearson coefficient value Fiscal pressure-Size of company			Conclusions
	Average no. of employees	Turnover	Total Assets	
2020	-0.291*	-0.365*	-0.15	Low intensity negative correlation in relation to the average number of employees and turnover
2019	-0.342*	-0.400*	0.072	Low intensity negative correlation in relation to the average number of employees and turnover
2018	-0.214	-0.352*	-0.104	Low intensity negative correlation in relation to the turnover
2017	-0.275*	-0.291*	-0.187	Low intensity negative correlation in relation to the average number of employees and turnover
2016	-0.192	-0.348*	-0.183	Low intensity negative correlation in relation to the turnover
2015	0.187	-0.127	-0.082	No correlation
2014	0.195	-0.084	-0.10	No correlation
2013	0.289*	-0.065	0.004	Low intensity positive correlation in relation to the average number of employees
2012	0.262*	-0.085	0.008	Low intensity positive correlation in relation to the average number of employees
2011	0.133	-0.054	0.021	No correlation

Source: Own processing in Excel and SPSS

According to **Table no. 14**, which summarizes the correlations between the fiscal pressure in annual average values and indicators of the size of companies, we can conclude: between the level of Total Assets and the level of fiscal pressure there is no link for any of the analysed years. In other words, the fiscal pressure is not influenced by the total assets held by the companies listed on the Bucharest Stock Exchange.

For the years 2012 and 2013, we identified a low-intensity, positive correlation between the average number of employees and the level of fiscal pressure, respectively within large companies, with a high number of employees, the level of fiscal pressure is higher.

The situation changes starting with 2016, when between the fiscal pressure and the turnover, respectively between the fiscal pressure and the average number of employees we identify a low intensity, negative correlation,

respectively, the higher the number of employees and the higher the level of turnover, the lower the level of fiscal pressure.

Conclusions

Through this study we tried to verify the existence of a link between the fiscal pressure and the size of the companies listed on the Bucharest Stock Exchange on the main segment.

Studying the literature has allowed us to identify factors that may contribute to influencing the effective corporate tax rate and fiscal pressure, factors that have been included in this research as predictive variables. In order to analyse the level of taxation of companies, we used two variables, namely the effective tax rate calculated by taking into account four formulas identified in the national and international literature and fiscal

pressure. The size of the companies included in the analysis was performed taking into account three indicators: turnover, average number of employees and total value of assets, the data being taken from the financial statements formed by the Ministry of Public Finance for a time horizon of 10 years (2011-2020).

The descriptive analysis of the effective tax rate revealed a low level of taxation of the companies included in the sample with an average tax rate lower than the legal rate in Romania (16%) and a low share of corporate income tax expense in turnover of less than 1.5 percent for all reference years analysed.

Regarding the level of fiscal pressure, we can see that in 2011-2015 its level remained relatively constant, averaging 11 percent, but since 2016 the level of fiscal pressure has increased significantly from year to year, the year 2020 marking the higher level of fiscal pressure, with an average annual value of 30.61%.

In terms of turnover, we can also see a steady evolution in 2011-2014, followed by a decrease in this indicator in 2015-2018, a significant increase in turnover in 2019 followed by a decrease in turnover in 2020 as a consequence of the restrictive measures taken by the Government regarding the activity of many companies.

Within the companies listed on the Bucharest Stock Exchange in the analysed period 2011-2020, we can observe a constant decrease in the average number of

employees. Thus, in 2011, the average number of employees in annual average values was 1230 people, while at the end of 2020 this indicator decreased significantly to 836 people.

Regarding the evolution of the SIZE indicator determined as the sum of fixed assets, current assets and prepaid expenses we can see a steady increase, averaging 10 percent from year to year, which is due to investments made by companies in property, plant and equipment.

The analysis of the correlations between the effective tax rate and company size reveals a low intensity, positive correlation, which corresponds to the hypothesis that large companies pay a higher corporate income tax.

The analysis of the correlations between the fiscal pressure and company size reveals a low intensity, negative correlation, which corresponds to the hypothesis that the higher the companies, the lower the level of fiscal pressure.

In what concerns the limits of our study, we can include the descriptive character of the research, the small sample size of the 62 companies listed on the Bucharest Stock Exchange, the main sector, as well as the low level of representativeness regarding all active Romanian companies. All these limitations constitute future research directions along with the inclusion in the analysis of other factors influencing the fiscal pressure such as: field of activity, corporate governance indicators, audit opinion, etc.

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Navigating the Digital World - the Impact on the New World of Work, A Multigen Perspective

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Abstract

Digital technology impacts the 21st century, and it shapes our lifestyle, the way we think and the way we act. This paper presents aspects of the digital transformation of the workplace and how this process requires the creation and development of new skills and competencies for employees today but especially in the future. In this new context, an essential role is played by education, by educational systems that need to adapt to new requirements, precisely so that educators have the skills needed to be more productive. From this perspective, in the paper, the authors present a teaching and learning method called the TADEO method, which encourages learning the skills needed for Education 4.0. This method is based on a technology support software tool to help teachers build their teaching plan, teaching duration, teaching materials, and assessment method.

Hybrid work is an opportunity that brings new challenges: the work environment is changing rapidly, and automation is replacing human tasks in order for organizations to thrive. Recruitment has become complicated with the digital transformation, and new challenges are emerging for employers as they need people with the skills needed to cope with a changing work environment. The study was conducted on a sample of respondents from a multinational service company based in western Romania, where the accounting department employees were interviewed to see what they think about artificial intelligence, the implications of robots, and the future at work. This research is based on four objectives that have been achieved and three hypotheses that have been tested. The study results showed that about half (43.7%) of the employees who answered this questionnaire worked in the office. Only 28.2% consider themselves very satisfied with the job, and 37.9% see themselves working at the same company for 10 years.

Key words: digital transformation; human resources; generations; jobs; artificial intelligence;

JEL Classification: O15, M15

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Introduction

Digital technology impacts the 21st century, it shapes our lifestyle, the way we think and the way we act. New habits, beliefs and working principles are emerging and developing.

According to experts, the World Economic Forum, jobs will be significantly transformed in the coming years, and individuals with jobs that involve repetitive activities will have to think about a job reset. Today's young people will embrace new professions in 5-10-15 years when the world will already be even more changed and artificial intelligence, robotics, 3D printing, biotechnology, 5G, augmented reality or autonomous transport will become an integral part of our lives (Inaco, 2020).

The jobs of the future will be those that involve human interaction, but also the use of AI technologies.

Currently, employers place more emphasis on soft skills, digital skills, as well as knowledge of working methodologies such as Agile (project management process), Scrum (method of managing program development projects), Kanban (modern management method). The jobs of the future will be different from those of the present because they will allow employees to choose where they want to work, to choose their work schedule and to achieve productivity and efficiency.

Active listening, adaptability, self-discipline, learning autonomy, the ability to collaborate virtually, creativity, empathy, cognitive flexibility, critical thinking, and problem solving, cultural intelligence, collaborative leadership and initiative are increasingly required skills in the job market.

It is a reality that the work environment is changing rapidly: automation and machines are replacing human tasks and work roles, thus changing the skills that organizations need to thrive.

Current and future jobs require technology, but also organizational and process adaptation to make the transition from a traditional to a digital job. Social and technological changes have affected the means of communication, cooperation, and collaboration.

This transformation does not wait for individuals or organizations to be prepared in this regard. The new generation of employees in the labor market will be more in control, more resilient and more comfortable with ambiguity compared to those so far (Abrudan et al., 2021).

Most contemporary researchers perceive the digital workplace as a multidisciplinary concept.

Eckardt et al. (2018) state that among the factors that characterize the new jobs we can mention: the power that has moved from employer to employee and the proactive participation of generations X, Y, Z and R.

The last two decades are recognized by the significant development of information technologies and the changes that they have brought to the labor market at an accelerated pace.

A digital job comes with new challenges allowing employees to cooperate with other employees who are at a relatively long distance or who have a different time zone.

Meske and Junglas (2021) point out that the jobs of the future should focus less on routine operations and more on the effects of digitization, whether positive or negative - in the latter case, for example, negativity and stress.

Attaran et al. (2019) describes a positive effect that is at the core of a digital job, namely the reduction of so-called "time wasters". The costs for transport, for reserving the space in which the individual can carry out his activity, etc. are reduced to a minimum.

1. The impact of digital transformation in education 4.0

According to Norton et al. (2020), the digital transformation consists in a change in the organization of a workplace motivated by emerging digital technologies and innovative business models. It involves more than implementing a technological solution, it is an alignment between digital technologies, human and organizational factors.

According to Mahlow and Hediger (2019), digital transformation is building new skills and competencies through digital technologies in a profound and strategic way.

Generation 4.0 education and jobs need more ways for individuals to put their digital skills, knowledge, and technology into practice. Education 4.0 leads to a new educational paradigm based on the application of relevant skills and the need for improvement and retraining in work (Hong & Ma, 2020).

Among the expected results of education facing the demands of the Fourth Industrial Revolution we can count: the competence of individuals in the field of digital technologies perceived through the prism of an

interconnected and multifaceted world, in which daily improvements are based on new digital technologies (WEF, 2020) and innovative pedagogies to encourage the learner to take an active role in promoting and exercising the skills and attitudes needed in the learning process (Peterson et al., 2018). Education needs to adapt to train students with the skills needed to create a more inclusive, coherent, and productive society (OECD, 2018). Basically, we are talking about educational systems whose mission is to provide learners with the skills needed to build a fairer and more productive world. Schools will build and develop hard skills, such as technological design and resource management, but also soft skills such as communication, empathy, and social awareness, which will ultimately lead to the shaping of inclusive and equitable societies (WEF, 2020). These skills are essential to allow people to progress in a more complex, interconnected and rapidly changing world (OECD, 2019).

Schools need to equip students for jobs and technologies that have not yet been created and to solve problems that have not yet been foreseen (OECD, 2018b). According to the World Economic Forum (WEF, 2020), Education 4.0 is an education open to addressing today's pressing challenges, such as global climate change, ecosystem degradation and depletion of natural resources, and the implementation of new pro-environmental behavior to motivate human commitment and action in solving environmental problems.

Among the main technological factors of the digital transformation in education is the educational software. Barbosa and Souza (2021) present a method based on innovation factors and indicators to guide the development and evaluation of educational software. Such factors and indicators, classified in technology and pedagogy, are associated with the skills and competencies needed for students to learn in the 21st century.

2. TADEO - a method of teaching and learning characteristic for education 4.0

This approach aims to guide the development of teaching and learning experiences given the multidisciplinary nature of the causes and effects of climate change and to encourage the exercise of the skills needed for Education 4.0.

The method is based on the key factors of the digital transformation in education, identified from the analysis of reports produced by international organizations such as the OECD and the WEF. The TADEO method is aligned with the pedagogical processes related to the introduction of the topic of climate change in education and technologically supported by a WEB-based software tool, developed for this purpose.

The technology support software tool for this method, available at <http://tadeo.com.br>, can be used by teachers to help design teaching and learning experiences regarding the use of a set of drivers that lead to digital transformation in education.

The web-based tool offers the following main features: interactive panel with digital transformation factors; building teaching plans by selecting drivers; the purpose of the teaching; duration of activities; the necessary materials and the assessment method to be used; digital storage of student products in teaching and learning experiences; dashboards with the result of self-assessments and reviews by students.

3. Human resources in the digital age - more generations at the same workplace

Individuals are unique in their creativity and ability to bring new solutions to the world's problems. Creativity, ingenuity, entrepreneurship, discoveries are based on the natural state of business (Organization for Economic Cooperation and Development, 2019). Creativity and technology are what are currently making a strong impact on work.

Technology affects people in different cultures, transforming the way they interact, work and develop. This technology is marked by automation, robotics, auto-learning, remote control, databases (cloud databases), cyber-physical systems, virtual reality, voice response devices - all fully integrated into systems that allow intercultural communication, on different meridians of the globe in the same time.

In the new world of work, the hybrid form is offered as a new opportunity that brings many challenges. In general, experts and researchers are beginning to talk about the post-pandemic and digital age that bring with them new rules of labor (People Management Forum, 2021).

The age of globalization encourages companies to embrace and exploit the opportunities presented by digital strategies. The world seems to be without limits, and scientific and technological development is unstoppable.

According to the new Digital 2020 report published by *We are Social* and *Hootsuite*, over 4.5 billion people use the internet, and there were over 3.8 billion users on social media platforms at the beginning of 2020. About 60% of the global population is online and compared to the previous year, the number of internet users increased by about 7%, while the number of social media users increased by 9% (Kemp, 2020).

This information makes us understand why no consensus is reached on the definition of Big Data, despite all efforts. The common reason of all the studies conducted over the last twenty years is that large amounts of data are being produced every day due to digitization, and the most significant database has not yet been reached.

In this world, where data is of great importance, it is essential to raise awareness, facilitate access to data and work on this issue. In addition to the abundance of data, the quality of the data and its processing, the maintenance of its security, the detection of errors and deficiencies and, above all, the ability of employees to be able to manage it becomes very important.

Accelerated digital transformation creates real challenges for employers in recruiting people with the skills, competencies and knowledge needed to adapt and perform in a changing work environment.

The coexistence of generations X, Y and Z on the labor market is a reality that almost every organization lives. Different generations, different perceptions. Different perceptions, which lead to different processes and solutions precisely because each generation has its own perspectives, values, needs and expectations in the workplace. Developing skills and understanding the diversity of the organization can lead to increased quality of performance and employee satisfaction in the workplace. Today, more than ever, we need an organizational culture that is based on collaboration and creativity. And it will be able to transform the existing way of working.

The European survey conducted by the European Center for the Development of Vocational Training (2021, p.11) stated that every fifth European employee must have advanced digital skills, mainly innovation, communication, digital skills and literacy.

The Covid-19 pandemic and its widespread impact have accelerated the demand for digital skills in most occupations in various fields. The share of digital skills in

total demand in online job postings has increased from 20% in 2019 to 23% in 2020 (European Center for the Development of Vocational Training, 2020). This makes digital skills a cluster with the most pronounced change. In addition, the percentage of people with moderate or advanced digital skills varies across countries throughout Europe. For example, in Sweden, Denmark and Norway, the percentage of people with intermediate or advanced digital skills exceeds 40% compared to Bulgaria or Romania, where it is less than 20% (European Center for the Development of Vocational Training, 2020).

4. Case study: the impact on the new world of work, a multigenerational perspective on a company in Romania

4.1 Methodology

The paper aims to analyze the perception of employees of a company in the western part of Romania, who belong to several generations, about the jobs of the future.

This company is a world leader in providing outsourcing services for complex business products and services. It develops integrated and innovative services in areas such as monitoring, mobility, consumer goods, customer experience, industrial technology, business solutions but global services also.

Regarding the methodological design, we opted for the research method based on sociological survey, a quantitative method, in-depth research, involving the questioning of a representative number of individuals with accurate and statistically analyzed data using the survey as a working tool. We opted for quantitative research to collect data from employees from different backgrounds, with different ages, to see what they think about this digital transformation.

In our opinion, a study that has heterogeneous responses from a relatively large sample with different opinions is more eloquent than a study based on a relatively small number of samples, that tend to be subjective.

Objectives:

1. Identifying the work regimen of employees in this company
2. Analysis of the degree of satisfaction with the current job of employees.

3. Identifying the perception of employees by different age groups regarding artificial intelligence.
4. Measuring the level of confidence of employees about the implications that robots could have in the future.

Hypotheses:

1. There are significant differences between backgrounds in adapting to new changes.
2. There are significant differences between the gender of respondents in terms of artificial intelligence.
3. There are significant differences between the gender of respondents as to what the jobs of the future will offer.

The concepts behind this study are the digital world and the impact of the transformation of digital work. The questionnaire was developed online through the *Google Forms* platform (<https://docs.google.com/forms/u/0/>) to facilitate division into items.

The employees of the company from the west of the country were also chosen as a research sample because in this company, work is done from home office, in hybrid mode, but is also carried out in the office.

The questionnaire was distributed to the company's accounting department. It was applied between December 3, 2021 - January 11, 2022.

The questionnaire consists of a single dimension that measures the perception of employees in a company in western Romania about future jobs. It comprises 13 questions, 12 closed-ended and one open-ended, the last three questions being factual questions. Likert scale was

used from 1 ("I adapted easily") to 4 ("I couldn't adapt"). A single grid with multiple response variants has been added that measures the perception of the implications that robots will have in the future (will replace current jobs, retraining, how people will react to this revolution, how corporations will act at the time of their appearance).

The limit of the research is the inequality between the groups; the questionnaire was completed to a greater extent by female respondents than by male respondents.

The questionnaire consisted of 13 variables and it was sent to a total of 168 employees at the accounting department, of which 126 were female and 42 were male. 103 employees (61.3%) answered the questionnaire.

With the help of *IBM Statistics*, frequency, descriptive, correlation, media comparison and Independent T Test analysis were performed.

4.2 Results

4.2.1 Descriptive analysis - general aspects

Examining the responses received, we observed that 23 of the total respondents (103) are part of generation Z, 51 are part of generation Y, and 29 are part of generation X. Regarding the perception of generations regarding artificial intelligence, generation Z considers that it has a strong impact on humans, generation Y believes that artificial intelligence is necessary to protect us from cyber-attacks, and generation X believes that it is increasingly present in our daily lives.

To begin with, we performed a descriptive analysis on the variable "Gender" to demonstrate the limit of the research, the inequality between the groups of respondents.

	Gender	N	Average	Deviate from the standard	Standard error
Implications	female	61	10.33	2,300	0,295
	male	42	9.52	2,822	0,435

Source: Authors' processing, 2022

From **Table no. 1**, we can see the inequality between the groups: 61 female respondents and 42 male respondents. A study by the European Institute for Equal Opportunities between Women and Men shows that 9 out of 10 girls / boys (16-24 years old) have enough skills to use digital technologies, but the difference between them is self-confidence. Boys are more

confident about digitization, with 73% of all male respondents trusting their digital skills compared to girls, where the percentage is 63% out of all female respondents from the same age group.

As previously mentioned, 23 of the total respondents (103) are part of generation Z, 51 are part of generation Y, and 29 are part of generation X.

For the first variable, we performed a frequency analysis | to see where the respondents work.

	Frequency	Percentages	Valid percentage	Cumulative percentages
	45	43.7	43.7	43.7
Home office	34	33.0	33.0	76.7
In hybrid mode	24	23.3	23.3	100.0
Total	103	100.0	100.0	

Source: Authors' processing, 2022

From **Table no. 2**, it is observed that 43.7% of all respondents work from the office, 33% work online from home and only 23.3% answered that they work in hybrid mode.

For the second variable, we also performed a frequency analysis to measure the degree of satisfaction of the respondents regarding their current job.

	Frequency	Percentages	Valid percentage	Cumulative percentages
I'm satisfied	15	14.6	14.6	14.6
I am very satisfied	29	28.2	28.2	42.7
I'm less satisfied	27	26.2	26.2	68.9
I'm dissatisfied	20	19.4	19.4	88.3
I am very dissatisfied	12	11.7	11.7	100.0
Total	103	100.0	100.0	

Source: Authors' processing, 2022

From **Table no. 3** it can be seen that 28.2% representing the majority, consider themselves very satisfied with their current job and only 11.7% of the total respondents, representing a small proportion, consider themselves very dissatisfied.

To the question "In 10 years, you personally see yourself working in this company?" We performed a frequency analysis to see how the answers are divided in terms of the perception of work in the future also in this company.

	Frequency	Percentages	Valid percentage	Cumulative percentages
Yes	39	37.9	37.9	37.9
Not	40	38.8	38.8	76.7
I don't know / I don't answer	24	23.3	23.3	100.0
Total	103	100.0	100.0	

Source: Authors' processing, 2022

Regarding the future in this company, as one can see in **Table no. 4**, opinions are divided, largely representing 38.8% of all respondents do not see themselves working in this company, 37.9% of all respondents see themselves working in this company in 10 years, and 23.3% did not comment on an answer to this question.

In the following we conducted an Independent t Test to demonstrate whether there are differences of opinion regarding the appearance of robots and the implications of new technology on employee perception. The results were summarized in **Table no. 5**.

Table no. 5. Robot implications

Leven's test for equality of variations			T test for equality of means				95% confidence interval of the difference			
Implications	F	Threshold	t	df	Significance threshold	Differences in environments	Standard error	lower	higher	
Equally proposed variants	1,607	0,208	1,588	101	0,115	0,804	0,506	-0,200	1,808	
Equally unproposed variants			1,530	76,197	0,130	0,804	0,526	-0,243	1,851	
What implications do you think the robots will have?							Answers		Percentage of cases	
							N	pro-percentage		
	They will replace jobs that require repetitiveness						33	41.8	60.0	
	Retraining						10	12.7	18.2	
	How people will react to this evolution						16	20.3	29.1	
How corporations will act when they emerge						20	25.3	36.4		
Total						79	100.0	143.6		

Sursă: Prelucrările autorilor, 2022

In order to be able to perform the Independent Sample Test, we recorded the variable "What implications do you think they will have? (robots)". Performing the test t, we noticed that the significance threshold of the Levene test $P = 0.208$, is greater than 0.05, so we will refer to the first line of the test t, the value of the test t, $t(101) = 1.588$, $p = 0.115$, $p > 0.05$. The result of the test shows that we have significant differences in the choice of respondents regarding the implications that robots could have in the future.

The second part of the table confirms that we have significant differences in respondents' views on the implications, with 41.8% representing the concern of

current employees performing repetitive work. 25.3% are worried about how the company will act when the robots appear, and the fewest of them think about re-training (12.7%).

4.2.2 Hypothesis testing

This variable measures the degree of adaptability of employees to the new changes caused by the pandemic. We measure the first hypothesis of this study. "There are significant differences between the backgrounds in adapting to new changes."

Table no. 6. New changes caused by the pandemic

		urban	rural	total
On a scale of 1 to 5, how do you assess the new changes caused by the pandemic?	I adapted easily	9	8	17
	I adapted	13	7	20
	I tried to adapt	8	7	15
	I haven't really adapted	20	10	30
	I haven't adapted yet	13	8	21
Total		63	40	103

Source: Authors' processing, 2022

We made a correlation with the environment of the respondents and included the results in **Table no. 6**. We can see that 63 of the total sample come from urban areas and 40 from rural areas. The largest proportion of respondents in urban areas (20) and respondents in rural areas (10) did not adapt very well to the new changes.

Therefore, *the first hypothesis of the research is confirmed*, there are significant differences between the backgrounds of the respondents concerning the adaptation to the new changes.

We are going to test the second hypothesis – *There are significant differences between the respondent's gender in terms of artificial intelligence* – of the research using the variable: "What do you think about artificial intelligence? "

		Female	Male	Total
What do you think about artificial intelligence?	It is present in our daily lives	26	16	42
	It has a strong impact on humans	21	13	34
	Helps fight cyber attacks	14	13	27
Total		61	42	103

Source: Authors' processing, 2022

In terms of artificial intelligence, as we can see in **Table no. 7**, a large proportion of female employees (26) consider it to be more and more present in our daily lives, while male employees consider this to be almost double (42). Therefore, we find different proportions in what female employees and male employees perceive the usefulness of artificial intelligence has that can help combat cyber-attacks.

Our hypothesis is confirmed because there are significant differences between the groups of respondents in terms of artificial intelligence.

Finally, we test the third hypothesis – *There are significant differences between the gender of respondents regarding what a future job will offer* – using the variable "Jobs of the future in your opinion will provide:"

		Female	Male	Total
In your opinion, the jobs of the future will provide:	Flexible jobs	16	8	24
	Productivity	13	10	23
	Efficiency	6	9	15
	The freedom to choose to work where you want	13	7	20
	The opportunity to develop professionally	13	8	21
Total		61	42	103

Source: Authors' processing, 2022

In **Table no. 8** we can see a ranking of answers by groups of respondents.

Male respondents rank productivity in first place, and in the opinion of female respondents, flexible jobs come first. Women consider in equal proportions that the jobs of the future will bring productivity, an opportunity to develop professionally, but also freedom in choosing a job, and on the last place in the

ranking, female employees chose efficiency. Men rank efficiency second place, flexible jobs and the opportunity to develop third place, and last in the ranking of the men's group is the freedom to choose where to work. As a result, *our hypothesis is partially confirmed*, because there are differences, but not significant, between the gender of the respondents and their opinion on what the future jobs will offer.

5. Conclusions

In the digital age, people can make a difference. Employees continue to be at the heart of the digital transformation. It is crucial to understand at all levels that it is vital to appreciate people and their creative and professional abilities, especially nowadays when it becomes increasingly difficult to identify what motivates employees to be fully dedicated and involved to achieve the desired results. Therefore, in order to stimulate their involvement and performance, we need to create and develop a specific way of thinking in which technology can be harmonized with human nature. Managers of organization need to understand that digital transformation requires a holistic approach that focuses on the employee.

The targets of the research have been achieved.

They aimed to identify how some of the employees of a company in the western part of Romania work, to analyze their satisfaction with their current job, to reflect the opinion of the respondents according to generations on artificial intelligence and the measure of the confidence level of the employees of this company regarding the appearance and implications of robots.

It has been identified that most respondents in this case study are from Generation Y, and their views on the implications of artificial intelligence reflect the fact that it is beneficial to society as it helps to prevent cyber-attacks.

The results of the case study show that approximately half (43.7%) of the respondents to this questionnaire work in the office and only 28.2% consider themselves very satisfied with their current job, and 37.9% see themselves working in this company in 10 years.

Regarding the future implications of robots, 41.8% of all respondents believe that they will replace jobs that require repetitiveness, but even in this context only 12.7% think of retraining.

The hypotheses that are the basis of this study are confirmed in the sense that there are significant differences in gender regarding artificial intelligence, significant differences in gender regarding adapting to new changes, and less significant differences in gender of respondents regarding what a job will offer in the future.

The limits of the research consist in the access to only one department of the company, as well as the gender inequality between the groups, being more female employees at the Romanian branch of the studied company. Another limitation of the research is the structure of the questionnaire, which was built very formally, succinctly precisely to obtain a higher rate of completion and for employees to stay interested.

Given that the study was conducted in the accounting department of a company with a subsidiary in western part of Romania, in the future we want to expand the study in all departments to see what is the opinion of employees on artificial intelligence. This would help to generalize the results obtained and to identify a general opinion of the company's employees regarding the future of work.

Moreover, we want to conduct a larger study to build a tool that can measure employee satisfaction with the advantages and disadvantages of digitalization, but also to highlight its impact on employees and to identify the number of employees in this branch who are willing to work with robots.

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