

The Impact of Covid-19 on the Type of Auditor's Opinion: Evidence from the Largest Non-Listed Portuguese Companies

Kátia Lemos, Sara Serra and Andreia Freitas

Research Centre on Accounting and Taxation, School of Management, IPCA, Barcelos, Portugal

klemos@ipca.pt

sserra@ipca.pt

aandreaa.f2010@gmail.com

Abstract: In 2020, the world was surprised by a pandemic caused by Covid-19, which emerged and devastated the entire world economy, forcing several companies to adapt to a new health reality that affected the lives of people and the companies themselves, forcing the population to adapt. In this follow-up, the present research arises with the aim of analysing the impact of Covid-19 on the Audit Report of the largest Portuguese unlisted companies, namely regarding the type of opinion. This research included the analysis of 114 audit reports, referring to the years 2018 (pre-pandemic), 2020 (during pandemic) and 2022 (post-pandemic) of the largest and best Portuguese non-listed companies, according to Exame Magazine for the year 2022. The data were collected through a content analysis of the Audit Reports of these companies, and then statistically treated through a bivariate analysis using association tests between the variables (dependent and independent). The results obtained proved that Covid-19 did not significantly influence the type of opinions issued. However, we were able to verify that there is a lower probability of the Big four firms issuing modified opinions. This study, in a way, contributed to the literature on this topic, clarifying some impacts of the pandemic on audit work, as well as the impacts of other variables on the Audit Reports.

Keywords: Auditing, Audit reports, Covid-19, Type of opinion

1. Introduction

The Covid-19 pandemic emerged and devastated the entire global economy, forcing many companies to adapt to a new public health reality that affected both people's lives and business operations, requiring the population to readjust.

The Covid-19 pandemic not only impacted individuals and businesses but also influenced audit work, including audit planning, physical inventory counting, and the emergence of new audit and fraud risks. Consequently, auditors had to adapt to the new reality in order to obtain sufficient and appropriate audit evidence.

The purpose of this study is to analyse the impact of Covid-19 on the audit reports of the largest non-listed Portuguese companies, as listed in the *Revista Exame 2022*, published in 2023, considering the type of opinion issued by the auditor. Additionally, the study also aims to examine other variables associated with auditing, such as audit firm rotation, the type of audit firm (Big Four or non-Big Four), and the existence of an audit committee.

To achieve this objective, we analysed 114 audit reports of the largest non-listed Portuguese companies, covering the years 2018 (pre-pandemic), 2020 (pandemic), and 2022 (post-pandemic). The choice to focus on non-listed companies represents an innovative aspect of this study, given that there is already existing research on the impact of Covid-19 on the audit reports of listed companies. A mixed-method approach was adopted for the investigation: a qualitative method was used to extract as much information as possible from the content analysis of the audit reports, while a quantitative method was employed for data processing.

2. Literature Review and Research Hypotheses

2.1 Audit Firm Rotation

The Sarbanes-Oxley Act, introduced following major financial scandals involving U.S. audit firms, mandated auditor rotation every five years to enhance audit quality (Martani et al., 2021). Several authors argue that both auditor and audit firm rotation can improve audit quality (Ball & Tyler, 2015; Hurley et al., 2018; Kim et al., 2019). However, despite its widespread use as an audit quality indicator, the effects of auditor rotation remain subject to debate.

Ghosh and Moon (2005) distinguish two opposing views on auditor tenure: the regulatory view and the auditor-expertise view. The regulatory perspective argues that long-term engagements may reduce auditor independence, with prolonged relationships increasing auditor leniency. From this angle, audit quality tends to decline over time. Conversely, the auditor-expertise view suggests that extended tenure enhances auditors' familiarity with the client's operations, improving their ability to detect misstatements. Nevertheless, the same

authors highlight that audit failures are more likely during the initial years of an engagement due to insufficient client knowledge.

DeFond and Francis (2005), and Carey and Simnett (2006), also caution that long-term auditor–client relationships may compromise audit quality. Brito (2021) reinforces this concern, pointing to the widespread belief that extended audit engagements reduce independence and impair audit reliability.

According to Teh et al. (2016), auditor rotation is vital for ensuring regulatory compliance and bringing innovation to audit procedures. Similarly, Costa et al. (2013) argue that audit quality is linked to the likelihood of issuing modified audit opinions, suggesting that rotating audit firms may increase such outcomes.

In light of the findings of the aforementioned studies, the following research hypothesis was formulated:

H1: Audit firm rotation influences the type of opinion issued by the auditor in the audit report.

2.2 Type of Audit Firm: Big Four or Non-Big Four

Several studies show that the type of audit firm affects audit quality, with Big Four firms generally seen as providing higher-quality services due to their presumed superior technical expertise (DeAngelo, 1981; Serra & Lemos, 2020). This perception is supported by literature claiming that Big Four firms offer better quality audits compared to non-Big Four firms (Martani et al., 2021), largely because of their scale, structure, and capacity to implement standardized methodologies, robust training programs, and quality control procedures (Lawrence et al., 2011).

DeAngelo (1981) defines audit quality as the likelihood of detecting and reporting material misstatements. Detection is tied to technical skill, while reporting reflects auditor independence. Both dimensions are shaped by competence, procedures, and audit scope.

Empirical research, such as that by Wuttichindanon and Issarawornrawanich (2020) and Ferreira and Morais (2020), suggests a relationship between audit firm type and the issuance of modified audit opinions and inclusion of Key Audit Matters (KAM), with some studies indicating Big Four firms are more likely to issue KAMs. However, findings are mixed.

Contrary evidence comes from Simão et al. (2017), who found that non-Big Four (national) firms issue more modified audit reports. Costa et al. (2013) reached similar conclusions, reinforcing that national firms are more inclined to issue modified opinions.

In the Brazilian context, Marques et al. (2018) analysed audit reports between 2002 and 2012 and concluded that Big Four firms were less likely to issue modified opinions. Their study also revealed that factors such as emphasis paragraphs, company size, losses, and partial IFRS adoption increase the probability of modified opinions. Similarly, Castro et al. (2017) reported a greater incidence of modified reports from non-Big Four firms.

Given this context, it is expected that the type of audit firm influences the auditor’s opinion, leading to the formulation of the following research hypothesis:

H2: The type of audit firm (Big Four or non-Big Four) influences the type of opinion issued by the auditor in the audit report.

2.3 Audit Committee

The emergence of financial scandals has increased stakeholder demand for transparent and reliable financial reporting. In Portugal, audit committees were introduced in 1999 through Portuguese Securities and Exchange Commission Corporate Governance Recommendations for listed companies (Serra & Lemos, 2020).

Under Article 423-B of the Portuguese Commercial Companies Code (CSC), audit committees must be composed of at least three board members. For listed companies, members must be independent, and at least one must hold a relevant degree and demonstrate knowledge in auditing and accounting.

Moeller (2015) describes audit committees as independent bodies composed of qualified individuals who oversee internal control and organizational processes. According to López et al. (2011), companies that aim to ensure financial information reliability benefit from both external independent auditors and independent audit committees. DeZoort et al. (2002) similarly argue that committee independence correlates with higher-quality auditors.

However, the empirical evidence remains inconclusive. Medeiros et al. (2015) found no support for the hypothesis that companies with audit committees are more likely to receive unmodified audit opinions without emphasis paragraphs, though this contradicted expectations. Costa et al. (2013) also found no strong association between audit committees and the auditor's opinion and noted a tendency for unmodified opinions when such committees were absent.

In light of the studies presented, the following research hypothesis was formulated:

H3: The existence of an audit committee influences the type of opinion issued by the auditor in the audit report.

2.4 Presence of Covid-19

In 2020, the Covid-19 pandemic disrupted global life and business, forcing companies to rapidly adapt to an unfamiliar reality. Albitar et al. (2020) describe it as the most disruptive event to audit practices since the 2007–2008 financial crisis.

Bob Moritz, Chairman of PwC, noted that auditing during the pandemic became more complex than ever (Financial Times, 2020), as auditors struggled to assess going concern assumptions and the reliability of financial statements. The IESBA (2020) highlighted increased societal expectations and pressure on auditors, urging them to reassess risks and refine procedures to maintain independence. Auditors were thus required to adopt clear planning, strict timelines, and rely on qualified professionals to ensure smooth information flow (Silva & Almeida, 2022).

Kaka (2021) identified several audit challenges during this period: restricted access to inventory counts, lack of evidence, going concern uncertainty, and a rise in KAM, all frequently addressed through emphasis paragraphs in audit reports.

However, empirical results vary. Hay et al. (2021) concluded that the pandemic had no significant impact on audit reports or financial statements, although it accelerated the shift from traditional audit methods to digital tools and artificial intelligence. Hazaea et al. (2022) noted that this transformation improved auditor–client communication.

In Portugal, Rebocho (2022) analysed listed companies and found that while many audit reports included emphasis paragraphs referencing Covid-19, the pandemic was not cited as a reason for issuing modified opinions. This suggests that although the pandemic altered audit processes, its effect on the final audit opinion may have been limited.

Based on the evidence presented, the following research hypothesis was formulated:

H4: The presence of Covid-19 influences the type of opinion issued by the auditor in the audit report.

3. Research Methodology

This study investigates the impact of Covid-19 on the audit reports of the largest non-listed Portuguese companies. The pandemic raised critical concerns not only about corporate performance but also about audit practices—such as audit planning, inventory verification, and emerging risks of fraud—prompting auditors to adapt and ensure sufficient audit evidence.

The research focuses on three key years: 2018 (pre-pandemic), 2020 (during the pandemic), and 2022 (post-pandemic), aiming to evaluate how Covid-19 influenced the type of audit opinion issued.

In addition to the pandemic, the study examines the potential influence of auditor-related variables: audit firm rotation, the type of firm (Big Four or non-Big Four), and the presence of an audit committee.

A mixed-method approach was used: qualitative document analysis of audit reports and quantitative data processing. The reports were sourced from the websites of companies listed in *Revista Exame's* 2022 ranking of Portugal's 500 largest firms.

Reports were reviewed to identify the type of opinion and other relevant information. Data were then statistically analysed using SPSS (Statistical Package for the Social Sciences), through bivariate analysis. Association tests were applied between the dependent variable (audit opinion) and the independent variables.

All variables were treated as binary: 0 for absence and 1 for presence. This classification helped assess whether the proposed hypotheses explain variations in the audit opinions issued.

Table 1: Variables under study

Dependent variable		
Variable	Measure	
Type of auditor opinion	0: Unmodified; 1: Modified	
Independent variables		
Hypothesis	Variable	Measure
H1	Audit firm rotation	0: No; 1: Yes
H2	Type of audit firm	0: Non-Big four; 1: Big four
H3	Audit Committee	0: No; 1: Yes
H4	Presence of Covid-19	0: No; 1: Yes

For this study, audit reports were collected from the websites of the 500 largest non-listed Portuguese companies, as listed in *Revista Exame* 2022 (published in 2023). Reports from the years 2018 to 2022 were extracted in descending order.

Exclusion criteria included listed companies, firms that did not publish audit reports for any of the target years, and those that only disclosed consolidated reports, as individual analysis was not possible.

After applying these criteria, data were obtained from 38 companies. A total of 190 reports were initially gathered for the years 2018, 2020, and 2022. From this, a final sample of 114 individual audit reports was selected—corresponding to the pre-pandemic (2018), pandemic (2020), and post-pandemic (2022) periods.

4. Presentation and Discussion of Results

4.1 Descriptive Analysis

In Table 2, we observe the type of opinion issued by auditors, noting that 75 (66%) of the audit reports were unmodified opinions, while 39 (34%) were modified opinions. It is evident that the year 2020, compared to the other years, recorded a lower number of audit reports with modified opinions.

Table 2: Dependent variable analysis

		Frequency (%)	2018 (%)	2020 (%)	2022 (%)
Type of opinion	Unmodified	75 (66%)	24 (21%)	26 (23%)	25 (22%)
	Modified	39 (34%)	14 (12%)	12 (11%)	13 (11%)

4.2 Bivariate Analysis

At this stage, we present the results of the bivariate analysis.

Initially, by analysing the relationship between the type of opinion and audit firm rotation, we observe that the impact of the latter is not very significant, corresponding to 13 (11%) of the audit reports analysed. However, only 5 (4%) of these reports showed a modified opinion when there was a change in audit firm, as shown in Table 3. Additionally, the same table reveals that the number of modified opinions issued is higher when there is no audit firm rotation.

Table 3: Relationship between the type of opinion and the rotation of the audit firm

		Type of opinion		Total (%)
		Unmodified (%)	Modified (%)	
Audit firm rotation	No	67 (59%)	34 (30%)	101 (89%)
	Yes	8 (7%)	5 (4%)	13 (11%)
Total (%)		75 (66%)	39 (34%)	114 (100%)

Given that, regarding the type of opinion, the expected number of observations does not meet the minimum requirement of 5 observations per cell in the cross-tabulation for applying the Chi-square test, the results of Fisher’s Exact Test should be considered. According to Table 4, the p-value is greater than 0.05, confirming that there is no association between the two variables under study.

Table 4: Chi-square and Fisher's exact tests - type of opinion vs. rotation of the audit firm

	Value	Df	Asymptotic significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.118 ^a	1	.731		
Continuity correction	.001	1	.974		
Likelihood ratio	.116	1	.733		
Fisher's exact test				.762	.477
Valid cases (N)	114				
1 cell (25%) had an expected count less than 5. The minimum expected count was 4.45.					

The results of the association measures between these two variables also show a p-value greater than 0.05, as presented in Table 5. Thus, it is confirmed that there is no association between the variables, since both significance values are above 0.05.

As a result, this outcome does not support Hypothesis 1, which proposed that audit firm rotation influences the type of opinion issued by the auditor in the audit report. This finding contradicts the study by Costa et al. (2013), which suggested that audit firm rotation increases the likelihood of modified opinions. Therefore, it is concluded that the existence of audit firm rotation does not influence the type of opinion issued by the auditor.

Table 5: Measures of association - type of opinion vs. rotation of the audit firm

		Value	Approximate significance
Nominal by Nominal	Fi	.032	.731
	Cramer's V	.032	.731
Valid cases (N)		114	

Next, by analysing the relationship between the type of opinion and the audit firm, we observe that a total of 39 (34%) audit reports were issued with a modified opinion. Among these, the majority were issued by non-Big Four firms, specifically national audit firms, which accounted for 26 (23%) of the modified opinions, as shown in Table 6.

Table 6: Relationship between type of opinion by audit firm

		Type of opinion		Total (%)
		Unmodified (%)	Unmodified (%)	
Type of audit firm	Não-Big four	27 (24%)	26 (23%)	53 (46%)
	Big four	48 (42%)	13 (11%)	61 (54%)
Total		75 (66%)	39 (34%)	114 (100%)

The results in Table 7 show an association between the type of opinion and the type of audit firm, as both the Chi-square test and Fisher’s Exact Test returned a p-value < 0.05. This result is further supported by the association measures presented in Table 8.

Table 7: Chi-square and Fisher's exact tests - type of opinion vs. type of audit firm

	Value	Df	Asymptotic significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	9.700 ^a	1	.002		
Continuity correction	8.506	1	.004		
Likelihood ratio	9.815	1	.002		
Fisher’s exact test				.003	.002
Valid cases (N)	114				
0 cells (0.0%) expected a count less than 5. The minimum expected count is 18.13.					

Considering the association tests—Cramér’s V and the Phi coefficient—the association is negative, as shown in Table 8, indicating that the relationship is not strong. In other words, it can be concluded that companies audited by Big Four firms are less likely to receive a report with a modified opinion.

Therefore, these results support the validation of Hypothesis H2, which proposed that the type of audit firm (Big Four or non-Big Four) influences the type of opinion issued by the auditor in the audit report. In this case, it was the non-Big Four firms that were responsible for issuing most of the audit reports with modified opinions, confirming the findings of Costa et al. (2013), Castro et al. (2017), and Ponte et al. (2020), who also concluded that non-Big Four firms are more likely to issue a modified opinion.

Table 8: Measures of association - type of opinion vs. type of audit firm

		Value	Approximate significance
Nominal by Nominal	Fi	-.292	.002
	Cramer’s V	.292	.002
Valid cases (N)		114	

From Table 6, we observe that companies showed a preference for the audit services of Big Four firms, possibly because these firms provide higher-quality audits due to their structure and scale (Lawrence et al., 2011). For this same reason, they deliver high-standard audit services to maintain their reputation and brand image (Dopuch & Simunic, 1980).

In the study by Costa et al. (2013), it is noted that the existence of an audit committee does not show a strong association with the opinion issued by the auditor. Moreover, when no audit committee is present, there is a tendency for the issuance of unmodified audit reports. Similarly, in the present study, the number of unmodified audit reports is higher among companies without an audit committee. Table 9 shows that 75 (66%) unmodified audit reports were issued, of which 26 (23%) were from companies with an audit committee, while the remaining 49 (43%) had no such body.

Table 9: Relationship between type of opinion and audit committee

		Type of opinion		Total (%)
		Unmodified (%)	Modified (%)	
Audit committee	No	49 (43%)	26 (23%)	75 (66%)
	Yes	26 (23%)	13 (11%)	39 (34%)
Total (%)		75 (66%)	39 (34%)	114 (100%)

The analysis of Table 10 confirms that there is no association between the type of opinion and the existence of an audit committee, since both the Chi-square test and Fisher’s Exact Test returned a p-value greater than 0.05.

Table 10: Chi-square and Fisher's exact tests - type of opinion vs audit committee

	Value	Df	Asymptotic significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	0.020 ^a	1	.887		
Continuity correction	.000	1	1.000		
Likelihood ratio	0.020	1	.887		
Fisher's exact test				1.000	.529
Valid cases (N)	114				
0 cells (0.0%) expected a count lower than 5. The minimum expected count is 13.34.					

The results of the association measures between these two variables also show a p-value greater than 0.05, as indicated in Table 11. Thus, it is confirmed that there is no association between the variables, since both significance values are above 0.05. This outcome does not support Hypothesis 3, which proposed that the presence of an audit committee influences the type of opinion issued by the auditor in the audit report. Therefore, it is concluded that the presence of an audit committee did not lead to a higher number of modified audit opinions. This finding is consistent with the study by Medeiros et al. (2015), who found no evidence to support the hypothesis that companies with an audit committee are more likely to receive an unmodified opinion without emphasis paragraphs. It was expected that the existence of an audit committee would reduce the likelihood of modified opinions being issued.

Table 11: Measures of association - type of opinion vs audit committee

		Value	Approximate significance
Nominal by Nominal	Fi	-.013	.887
	Cramer's V	.013	.887
Valid cases (N)		114	

Finally, regarding the relationship between the type of auditor opinion and the influence of Covid-19— a key focus of our research— we find that the presence of the pandemic did not significantly impact auditors' opinions. This is evidenced by the fact that more modified opinions were issued in periods when Covid-19 was not present, as shown in Table 12. As observed, 39 (34%) audit reports were issued with a modified opinion, of which only 12 (11%) were influenced by Covid-19.

Table 12: Relationship between the presence of Covid-19 and the type of opinion issued

		Type of opinion		
		Unmodified (%)	Unmodified (%)	Total (%)
Presence of Covid-19	Yes	26 (23%)	12 (11%)	38 (33%)
	No	49 (43%)	27 (24%)	76 (67%)
Total (%)		75 (66%)	39 (34%)	114 (100%)

The analysis of Table 13 confirms that there is no association between the type of opinion and the presence of Covid-19, since both the Chi-square test and Fisher's Exact Test yielded a p-value greater than 0.05.

Table 13: Chi-square and Fisher's exact tests - type of opinion vs. presence of Covid-19

	Value	Df	Asymptotic significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.175 ^a	1	.675		
Continuity correction	.044	1	.834		
Likelihood ratio	.177	1	.674		
Fisher's exact test				.834	.420
Valid cases (N)	114				
0 cells (0.0%) expected a count lower than 5. The minimum expected count is 13.00.					

The results of the association measures between these two variables also show a p-value greater than 0.05, as presented in Table 14. Therefore, it is confirmed that there is no association between the variables, since both significance values are above 0.05.

This finding does not support Hypothesis 4, which proposed that the presence of Covid-19 would influence the type of opinion issued by the auditor in the audit report. It is thus concluded that more modified opinions were not issued due to the impact of the Covid-19 pandemic.

These results are in line with the study by Hay et al. (2021), which showed that the Covid-19 crisis did not significantly affect audit reports.

Table 14: Measures of association - type of opinion vs. presence of Covid-19

		Value	Approximate significance
Nominal by Nominal	Fi	-.039	.675
	Cramer's V	.039	.675
Valid cases (N)		114	

5. Conclusions, Limitations and Suggestions for Future Research

This study aimed to analyse the impact of Covid-19 on the audit reports of the largest non-listed Portuguese companies listed in *Revista Exame* for the years 2018 (pre-pandemic), 2020 (pandemic), and 2022 (post-pandemic).

A bivariate analysis model was used, applying association tests between the dependent and independent variables to assess whether the formulated hypotheses explained the type of opinion issued. This method was selected because the variables were nominal and dichotomous (0 = absent; 1 = present).

The results validated Hypothesis H2, confirming that the type of audit firm influences the opinion issued: non-Big Four firms were more likely to issue modified opinions, in line with Costa et al. (2013), Castro et al. (2017), and Ponte et al. (2020). However, Hypothesis H4, regarding the influence of Covid-19, was not validated. The pandemic did not significantly affect the type of opinion issued in the audit reports analysed.

One limitation encountered was the restricted availability of audit reports from non-listed companies, which are not required to publicly disclose financial information, unlike listed entities. Furthermore, much of the existing literature focuses on listed companies.

For future research, we suggest including all companies from *Revista Exame* and covering each year from 2018 to 2022. Conducting interviews or surveys with auditors could offer further insight into how Covid-19 affected audit processes.

Despite validating only one hypothesis, we believe this study contributes to the literature on the effects of Covid-19 and other auditor-related factors in audit reporting.

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