REVISTA CONTABILIDADE, GESTÃO E GOVERNANÇA
E-ISSN 1984-3925 JOURNAL OF ACCOUNTING, MANAGEMENT AND GOVERNANCE

OPEN ACCESS

Responsible Editor: Jorge Katsumi Niyama
Jomar Miranda Rodrigues
Associate Editor: Vitor Leone
Evaluation Process: Double Blind Review by SEER/OJS

The Influence of the SARS-CoV-2 Coronavirus Pandemic on Audit Complexity in Brazilian Public Companies

ABSTRACT

Objective: Investigate the influence of the SARS-CoV-2 coronavirus pandemic crisis on the complexity of auditing in Brazilian publicly traded companies.

Method: The final sample consists of 165 companies, with data available from Refinitiv Eikon and the Brazilian Securities and Exchange Commission (CVM) from 2010 to 2022. The complexity of auditing was measured based on the amounts paid for audit fees, in line with the study by Garcia et al. (2021), while the SARS-CoV-2 coronavirus pandemic period was represented by observations during the period 2020-2022, following the study by Al-Qadasi et al. (2023). Panel data regression was used for the analyses.

Originality/Relevance: This study fills a gap in the national literature on the effect of SARS-CoV-2 coronavirus on audit complexity and meets the recommendation proposed by Castro et al. (2015), who consider it relevant for future studies to examine the effect of financial crises on audit fees, as this is a measure of audit complexity. Thus, it becomes pertinent for managers, investors, and auditors, who are directly impacted by changes in audit fees.

Results: The main results show that the SARS-CoV-2 coronavirus pandemic positively influences the complexity of auditing in the Brazilian context.

Theoretical/Methodological contributions: This study's theoretical implications signal that the SARS-CoV-2 coronavirus pandemic exacerbates agency costs arising from audit fees, increasing the cost of ensuring that managers act in the best interests of shareholders during pandemic periods.

Keywords: Audit Complexity, SARS-CoV-2, Capital Market.

Fernanda Mendes de Sousa
Federal Rural University of the Semi-arid Region – UFERSA, Rio Grande do Norte, Brasil
f.fernandamsousa@gmail.com

Yuri Gomes Paiva Azevedo
Federal Rural University of the Semi-arid Region – UFERSA, Rio Grande do Norte, Brasil
yuri.azevedo@ufersa.edu.br

Kléber Formiga Miranda
Federal Rural University of the Semi-arid Region – UFERSA, Rio Grande do Norte, Brasil
mirandakf@ufersa.edu.br

Mariana Câmara Gomes e Silva
Federal Rural University of the Semi-arid Region – UFERSA, Rio Grande do Norte, Brasil
mariana.camara@ufersa.edu.br

Alexsandro Gonçalves da Silva Prado
Federal Rural University of the Semi-arid Region – UFERSA, Rio Grande do Norte, Brasil
alexsandro.prado@ufersa.edu.br

Received: July 30, 2024
Revised: January 06, 2025
Accepted: February 28, 2025
Published: March 31, 2025

How to Cite (APA)
Sousa, F. M., Azevedo, Y. G. P., Miranda, K F., Silva, M. C. G., & Prado, A. G. S. (2024). The Influence of the SARS-CoV-2 Coronavirus Pandemic on Audit Complexity in Brazilian Public Companies. *Revista Contabilidade, Gestão e Governança*, *27* (3), 410-444. http://dx.doi.org/10.51341/cgg.v27i3.3274

1 INTRODUCTION

The novel coronavirus pandemic has brought challenges not only to the population but also to organizations, considering that independent auditors, who usually perform accounting audits through face-to-face work, have had difficulties in carrying out audit work due to the isolation measures imposed during the pandemic (Al-Qadasi et al., 2023). Given this scenario, audit firms had to adapt quickly, implementing changes in operational processes, such as conducting virtual audits (IFAC, 2020). Thus, it is considered that the physical restrictions imposed by the pandemic caused auditors to spend more time and financial resources to plan and implement new audit procedures and train employees for these changes (Harjoto & Laksmana, 2022).

The pandemic may have led to increased exposure to auditors' liability, especially in the face of potential significant misstatements in financial reports and the likelihood that auditors will not identify them; this increases the expected legal liability of auditors and the audit's complexity (Harjoto & Laksmana, 2022). In this sense, considering that audit fees are a way of externally measuring the complexity of the audit, companies may have increased their costs for assurance services during the SARS-CoV-2 coronavirus pandemic, while auditors tend to charge higher fees when audits are more complex (Al-Qadasi et al., 2023; Garcia et al., 2021).

However, studies in the area indicate no consensus in the literature regarding the effect of the SARS-CoV-2 coronavirus pandemic on audit complexity. On the one hand, there is evidence that auditors significantly increased audit fees during the pandemic period given the greater perceived audit risk and, consequently, an additional audit effort to design new procedures, train staff to use the latest procedures and implement them amid pandemic restrictions (Gong et al., 2022; Harjoto & Laksmana, 2022). On the other hand, there is also evidence that the SARS-CoV-2 coronavirus pandemic harms audit fees (Alkebsee et al., 2023). Thus, given the lack of consensus regarding the influence of the SARS-CoV-2 coronavirus

pandemic on audit complexity, the present study aims to investigate the impact of the pandemic on audit complexity in Brazilian public companies.

Verifying the relationship between audit complexity and the SARS-CoV-2 coronavirus pandemic in the Brazilian context becomes relevant since Brazil is an emerging market. This scenario may differ from developed economies regarding lower levels of investor protection and higher levels of information asymmetry and agency costs. In addition, emerging markets have a lower demand for quality audit services when compared to developed markets (Siddiqui et al., 2013).

To test the hypothesis that audit complexity has increased significantly due to the SARS-CoV-2 coronavirus crisis, panel data regression was used, with the sample consisting of 165 Brazilian publicly traded companies from 2010 to 2022. The main results corroborate the research hypothesis, indicating that the SARS-CoV-2 coronavirus pandemic positively and significantly influenced audit complexity. Thus, this finding suggests that, during this pandemic, publicly traded companies needed to spend more on audit fees due to the numerous obstacles that exacerbated the complexity of auditors' work.

In this sense, this study contributes to the literature in the area. No studies have been found at the national level investigating the relationship between the SARS-CoV-2 coronavirus pandemic and its possible increase in audit complexity. In addition to filling this gap in the literature in the Brazilian context, this study meets the recommendation proposed by Castro et al. (2015), who consider it relevant that future studies examine the effect of financial crises in Brazilian public companies — such as the SARS-CoV-2 coronavirus pandemic — on audit fees, this being a measure of audit complexity.

Since auditing is essential to ensure the reliability of companies and financial statements, this study helps to understand how the pandemic has affected the complexity of audits and identify possible influences in this regard. In addition, this study contributes to

various stakeholders, such as managers, by providing evidence that enables better planning and adaptation concerning the possible cost increase with fees. For investors and financial analysts, the findings presented here can contribute to the preparation of more accurate estimates of the amounts of audit fees in times of pandemics. In addition, this study also provides insights for auditors by presenting empirical evidence on the impact of financial crises on the composition of their fees.

2 THEORETICAL FRAMEWORK

2.1 The Impact of the SARS-CoV-2 Coronavirus Pandemic on the Capital Markets

The novel coronavirus is a disease caused by the SARS-CoV-2 coronavirus of the Coronaviridae family, which emerged in China in December 2019. Due to its high infectious capacity, the disease spread rapidly to several countries, including Brazil (Satomi et al. 2020). In March 2020, the World Health Organization (WHO) declared the SARS-CoV-2 coronavirus pandemic.

The lack of scientific knowledge about the novel coronavirus and its rapid spread has generated uncertainty regarding the best strategies to combat the epidemic in different parts of the world (Barreto et al., 2020). These uncertainties, both in the health and economic spheres, have caused a significant slowdown in economic activity, a drop in commodity prices, and increased volatility in the prices of financial assets. Therefore, the environment for emerging economies has become challenging, with increased risk aversion and the consequent reallocation of assets, causing a substantial tightening of financial conditions (BACEN, 2020).

To understand the effect of the novel coronavirus on the stock market, several studies have been conducted to examine the effects of the SARS-CoV-2 coronavirus pandemic. Regarding its impact on stock prices, the study by Ngwakwe (2020) reveals that, during the pandemic, there was a significant increase in the average values of stocks in some global

indices, while there was no significant difference in others. In addition, the study by Mazur et al. (2021) aimed to verify the performance of the US stock market during the impact of March 2020 and demonstrated that sectors had different reactions to the implications of the pandemic, some obtaining high returns, while others suffered drastic drops.

Regarding the quality of accounting information, previous studies have presented mixed results. On the one hand, the study by Park (2021) analyzed the pandemic's effect on the quality of accounting information of publicly-held companies, indicating that even amid the crisis, there was an increase in the quality of accounting information. On the other hand, the study by Azevedo et al. (2022) indicated that the SARS-CoV-2 coronavirus pandemic significantly influenced earnings management practices, thus reducing the quality of information reported to users of accounting information.

Other studies in the area have also investigated the relationship between the level of corporate governance and the performance of companies during the pandemic. However, there is also no consensus in the literature. On the one hand, given that governance levels can impact companies' performance, the study by Alencar et al. (2022) shows that companies listed during the pandemic at the highest levels of corporate governance performed better when compared to companies in the basic segments. On the other hand, given that an expectation was created that companies included in the special segments would present better results, the study by França et al. (2022) demonstrates that being listed at the highest levels of governance during the SARS-CoV-2 coronavirus pandemic does not guarantee that companies will perform better.

Regarding the relationship between the SARS-CoV-2 coronavirus pandemic and the level of risk disclosure, according to Lisboa and Silva (2023) and Loughran and McDonald (2023), there was no significant variation in the disclosure of contingencies. Thus, these studies show managers did not highlight exposure to pandemic risks to stakeholders. On the other hand, the study by Almeida and Costa (2022) shows that there was an increase in the disclosure of

risks related to the pandemic since, in 2019, only 6.99% of firms disclosed risks associated with pandemics or epidemics in their reference forms, while between 2020 and 2021 this number increased to 75.34%.

In addition, studies in the area have also analyzed the effects of the pandemic on audit fees (Alkebsee et al., 2023; Al-Qadasi et al., 2023; Gong et al., 2022; Harjoto & Laksmana, 2022). However, it is also clear that there is no consensus in the literature regarding the effect of the coronavirus pandemic on audit fees. While some studies provide evidence that this relationship is positive (Al-Qadasi et al., 2023; Gong et al., 2022; Harjoto & Laksmana, 2022), there is also evidence indicating that the SARS-CoV-2 coronavirus pandemic harms audit fees (Alkebsee et al., 2023).

In addition to this lack of consensus, it is clear that no studies have been conducted examining the relationship between audit complexity and the SARS-CoV-2 coronavirus pandemic in the Brazilian context. Thus, it is considered relevant to investigate in this context since the country is regarded as an emerging market with particularities distinct from developed economies, such as lower levels of investor protection, greater information asymmetries, and agency costs (Siddiqui et al., 2013).

2.2 Research Hypothesis

Due to the scale and trajectory of the SARS-CoV-2 coronavirus pandemic, most countries have imposed partial or full lockdowns, affecting economic activities, businesses, financial markets, and important services (Ashraf, 2020; De Vito & Gómez, 2020; Ramelli & Wagner, 2020; Sharif et al., 2020; Zhang et al., 2020). Mobility restrictions affected on-site audits, as auditors no longer had physical access to companies and their subsidiaries. Therefore, they needed to change or develop their audit methods and procedures to gather adequate evidence (Albitar et al., 2020).

In this sense, the SARS-CoV-2 coronavirus pandemic has brought new challenges for auditors, making the process of obtaining evidence more difficult and raising questions about the risk of material misstatements and the effort of audit teams to identify them (Baatwah et al., 2023). Gong et al. (2022) corroborate this view by highlighting that physical restrictions have made it difficult to audit accounts that require greater verification and judgment, such as inventories and research and development expenses. In addition, the remote work imposed on both employees of the audited companies and external auditors may have reduced the effectiveness of controls, increasing clients' vulnerability to fraud and misstatements.

Periods of financial crises, such as the SARS-CoV-2 coronavirus, can increase the level of risk for companies, both due to breaches of debt covenants and the risk of bankruptcy. This increase in risks and the concerns of creditors and investors mean that auditors need to apply more extensive audit procedures and invest more effort in assessing going concern assumptions (Choi et al., 2008; Francis & Wang, 2008; Ghosh & Pawlewicz, 2009; Zhang & Huang, 2013).

However, travel restrictions and difficulties in face-to-face communication may have compromised the implementation of internal control procedures by clients and delayed the correction of existing weaknesses during the SARS-CoV-2 coronavirus pandemic (Ettredge et al., 2024). Thus, internal controls that were previously considered adequate may have become insufficient due to the continued effects of the pandemic on the operating environment, business models, and revenue sources, increasing the risk of weaknesses in the control environment (Murphy, 2020).

In addition to requiring greater effort for the auditor to gather adequate evidence to form their opinion, it is observed that the SARS-CoV-2 coronavirus pandemic also led to a reduction in the quality of accounting information reported to stakeholders, as firms increased their levels of earnings management during this period (Azevedo et al., 2022). This greater propensity for

earnings management explains why most regulators are issuing warning signs to auditors to be cautious in conducting their audits during the pandemic (Akrimi, 2021).

Based on this, the SARS-CoV-2 coronavirus pandemic may have prompted auditees to carefully consider the likely effects of this health crisis on their financial reporting, mainly through increased and enhanced sensitivity analyses to assess their going concern status (Albitar et al., 2020). The pandemic is also considered to have created high liability exposure, mainly with potential material misstatements in financial reporting and the possibility that auditors may not detect such misstatements, thus increasing the expected legal liability of auditors. Thus, the SARS-CoV-2 coronavirus pandemic has imposed additional challenges on auditors, consequently increasing the complexity of the audit (Al-Qadasi et al., 2023).

Given this, as a way of compensating for possible losses due to sanctions, litigation, damaged reputation, and financial costs, auditors may demand higher remuneration for their services provided as a way of better pricing this greater risk (Brumfield et al., 1983) and complexity. In this sense, audit fees are a way of externally measuring the greater complexity of the audit since auditors tend to charge higher fees when audits are more complex (Al-Qadasi et al., 2023).

According to Agency Theory, shareholders face costs in monitoring managers and ensuring that they act in the company's best interests (Jensen & Meckling, 1976). From this perspective, the literature considers audit fees as one of the agency costs, given the relevance of the role of external monitoring (Nikkinen & Sahlström, 2004). Thus, if the SARS-CoV-2 coronavirus pandemic positively impacts audit fees, it can be considered that it will exacerbate monitoring costs, making it more expensive to ensure that managers act in the best interests of shareholders.

The SARS-CoV-2 coronavirus pandemic is considered to have resulted in a significant increase in audit complexity, as auditors need to respond to the audit challenges and difficulties

caused by the pandemic, such as applying more extensive audit procedures and efforts to assess going concern assumptions (Choi et al., 2008; Francis & Wang, 2008; Ghosh & Pawlewicz, 2009; Zhang & Huang, 2013), making greater efforts for the auditor to gather adequate evidence to form their opinion, as well as adapting procedures to maintain audit quality and ensure the adequacy of companies' disclosures about the impact of the SARS-CoV-2 coronavirus (PCAOB, 2020).

Furthermore, a significant decline in stock prices or financial problems arising from an economic crisis can trigger specific corporate events, such as mergers, acquisitions, and corporate restructuring (Ílaslan & Günsür, 2023). Thus, the need for audits with broader scopes increases because specific events often involve adjustments to the client's accounting and information systems. In addition, auditors need to make more effort to learn how events change the accounting system (Firth, 2002).

Given this, considering that auditors have intensified their efforts to carry out audits during the pandemic in response to the increased risk of distortion in clients' financial statements (Ettredge et al., 2024), as well as considering that auditors charge higher fees in response to the greater effort and increased risk of material distortion (Johnstone & Bedard, 2003), the research hypothesis is that:

H_1: Audit complexity has increased significantly due to the SARS-CoV-2 coronavirus pandemic crisis.

3 METHODOLOGY

3.1 Sample Composition and Data Collection

To achieve the objective of this study, all Brazilian publicly-held companies listed in the Brazil Stock Exchange and Over-the-Counter Market (B3) with data available between 2010 and 2022 were initially selected. The data required for the study were collected through the

Refinitiv Eikon database and data available from the Securities and Exchange Commission (CVM), with information related to auditors' fees coming from the Independent Auditors section of the companies' Reference Form.

The initial sample consisted of 482 publicly-held companies listed on B3. However, 81 companies characterized as financial institutions were excluded due to the particularities of this sector, as well as 236 companies that had incomplete data (missing values). Thus, the final sample consists of 165 publicly-held Brazilian companies, as shown in Table 1.

Table 1

Sample Selection

	Companhias
Initial sample	482
(−) Financial companies	(81)
(−) Missing data	(236)
(=) Final sample	165

It is important to note that the data collected in this study were arranged in an unbalanced panel to avoid survival bias. In addition, to reduce the presence of outliers, all quantitative variables were winsorized at the 1% level.

3.2 Variables

Previous studies have used audit fees as a proxy to determine audit complexity (Al-Qadasi et al., 2023; Garcia et al., 2021). This perspective is based on the view that auditors set their fees based on the amount of work required to perform the audit. Thus, more complex companies require greater effort, time, and resources from the audit team, resulting in higher fees (Chan et al., 1993).

According to the literature, auditing more complex clients may make external auditors more prone to professional liability claims compared to those associated with less complex companies, which leads them to increase their fee levels to reflect the greater complexity of the work (Clatworthy & Peel, 2007). This perspective is corroborated by studies such as those by

Hoitash et al. (2007) and Joshi and Al-Bastaki (2000), which indicate that the more complex a firm's operations, the higher the audit fees. Therefore, in line with previous studies (e.g., Garcia et al., 2021), this study used the natural logarithm of audit fees to estimate the complexity of auditing in Brazilian companies.

Regarding measuring the SARS-CoV-2 coronavirus pandemic period, in March 2020, the SARS-CoV-2 coronavirus was classified by the World Health Organization (WHO) as a pandemic. Thus, given the official declaration of this health agency and following the study by Al-Qadasi et al. (2023), the time window from 2020 to 2022 is considered the pandemic period. Thus, 0 (zero) was assigned to periods when there was no pandemic (period between 2010 and 2019) and 1 to periods when the pandemic was present (period between 2020 and 2022).).

In line with previous studies, control variables were also inserted into the econometric model, namely: Big Four, profitability, debt, size, earnings management through discretionary accruals, as well as through actual activities, audit committee, CEO duality, auditor's opinion, audit delay, and litigation risk, because of a possible influence of these variables on audit fees, a proxy for audit complexity.

For the Big Four (BIG4) variable, the value 1 (one) was assumed when a company is audited by one of the largest auditing firms KPMG, Deloitte, PricewaterhouseCoopers (PwC), or Ernst & Young (EY), and the value 0 (zero) was assigned when another auditing firm carries out the audit. Zaman et al. (2011) highlight the importance of including this variable, suggesting that companies with deficient internal controls avoid hiring large auditing firms and that Big Four affiliates have a higher reputation, encouraging them to ensure better quality.

The profitability variable (ROA) was calculated by dividing net income by total assets, as shown in previous studies by Mello and Valentim (2018) and Borges et al. (2017). The debt variable (DEBT) is measured by dividing liabilities by total assets, in line with the studies by Datta et al. (2020), Naser and Nuseibeh (2007), and Brighenti et al. (2016). Regarding the size

variable (SIZE), the natural logarithm of total assets is considered following the studies by Hallak and Silva (2012), Borges et al. (2017), and Mello and Valentim (2018), from the perspective that larger companies are more complex, increasing the level of analysis and work of auditors and, consequently, audit expenses.

Regarding earnings management, following the study carried out by Choi et al. (2018), which indicates that audit fees can be influenced by both earnings management by discretionary accruals and by actual activities, we use the model proposed by Kothari et al. (2005) as a metric for discretionary accruals (DA) and the model by Roychowdhury (2006) as a metric for earnings management by actual activities. In a complementary manner, in line with the studies by Reis et al. (2015) and Rocha et al. (2022), we aggregate the three forms of management by actual activities (abnormal levels of production, cash flow, and operating expenses) into a single metric for management by actual activities (REM).

The audit committee dummies (COMITAUD) were also included, given that an organization that has an audit committee is more likely to monitor accounting information more closely, resulting in a possible reduction in audit complexity (Collier & Gregory, 1996; Hallak & Silva, 2012), as well as CEO duality (DUALCEO), since there is evidence that the CEO's power is related to audit fees (Tee, 2019).

Following the study by Oradi (2021), control was also carried out for the delay time in the audit opinion (AUDITDELAY) from the perspective that a prolonged time to issue the report indicates greater risk and complexity, often leading to higher audit fees. Additionally, in line with the study by Oradi (2021), the auditor's opinion (OPINIONMOD) was also inserted as a control variable.

Finally, since audit fees can also be influenced by litigation risk, as evidenced by Giordani et al. (2020), litigation risk was inserted as a control variable, which was measured using the model proposed by Shu (2000) and already implemented in the Brazilian context in

the study carried out by Giordani et al. (2020). Table 2 shows the dependent and independent variables used in the study.

Table 2

Description of Variables

Variable	Description	Previous Studies	Source
ComplexAudit	Natural logarithm of audit fees	Garcia et al. (2021).	CVM
PAN	Represented by the dummy variable in which the company receives 0 (zero) for periods in which there was no pandemic and 1 (one) for periods in which the pandemic was present.	Al-Qadasi et al. (2023).	-
BIG4	Represented by the dummy variable, where 1 corresponds to companies that were audited by big4 and 0 to companies audited by non-Big4	Zaman et al. (2011), Hallak e Silva (2012), Borges et al. (2017) and Mello e Valentim (2018).	CVM
ROA	Net income/Total assets	Mello e Valentim (2018), Borges et al. (2017).	Refinitiv Eikon
DEBT	Total Liabilities/Assets	Datta et al.(2020), Naser e Nuseibh (2007) and Brighenti et al. (2016).	Refinitiv Eikon
SIZE	Natural logarithm of total assets	Hallak e Silva (2012) , Borges et al. (2017) and Mello e Valentim (2018).	Refinitiv Eikon
DA	Earnings management through discretionary accruals, estimated using the model by Kothari et al. (2005).	Choi et al. (2018).	Refinitiv Eikon
REM	Earnings management by real activities, initially estimated by the Roychowdhury model (2006) and then aggregated into a single metric, as carried out by Reis et al. (2015) and Rocha et al. (2022).	Choi et al. (2018).	Refinitiv Eikon
COMITAUD	The dummy variable represents 1 as equivalent to companies having an audit committee, 0 otherwise.	Hallak e Silva (2012) and Mello e Valentim (2018).	CVM
DUALCEO	The dummy variable represents 1 as equivalent to companies with CEO duality, 0 otherwise.	Tee (2019).	CVM
AUDITDELAY	The time taken to issue the audit report is measured by the number of days between the end of the company's calendar year and the date the report is signed.	Oradi (2021)	CVM
MAO	The dummy variable represents companies receiving an audit report with a modified opinion; 1 is equivalent to 0 otherwise.	Oradi (2021)	CVM
LITIG	The firm's litigation risk, estimated by the model proposed by Shu (2000)	Giordani et al. (2020).	Refinitiv Eikon

3.3 Econometric Model

This research used the multiple linear regression technique with panel data to examine the influence of the SARS-CoV-2 coronavirus pandemic on audit complexity. Thus, Equation 1 presents the study's regression model.

$$ComplexAudit_{i,t} = \beta_0 + \beta_1 PAN_{i,t} + \sum Controls_{i,t} + \mu_{i,t} \quad (1)$$

Where: ComplexAudit is the dependent variable, represented by the natural logarithm of audit fees, PAN is the independent variable, represented by the dummy variable in which the company receives 0 (zero) for periods in which there was no pandemic and 1 (one) for periods with the presence of the pandemic. ∑Controls represent a vector with the control variables inserted in the econometric model BIG4, ROA, DEBT, SIZE, DA, REM, COMITAUD, DUALCEO, AUDIT DELAY, MAO, and LITIG, as shown in Table 2.

4 RESULTS ANALYSIS

4.1 Descriptive Analysis

Table 3 presents the descriptive statistics of the data analyzed in this study.

Table 3

Descriptive Statistics

Variable	N	Average	Standard deviation	Minimum	Maximum
ComplexAudit (in log)	1.593	13,189	1,444	8,224	17,702
ComplexAudit (in R$)	1.593	1.615.065,90	3.500.669,20	3.729,60	48.739.000,00
PAN	1.593	0,242	0,428	0	1
BIG4	1.593	0,724	0,447	0	1
ROA	1.593	0,025	0,101	-0,411	0,259
DEBT	1.593	0,297	0,220	0	1,24
SIZE	1.593	21,712	1,786	17,232	25,823
DA	1.593	-0,004	0,084	-0,268	0,255
RAM	1.593	-0,003	0,108	-0,701	1,700
COMITAUD	1.593	0,279	00,449	0	1
DUALCEO	1.593	0,138	0,345	0	1
AUDITDELAY	1.593	78,664	62,417	20	1034
MAO	1.593	0,043	0,202	0	1
LITIG	1.593	0,719	8,302	-14,490	21,546

Regarding the audit complexity variable (ComplexAudit), it can be seen that, on average, companies pay R$ 1,615,065.90 for independent audit services. Based on the descriptive analysis of the PAN dummy, it can also be seen that 24.2% of the observations were made during the SARS-CoV-2 coronavirus pandemic.

Regarding profitability (ROA), companies present positive profitability of approximately 0.025, a low value. The lowest profitability index presented was -0.411, while the maximum value was 0.259. Regarding debt (DEBT), companies showed, on average, a value of approximately 0.297. This indicates that, on average, there is no excessive dependence on third-party resources to finance their assets.

The size-related index (SIZE) shows that, on average, companies have a logarithm of total assets of 21.712, with a minimum value of 17.232 and a maximum value of 25.823. Regarding involvement in earnings management practices, it is found that, on average, firms have managed earnings to reduce reported profit, either through discretionary accruals (DA) or through real activities (REM), considering the values of -0.004 and -0.003, respectively.

Regarding the BIG4, COMITAUD, and DUALCEO dummies, it can be seen that 71% of the sample analyzed is composed of companies that Big Four companies audit, that only approximately 26% of the companies present in the sample have an audit committee, as well as that 12.9% of the companies have dual CEO, that is, the same person occupying the position of CEO and chairman of the board of directors.

It was also found that the average time for delivery of the audit report (AUDITDELAY) was approximately 79 days, and only approximately 4% of the observations analyzed included a modified audit report. Finally, it is found that the companies present in the sample present, on average, a litigation risk level of 0.719, a value slightly lower than that presented in the study by Giordani et al. (2020).

In addition, the correlation between the variables inserted in the econometric model was verified, where Appendix A presents the results of the Spearman correlation test, considering that the Shapiro-Wilk normality test signaled the non-normality of the quantitative variables analyzed (p-values < 5%).

Appendix A shows a positive and significant relationship between the variables SARS-CoV-2 coronavirus pandemic (PAN) and audit complexity (ComplexAudit). In addition, the results indicate no high correlation between the independent and control variables included in the econometric models, which suggests no multicollinearity.

4.2 Econometric Analysis

To identify the influence of the SARS-CoV-2 coronavirus pandemic on the complexity of the audit, a regression model was estimated with panel data with fixed effects robust to heteroscedasticity. First, the Breusch-Pagan test was performed to analyze whether there were panel effects. After the test, it was found that the null hypothesis was rejected since the value is less than 5%, indicating that the model contains panel effects.

Subsequently, the Chow test was performed to verify whether the models should be estimated with stacked data or with a panel with fixed effects, where the null hypothesis was rejected, demonstrating that the most appropriate estimation is the panel with fixed effects. After estimating the panel data, the Hausmann test was performed to verify whether the effects were fixed or random, resulting in a p-value greater than 5%, suggesting using random effects.

Finally, the heteroscedasticity test was performed, which showed a p-value below 5%, rejecting the null hypothesis of homoscedasticity of the residuals. Thus, it was necessary to estimate the model robust to heteroscedasticity. It is important to highlight that, as evidenced in the correlation matrix (Appendix A), there is no high correlation between the independent and control variables included in the econometric models, which suggests the absence of

multicollinearity. However, as a complement, the Variance Inflation Factor (VIF) test was estimated, which confirmed the absence of multicollinearity, given the average VIF of 1.29. Table 4 presents the results of the final regression model with panel data with random effects and heteroscedasticity correction.

Table 4

Regression Results

Variable	ComplexAudit
PAN	0,115**
	(0,050)
BIG4	0,333***
	(0,107)
ROA	-0,313
	(0,224)
DEBT	0,120
	(0,179)
SIZE	0,582***
	(0,050)
DA	-0,067
	(0,300)
RAM	-0,111
	(0,227)
COMITAUD	-0,057
	(0,066)
DUALCEO	-0,032
	(0,105)
AUDITDELAY	-0,001
	(0,001)
MAO	-0,153
	(0,101)
LITIG	-0,001
	(0,003)
Constant	0,341
	(1,036)
Observations	1.593
Firms	165
Prob > F	293,13***
R2 Within	0,177

Note: * indicates significance at the 10% level; ** indicates significance at the 5% level; *** indicates significance at the 1% level.

The results presented in Table 4 show that the PAN variable has a positive and significant relationship at 5% with the dependent variable ComplexAudit. This result corroborates the hypothesis of this study, indicating that the SARS-CoV-2 coronavirus pandemic has led to an increase in the complexity of auditing in Brazilian publicly-held companies.

Regarding the control variables, it can be seen that the size variable (SIZE) also presented positive significance at 1%, indicating that larger companies tend to pay higher levels of fees to their auditors, as evidenced by Hallak and Silva (2012), Borges et al. (2017) and Mello and Valentim (2018). Similarly, it can be noted that the Big Four variable (BIG4) also presented a positive and significant coefficient, corroborating previous studies that indicate that Big Four auditing companies have a higher reputation, which may be reflected in higher amounts of fees (Zaman et al., 2011).

Finally, the independent variables that capture the effect of performance (ROA), debt (DEBT), earnings management by accruals (DA) and by real activities (REM), the existence of the audit committee (COMITAUD), CEO duality (DUALCEO), audit report delay time (AUDITDELAY), modified auditor's opinion (MAO) and litigation risk (LITIG) did not show a significant influence on the definition of audit fees, a proxy for audit complexity, contrary to empirical evidence from previous studies (Datta et al., 2020; Giordani et al., 2020; Greiner et al., 2017; Hallak & Silva, 2012; Mello & Valentim, 2018; Oradi, 2021; Tee, 2019).

4.3 Discussion of Results

Although international literature indicates that there is no consensus on the effect of the pandemic period on auditors' fees, it appears, in the Brazilian context, that the complexity of auditing has increased significantly due to the SARS-CoV-2 coronavirus crisis, in line with international findings such as those of Gong et al. (2022) and Harjoto and Laksmana (2022).

This positive influence can be explained by the increased challenges and difficulties auditors face due to the pandemic; this includes the need to apply more extensive audit procedures and make additional efforts in assessing going concern assumptions, which may have impacted the increased complexity of the audit (Choi et al., 2008; Francis & Wang, 2008; Ghosh & Pawlewicz, 2009; Zhang & Huang, 2013). In a complementary manner, restrictions

on physical and in-person interactions led auditors to face difficulties in auditing accounts that require more testing and greater exercise of their judgment, such as inventories and research and development expenses (Gong et al., 2022), and, consequently, the risk of material misstatements and the effort of audit teams to identify them.

Furthermore, it can also be explained by the greater effort for the auditor to gather adequate evidence to form his opinion, as well as the adaptation of procedures to maintain the quality of the audit and ensure the adequacy of companies' disclosures on the impact of the SARS-CoV-2 coronavirus (PCAOB, 2020). There is also a greater exposure to the risk of possible material misstatements in financial reports and the possibility that auditors will not detect such misstatements, thus increasing the expected legal liability of auditors (Al-Qadasi et al., 2023).

However, despite the challenging scenario of the pandemic, it is important to highlight that this period also brought positive impacts that can improve auditing in the post-pandemic period, such as technological advances in data analytics and the adoption of more sophisticated techniques, such as computer-assisted auditing tools and techniques (CAAT), which have made it easier for auditors to obtain insights from large data sets (Lutfi & Alqudah, 2023). In addition, the greater work-life balance of auditors is highlighted, caused by the cultural shift from in-person to non-in-person activities, with audit firms recognizing that the work model in the future will probably be more hybrid since auditors show interest in working from home more frequently (Sian, 2024).

Thus, according to the literature in the area, it appears that the adoption of new technologies and remote auditing (Lutfi & Alqudah, 2023), greater attention to risk management, with a special focus on issues such as business continuity and crisis management (Choi et al., 2008; Francis & Wang, 2008; Ghosh & Pawlewicz, 2009; Zhang & Huang, 2013), improvement of the assessment of internal controls and appreciation of communication and

transparency (Ettredge et al., 2024) can be cited as some of the lessons learned by auditing in the post-pandemic context.

Considering that audit fees are seen in the literature as one of the agency costs (Nikkinen & Sahlström, 2004), the results presented here indicate that the SARS-CoV-2 coronavirus pandemic exacerbates agency costs, increasing the cost of ensuring that managers act in the best interests of shareholders during pandemic periods. Thus, this study complements previous research investigating audit fee determinants in the Brazilian context (Borges et al., 2017; Brighenti et al., 2016; Castro et al., 2015; Hallak & Silva, 2012). In a complementary manner, it fills a gap in the national literature regarding the effect of the SARS-CoV-2 coronavirus pandemic on audit complexity, meeting the recommendation proposed by Castro et al. (2015) since this allows capturing the complexity of the audit.

4.4 Robustness Test

To ensure the consistency and robustness of the results presented, as well as considering that the size of the auditee is considered in the literature as an observable measure of audit complexity (Van Raak et al., 2020) since larger firms generally have a greater diversity of processes, operations and areas of activity, which may be an indirect indicator of complexity, we followed previous studies that use the natural logarithm of total assets as a measure of auditee size (Gist, 1992; Hoitash et al., 2007) and re-estimated the econometric model to verify whether the results remain constant when using this additional measure of audit complexity (ComplexAuditSize). The results are presented in Table 5.

Table 5

Robustness Test Results

Variable	ComplexAuditSize
PAN	0,304***
	(0,042)
BIG4	0,059
	(0,073)
ROA	0,525***
	(0,194)
DEBT	0,198
	(0,216)
DA	0,382*
	(0,221)
RAM	0,150
	(0,130)
COMITAUD	0,0471
	(0,047)
DUALCEO	-0,109*
	(0,056)
AUDITDELAY	-0,001
	(0,001)
MAO	-0,158*
	(0,093)
LITIG	-0,011***
	(0,002)
Constant	21,560***
	(0,162)
Observations	1,593
Firms	165
Prob > F	148,86***
R2 Within	0,239

Note: * indicates significance at the 10% level; ** indicates significance at the 5% level; *** indicates significance at the 1% level.

The results presented in Table 5 show that the PAN variable continues to exert a positive and statistically significant effect on audit complexity, now represented by the natural logarithm of total assets (ComplexAuditSize). Given this, it can be seen that this finding corroborates the hypothesis of this study and the evidence presented in Table 4, indicating that the SARS-CoV-2 coronavirus pandemic has led to an increase in audit complexity in Brazilian public companies.

5 FINAL CONSIDERATIONS

This study investigated the influence of the SARS-CoV-2 coronavirus pandemic crisis on the complexity of auditing in Brazilian public companies. The final sample consisted of 165

companies, with data available from Refinitiv Eikon and CVM from 2010 to 2022, and data analysis was performed by regression with panel data.

The main results demonstrate that the SARS-CoV-2 coronavirus pandemic has increased audit complexity, which is in line with the research hypothesis, which suggests that this pandemic exerts a positive and significant influence on audit complexity. It is considered that this positive influence can be explained by some factors, such as possible greater exposure to the risk of potential material misstatements in financial reports and the possibility that auditors will not detect these misstatements, thus increasing the expected legal liability of auditors.

In addition, this finding may be explained by the need to apply more extensive audit procedures and make additional efforts to assess ongoing concern assumptions due to the SARS-CoV-2 coronavirus pandemic. Finally, it may also have occurred due to the greater effort for the auditor to gather adequate evidence to form his opinion, as well as the adaptation of procedures to maintain the quality of the audit and ensure the adequacy of companies' disclosures on the impact of the SARS-CoV-2 coronavirus.

In this sense, by demonstrating that the period of the SARS-CoV-2 coronavirus pandemic positively influenced the complexity of companies' audits, this study contributed to the literature in the area since no studies have been found in the Brazilian context that have investigated this relationship. In a complementary manner, this study helps to understand how the pandemic affected the complexity of audits in an emerging market since the literature indicates that there is still no consensus on this relationship.

In addition, this study contributed to managers by providing evidence that enables better planning and adaptation concerning the possible cost increase with fees. For investors and financial analysts, the findings presented here can contribute to the preparation of more accurate estimates of the amounts of audit fees in times of pandemic. In addition, it provides insights for

auditors by presenting empirical evidence on the impact of financial crises on the composition of their fees.

Despite the contributions presented here, this study has limitations, such as using only one metric to capture audit complexity. In this sense, it is recommended that future studies verify whether the findings presented here remain constant when using other audit complexity proxies. In addition, it is also considered relevant to examine different factors that can mitigate the influence of the SARS-CoV-2 coronavirus on audit complexity, such as corporate governance mechanisms, audit committees, and institutional investors, among others.

REFERENCES

Akrimi, N. (2021). The impact of coronavirus pandemic on audit quality: The perceptions of Saudi auditors. *Academy of Accounting & Financial Studies Journal*, *25*(1), 1–7.

Albitar, K., Gerged, A. M., Kikhia, H., & Hussainey, K. (2020). Auditing in times of social distancing: The effect of COVID-19 on auditing quality. *International Journal of Accounting & Information Management*, *29*(1), 169–178. https://doi.org/10.1108/IJAIM-08-2020-0128

Alencar, M. R. X., Feitosa, M. I. C., Leite, A. C. R., Leal, P. H., & Chagas, M. J. R. (2022). Governança corporativa, sustentabilidade e Covid-19 afetam o desempenho financeiro e de mercado? Análise em empresas brasileiras. *Refas - Revista Fatec Zona Sul*, *9*(2), 25-42. https://doi.org/10.26853/Refas_ISSN-2359-182X_v09n02_02

Alkebsee, R. H., Azibi, J., Koutoupis, A., & Dimitriou, T. (2023). Assessing the impact of the Covid-19 pandemic on audit fees: an international evidence. *Journal of Financial Reporting and Accounting*, *Ahead-of-print*, 1-20. https://doi.org/10.1108/JFRA-05-2022-0169

Almeida, C. G., & Costa, T. A. (2022). Evidenciação de Riscos Sobre Pandemias no Formulário de Referência: uma Abordagem no Contexto da Covid-19. *Pensar Contábil*, *23*(82), 25-32

Al-Qadasi, A., Baatwah, S. R., & Omer, W .K. (2023). Audit fees under the COVID-19 pandemic: evidence from Oman. *Journal of Accounting in Emerging Economies*, *13*(4), 806-824. https://doi.org/10.1108/JAEE-08-2021-0269

Ashraf, B. N. (2020). Stock markets' reaction to COVID-19: Cases or fatalities? *Research in International Business and Finance*, *54*, 1-7. https://doi.org/10.1016/j.ribaf.2020.101249

Azevedo, Y. G. P., Silva, J. P. T., Stanzani, L. M. L., & Gaio, L. E. (2022). Can Dividend Payments Mitigate the Influence of Covid-19 Crisis on Earnings Management? Evidence from Brazil. *Contabilidade Vista & Revista*, *33*(3), 1-22. https://doi.org/10.22561/cvr.v33i3.7512

BACEN. (2020). *Relatório de Inflação*. *22*(1), 1-88. https://www.bcb.gov.br/content/ri/relatorioinflacao/202003/ri202003p.pdf

Barreto, M. L., Barros, A. J. D., Carvalho, M. S., Codeço, C. T., Hallal, P. R. C., Medronho, R. A., Struchiner, C. J., Victora, C. G., & Werneck, G. L. (2020). O que é urgente e necessário para subsidiar as políticas de enfrentamento da pandemia de COVID-19 no Brasil?. *Revista Brasileira de Epidemiologia*, *23*, 1-4. https://doi.org/10.1590/1980-549720200032

Baatwah, S. R., Al-Ansi, A. A., Almoataz, E. S., & Salleh, Z. (2023). Self-efficacy, remote audit proficiency, effort, and performance in the COVID-19 crisis: an auditor's perspective. *Managerial Auditing Journal*, *38*(6), 832-862. https://doi.org/10.1108/MAJ-05-2022-3570

Borges, V. C., Silva, R. L. M., & Nardi, P. C. C. (2017). Determinantes dos honorários da auditoria independente das empresas brasileiras de capital aberto. *Revista Contabilidade, Gestão & Governança*, *20*(2), 216-230. https://doi.org/10.51341/1984-3925_2017v20n2a3

Brighenti, J., Degenhart, L., Cunha, P. R. (2016). Fatores Influentes nos Honorários de Auditoria: Análise das empresas brasileiras listadas na BM&FBovespa. *Pensar Contábil*, *18*(65), 16-27.

Brumfield, C., Elliott, R., & Jacobson, P. (1983). Business risk and the audit process. *Journal of Accountancy*, *155*, 60-68.

Castro, W. B. L., Peleias, I. R., & Silva, G. P. (2015). Determinantes dos honorários de auditoria: um estudo nas empresas listadas na BM&FBovespa. *Revista Contabilidade & Finanças*, *26*(69), 261-273. https://doi.org/10.1590/1808-057x201501560

Chan, P., Ezzamel, M., & Gwilliam, D. (1993). Determinants of audit fees for quoted UK companies. *Journal of Business Finance & Accounting*, *20*(6), 765-786. https://doi.org/10.1111/j.1468-5957.1993.tb00292.x

Choi, A., Sohn, B. C., & Yuen, D. (2018). Do auditors care about real earnings management in their audit fee decisions? Asia-*Pacific Journal of Accounting & Economics*, *25*(1-2), 21-41. https://doi.org/10.1080/16081625.2016.1231580

Choi, J., Kim, J., Liu, X., & Simunic, D. A. (2008). Audit pricing, legal liability regimes, and Big 4 premiums: Theory and cross-country evidence. *Contemporary accounting research*, *25*(1), 55-99. https://doi.org/10.1506/car.25.1.2

Clatworthy, M. A., & Peel, M. J. (2007). The effect of corporate status on external audit fees: Evidence from the UK. *Journal of Business Finance & Accounting*, *34*(1-2), 169-201. https://doi.org/10.1111/j.1468-5957.2006.00658.x

Collier, P., & Gregory, A. (1996). Audit committee effectiveness and the audit fee. *European Accounting Review*, *5*(2), 177-198. https://doi.org/10.1080/09638189600000012

Datta, S., Jha, A., & Kulchania, M. (2020). On accounting's twenty-first century challenge: Evidence on the relation between intangible assets and audit fees. *Review of Quantitative Finance and Accounting*, *55*, 123-162. https://doi.org/10.1007/s11156-019-00839-y

De Vito, A., & Gómez, J. (2020). Estimating the COVID-19 cash crunch: Global evidence and policy. *Journal of Accounting and Public Policy*, *39*(2), 1-14. https://doi.org/10.1016/j.jaccpubpol.2020.106741

Ettredge, M. L., Mao, J., Stone, M., & Sun, L. (2024). How Did the COVID-19 Pandemic Affect Audit Fees and Filing Delays?. *Auditing: A Journal of Practice & Theory*, 1-24. https://doi.org/10.2308/AJPT-2022-101

Firth, M. (2002). Auditor–provided consultancy services and their associations with audit fees and audit opinions. *Journal of Business Finance & Accounting*, *29*(5-6), 661-693. https://doi.org/10.1111/1468-5957.00446

França, M. C. M., Leal, P. H., & Anjos, L. C. M. (2022). O Impacto da Governança Corporativa no Desempenho das Empresas listadas na B3 durante a Pandemia da Covid-19 no Brasil. *Anais do Congresso Anpcont*, Foz do Iguaçu, PR, Brasil, 16.

Francis, J. R., & Wang, D. (2008). The joint effect of investor protection and Big 4 audits on earnings quality around the world. *Contemporary Accounting Research*, *25(*1), 157-191. https://doi.org/10.1506/car.25.1.6

Garcia, J., De Villiers, C., & Li, L. (2021). Is a client's corporate social responsibility performance a source of audit complexity? *International Journal of Auditing*, *25*(1), 75-102. https://doi.org/10.1111/ijau.12207

Ghosh, A., & Pawlewicz, R. (2009). The impact of regulation on auditor fees: Evidence from the Sarbanes-Oxley Act. *Auditing: A Journal of Practice and Theory*, *28*, 171-197. https://doi.org/10.2308/aud.2009.28.2.171

Giordani, M. S., Souza, J. A. A. S. Neto, & Cunha, P. R. (2020). Influência do Risco de Litígio do Auditor nos Honorários de Auditoria e não Auditoria. *Revista de Educação e Pesquisa em Contabilidade*, *14*(4). https://doi.org/10.17524/repec.v14i4.2574

Gist, W. E. (1992). Explaining variability in external audit fees. *Accounting and Business Research*, *23*(89), 79-84. https://doi.org/10.1080/00014788.1992.9729863

Gong, S., Ho, N., Jin, J. Y., & Kanagaretnam, K. (2022). Audit quality and COVID-19 restrictions. *Managerial Auditing Journal*, *37*(8), 1017-1037. https://doi.org/10.1108/MAJ-11-2021-3383

Greiner, A., Kohlbeck, M. J., & Smirt, T. J. (2017). The Relationship between Aggressive Real Earnings Management and Current and Future Audit Fees. *Auditing: A Journal of Practice & Theory*, *36*(1), 85–107. https://doi.org/10.2308/ajpt-51516

Hallak, R. T. P., & Silva, A. L. C. (2012). Determinantes das despesas com serviços de auditoria e consultoria prestados pelo auditor independente no Brasil. *Revista Contabilidade & Finanças*, *23*(60), 223-231. https://doi.org/10.1590/S1519-70772012000300007

Harjoto, M. A., & Laksmana, I. (2022). The impact of COVID-19 lockdown on audit fees and audit delay: international evidence. *International Journal of Accounting & Information Management*, *30*(4), 526-545. https://doi.org/10.1108/IJAIM-02-2022-0030

Hoitash, R., Markelevich, A., & Barragato, C. A. (2007). Auditor fees and audit quality. *Managerial Auditing Journal*, 22(8), 761-786. https://doi.org/10.1108/02686900710819634

IFAC. (2020). *Webinar 2: Performing the Audit in the Pandemic Environment*. 1-6. https://www.ifac.org/system/files/publications/files/Webinar-2_Audit-Execution-Summary_FINAL.pdf

İlaslan, Z. A., & Günsür, B. T. (2023). M&A activity during the COVID-19 pandemic. Applied Economics Letters, *Ahead-of-print*, 1-10. https://doi.org/10.1080/13504851.2023.2216434

Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, *3*(4), 305-360. https://doi.org/10.1016/0304-405X(76)90026-X

Johnstone, K. M., & Bedard, J. C. (2003). Risk management in client acceptance decisions. *The Accounting Review*, *78*(4), 1003-1025. https://doi.org/10.2308/accr.2003.78.4.1003

Joshi, P. L., & Al-Bastaki, H. (2000). Determinants of audit fees: evidence from the companies listed in Bahrain. *International Journal of Auditing*, *4*(2), 129-138. https://doi.org/10.1111/1099-1123.00308

Kothari, S. P., Leone, A. J., & Wasley, C. E. (2005). Performance matched discretionary accrual measures. *Journal of Accounting and Economics*, *39*(1), 163-197. https://doi.org/10.1016/j.jacceco.2004.11.002

Lisboa, A. S., & Silva, T. A. (2023). Evidenciação de Passivos Contingentes durante a Pandemia de Covid-19: Análise do Atendimento ao Ofício Circular CVM/SNC/SEP 02/2020. *Revista de Contabilidade e Controladoria*, *15*(1), 97-119. http://dx.doi.org/10.5380/rcc.v15i1.85422

Loughran, T., & McDonald, B. (2023). Management disclosure of risk factors and COVID-19. *Financial Innovation*, *9*(1), 1-9. https://doi.org/10.1186/s40854-023-00459-5

Lutfi, A., & Alqudah, H. (2023). The influence of technological factors on the computer-assisted audit tools and techniques usage during COVID-19. *Sustainability*, *15*(9), 7704. https://doi.org/10.3390/su15097704

Mazur, M., Dang, M., & Vega, M. (2021). COVID-19 and the march 2020 stock market crash. Evidence from S&P1500. *Finance Research Letters*, *38*, 1-8. https://doi.org/10.1016/j.frl.2020.101690

Mello, L. C. O., & Valentim, I. P. (2018). A influência dos mecanismos de governança corporativa nos honorários de auditoria das empresas brasileiras listadas na B3. *Revista de Contabilidade e Controladoria*, *10*(1), 103-123. http://dx.doi.org/10.5380/rcc.v10i1.54294

Murphy, M. L. 2020. *Assessing audit risks during the pandemic*. https://www.journalofaccountancy.com/news/2020/dec/assess-audit-risks-duringcoronavirus-pandemic.html.

Naser, K., & Nuseibeh, R. (2007). Determinants of audit fees: Empirical evidence from an emerging economy. *International Journal of Commerce and Management*, *17*(3), 239-254. https://doi.org/10.1108/10569210710833635

Ngwakwe, C. C. (2020). Effect of COVID-19 pandemic on global stock market values: a differential analysis. *Economica*, *16*(2), 255-269.

Nikkinen, J., & Sahlström, P. (2004). Does agency theory provide a general framework for audit pricing? *International Journal of Auditing*, *8*(3), 253-262. https://doi.org/10.1111/j.1099-1123.2004.00094.x

Oradi, J. (2021). CEO succession origin, audit report lag, and audit fees: Evidence from Iran. *Journal of International Accounting, Auditing and Taxation*, *45*, 100414. https://doi.org/10.1016/j.intaccaudtax.2021.100414

Park, S. G. (2021). Business performance and earnings quality in the information and communication industry before and after the COVID-19 pandemic. *Journal of Digital Convergence*, *19*(11), 113–119. https://doi.org/10.14400/JDC.2021.19.11.113

PCAOB. (2020). *Staff observations and reminders during the COVID-19 pandemic*. https://pcaobus.org/documents/staff-observations-reminders-covid-19-spotlight.pdf

Ramelli, S., & Wagner, A. F. (2020). Feverish Stock Price Reactions to COVID-19. *The Review of Corporate Finance Studies*, *9*(3), 622–655. https://doi.org/10.1093/rcfs/cfaa012

Reis, E. M. D., Lamounier, W. M., & Bressan, V. G. F. (2015). Evitar divulgar perdas: um estudo empírico do gerenciamento de resultados por meio de decisões operacionais. *Revista Contabilidade & Finanças*, *26*(69), 247-260.

Rocha, M. C., Pereira, A. G., & Oliveira, J. S. C. D. (2022). Força de trabalho e gerenciamento de resultados: Evidências no mercado de capitais brasileiro. *Revista Contabilidade & Finanças*, *33*, 300-314.

Roychowdhury, S. (2006). Earnings management through real activities manipulation. *Journal of Accounting and Economics*, *42*(3), 335-370. https://doi.org/10.1016/j.jacceco.2006.01.002

Satomi, E., Souza, P. M. R, Thomé, B. C., Reingenheim, C., Werebe, E., Troster, E. J., Scarin, F. C. L. C., Bacha, H. A., Grunspun, H. G., Ferraz, L. J. R., Bueno, M. A. S., Barros, M. T. L. B., & Borges, P. C. M. (2020). Alocação justa de recursos de saúde escassos diante da pandemia de COVID-19: Considerações éticas. *Einstein 18*, 1-5. https://dx.doi.org/10.31744/einstein_journal/2020AE5775

Sharif, A., Aloui, C., & Yarovaya, L. (2020). COVID-19 pandemic, oil prices, stock market, geopolitical risk and policy uncertainty nexus in the US economy: Fresh evidence

from the wavelet-based approach. *International Review of Financial Analysis*, *70*, 1-9. https://doi.org/10.1016/j.irfa.2020.101496

Shu, S. Z. (2000). Auditor resignations: clientele effects and legal liability. *Journal of Accounting and Economics*, *29*(2), 173-205. https://doi.org/10.1016/S0165-4101(00)00019-7

Sian, S. (2024). Remote audit: The challenges of re-creating the audit room during the Covid 19 pandemic. *Accounting Forum*, *48*(3), 506-535. https://doi.org/10.1080/01559982.2022.2151963

Siddiqui, J., Zaman, M., & Khan, A. (2013). Do Big-Four affiliates earn audit fee premiums in emerging markets? *Advances in Accounting*, *29*(2), 332-342. https://doi.org/10.1016/j.adiac.2013.09.007

Tee, C. M. (2019). CEO power and audit fees: Evidence from Malaysia. *International Journal of Auditing*, *23*(3), 365-386. https://doi.org/10.1111/ijau.12166

Van Raak, J., Peek, E., Meuwissen, R., & Schelleman, C. (2020). The effect of audit market structure on audit quality and audit pricing in the private-client market. *Journal of Business Finance & Accounting*, *47*(3-4), 456-488. https://doi.org/10.1111/jbfa.12414

Zaman, M., Hudaib, M., & Haniffa, R. (2011). Corporate governance quality, audit fees and non-audit services fees. *Journal of Business Finance & Accounting*, *38*(1), 165-197. https://doi.org/10.1111/j.1468-5957.2010.02224.x

Zhang, D., Hu, M., & Ji, Q. (2020). Financial markets under the global pandemic of COVID-19. *Finance research letters*, *36*, 1-6. https://doi.org/10.1016/j.frl.2020.101528

Zhang, T., & Huang, J. (2013). The risk premium of audit fee: Evidence from the 2008 financial crisis. *China Journal of Accounting Studies*, *1*(1), 47-61. https://doi.org/10.1080/21697221.2013.781766

APPENDIX

Appendix A

Correlation Matrix

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
(1) ComplexAudit	1,00												
(2) PAN	**0,12**	1,00											
(3) BIG4	**0,54**	-0,02	1,00										
(4) ROA	0,03	0,04	**0,11**	1,00									
(5) END	**0,28**	**0,05**	**0,23**	**-0,25**	1,00								
(6) TAM	**0,76**	**0,11**	**0,48**	**0,08**	**0,32**	1,00							
(7) AD	**-0,10**	-0,02	**-0,0**	**-0,18**	-0,01	**-0,09**	1,00						
(8) RAM	**-0,05**	0,03	**-0,12**	**-0,18**	-0,03	**-0,07**	**-0,56**	1,00					
(9) COMITAUD	**0,31**	**0,05**	**0,26**	0,03	**0,11**	**0,37**	**-0,07**	**-0,07**	1,00				
(10) DUALCEO	**-0,21**	**-0,10**	**-0,23**	-0,00	**-0,10**	**-0,19**	**0,08**	-0,04	**-0,14**	1,00			
(11) AUDITDELAY	**-0,19**	-0,01	**-0,13**	**-0,27**	0,04	**-0,20**	**0,20**	-0,03	**-0,10**	**0,11**	1,00		
(12) PARECMOD	**-0,12**	-0,00	**-0,13**	**-0,14**	0,00	**-0,11**	0,02	**0,07**	**-0,11**	0,01	**0,19**	1,00	
(13) LITIG	**-0,13**	**-0,27**	**-0,08**	**0,10**	**-0,19**	**-0,13**	**-0,05**	**0,06**	**-0,12**	**0,10**	-0,00	0,03	1,00

Nota: Coeficientes de correlação em negrito indicam significância ao nível de 5%.

A Influência da Pandemia do Coronavírus SARS-CoV-2 na Complexidade da Auditoria em Companhias Abertas Brasileiras

RESUMO

Objetivo: *Investigar a influência da crise da pandemia do coronavírus SARS-CoV-2 na complexidade da auditoria em companhias abertas brasileiras.*

Método: *A amostra final é composta por 165 empresas, com dados disponíveis na Refinitiv Eikon e na Comissão de Valores Mobiliários (CVM) durante o período de 2010-2022. A complexidade da auditoria foi mensurada a partir dos montantes pagos de honorários de auditoria, em linha com o estudo de Garcia et al. (2021), ao passo que o período da pandemia do coronavírus SARS-CoV-2 foi representado pelas observações durante o período 2020-2022, seguindo o estudo de Al-Qadasi et al. (2023). Para a realização das análises, foi utilizada a regressão com dados em painel.*

Originalidade/Relevância: *Este estudo preenche uma lacuna na literatura nacional acerca do efeito do coronavírus SARS-CoV-2 na complexidade da auditoria, bem como atende a recomendação proposta por Castro et al. (2015), que consideram relevante que estudos futuros examinem o efeito de crises financeiras nos honorários de auditoria, sendo essa uma medida de complexidade de auditoria. Assim, torna-se relevante para gestores, investidores e auditores, que são diretamente impactados por alterações nos honorários de auditoria.*

Resultados: *Os principais resultados evidenciam que a pandemia do coronavírus SARS-CoV-2 influencia positivamente na complexidade da auditoria no contexto brasileiro.*

Contribuições Teóricas/Metodológicas: *As implicações teóricas deste estudo residem na sinalização de que a pandemia do coronavírus SARS-CoV-2 exacerba os custos de agência oriundos dos honorários de auditoria, elevando o custo de assegurar que os gestores ajam no melhor interesse dos acionistas durante períodos de pandemia.*

Palavras-Chave: *Complexidade da Auditoria, SARS-CoV-2, Mercado de Capitais.*

Fernanda Mendes de Sousa
Universidade Federal Rural do Semiárido – UFERSA, Rio Grande do Norte, Brasil
f.fernandamsousa@gmail.com

Yuri Gomes Paiva Azevedo
Universidade Federal Rural do Semiárido – UFERSA, Rio Grande do Norte, Brasil
yuri.azevedo@ufersa.edu.br

Kléber Formiga Miranda
Universidade Federal Rural do Semiárido – UFERSA, Rio Grande do Norte, Brasil
mirandakf@ufersa.edu.br

Mariana Câmara Gomes e Silva
Universidade Federal Rural do Semiárido – UFERSA, Rio Grande do Norte, Brasil
mariana.camara@ufersa.edu.br

Alexsandro Gonçalves da Silva Prado
Universidade Federal Rural do Semiárido – UFERSA, Rio Grande do Norte, Brasil
alexsandro.prado@ufersa.edu.br

Recebido: Julho 30, 2024
Revisado: Janeiro 06, 2025
Aceito: Fevereiro 28, 2025
Publicado: Março 31, 2025


REVISTA CONTABILIDADE, GESTÃO E GOVERNANÇA
JOURNAL OF ACCOUNTING, MANAGEMENT AND GOVERNANCE


REVISTA CONTABILIDADE, GESTÃO E GOVERNANÇA
JOURNAL OF ACCOUNTING, MANAGEMENT AND GOVERNANCE